

**PHARMACY CHILLER  
REPLACEMENT REBID**



**Oregon State**  
**University**

**Construction Contracts Administration  
Oregon State University  
644 SW 13th Street  
Corvallis, Oregon 97333-4238**

**PROJECT #2105-18**

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**OREGON STATE UNIVERSITY**

**NOTICE OF OPPORTUNITY**

**ADVERTISEMENT FOR BIDS**

Oregon State University ("Owner") is accepting sealed bids for a public improvement project at Construction Contract Administration, Oregon State University, 644 SW 13<sup>th</sup> Ave., Corvallis, Oregon, until **Tuesday November 27, 2018, at 10:00AM local time**, for the Pharmacy Chiller Replacement Rebid project located on the campus of Oregon State University, Corvallis, Oregon. The project consists of the removal and replacement of the building chiller unit two pumps, and refrigerant coil in room 509 of the Pharmacy Building located at 1601 SW Jefferson Ave. Work shall include all electrical connections and upgrades that are required for the new chiller.

A mandatory examination of the site and conditions will be made on **Wednesday October 31, 2018, at 10:00 AM**. Bidders shall meet with the Owner's Representative at the east side by the loading dock of the pharmacy building located at 1601 SW Jefferson Ave. on the OSU campus. Attendance will be documented through a sign-in sheet prepared by the Owner's Authorized Representative. Prime bidders/proposers who arrive more than 5 minutes after start time of the meeting (as stated in the solicitation and by the Owner's Authorized Representative's watch) or after the discussion portion of the meeting (whichever comes first) shall not be permitted to sign in and will not be permitted to submit a bid on the project.

Bids will be opened and publicly read aloud on **Tuesday November 27, 2018, at 10:00AM**, at Construction Contract Administration, Oregon State University, 644 SW 13<sup>th</sup> Ave., Corvallis, Oregon by the Owner's representative or designee.

Bids will be received on a lump-sum basis for all of the work. Bid packets, plans and specifications shall be available for viewing and downloading at the OSU Online Planroom website, [www.osuplanroom.com](http://www.osuplanroom.com).

All bidders must comply with requirements of the prevailing wage law in ORS 279C.800 through ORS 279C.870. All bidders must be registered with the Construction Contractor's Board at the time of bid submission. No bid will be considered unless fully completed in the manner provided in the "Instructions to Bidders" upon the Bid Form provided and accompanied by Bid Security. OSU encourages bids from Minority, Women, and Emerging Small Businesses.

**OREGON STATE UNIVERSITY**

By:

BY: Kelly Oar

Purchasing Analyst

Oregon State University

**PUBLICATION AND DATE:**

Corvallis Gazette Times	-	October 16, 2018
Daily Journal of Commerce	-	October 15, 2018
Contracts & Careers	-	October 15, 2018

# **OREGON STATE UNIVERSITY**

## **INSTRUCTIONS TO BIDDERS**

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## **INSTRUCTIONS TO BIDDERS**

OSU Standard Chapter 580, Divisions 61 and 63 govern this OSU procurement process.

### **Article 1. Definitions**

**1.1.** Capitalized words used herein but not defined shall have the meaning set forth in the OSU General Conditions and OSU Standard 580-061-0010. The following terms used herein shall have the meaning set forth below:

**“Bid Form”**- refers to OSU form provided by Owner to be completed by Bidder.

**“Project Manual”**- The Project Manual includes, but is not necessarily limited to, the following: the Advertisement for Bids or Notice of Contracting Opportunity, these Instructions to Bidders, Supplemental Instructions to Bidders, Bid Form, Bid Bond, OSU General Conditions, Supplemental General Conditions (if any), Sample Supplement or Agreement, Performance Bond, Payment Bond, and the Plans and Specifications.

### **Article 2. Scope of Work**

**2.1** The Work contemplated in this document shall be for the Owner in connection with the Project described in the Project Manual.

### **Article 3. Examination of Site and Conditions**

**3.1** Before making a Bid, the Bidder shall examine the Work site to ascertain its physical condition. The Bidder shall be responsible for being fully informed as to the quality, quantity and sources of supply of the materials listed on the Project Manual. Failure to comply with this Section will not release Contractor from entering into the Contract nor excuse Contractor from performing the Work in strict accordance with the terms of the Contract Documents.

**3.2** The Owner will not be responsible for any loss or unanticipated costs which may arise as a result of Contractor's failure to be fully informed in advance with regard to all conditions pertaining to the Work and the character of the Work required.

**3.3.** No statement made by any officer, agent, or employee of the Owner in relation to the physical conditions pertaining to the Work site or quality, quantity, and supply of materials will be binding on the Owner, unless included in writing in the Project Manual or an Addendum.

### **Article 4. Substitute Materials Approval Process**

**4.1** Prior to submitting a Bid including a Substitution, the Bidder must first seek approval of the Substitution from the Architect (or Engineer, as appropriate hereafter) by submitting a written request for approval at least 10 calendar days prior to the Closing Date and Time. The Bidder submitting the request shall be responsible for its timely delivery.

**4.2** Substitution approval requests shall be accompanied by samples, records of performance, certified copies of tests by impartial and recognized laboratories, and such other information as the Architect may request.

**4.3** Within a reasonable time after receiving such a request the Owner (or Architect if so designated) will consider whether the Substitution sought by Bidder is of equal value, utility, as the designated product in the Project Manual. If the requested Substitution is approved an Addendum to the Project Manual shall be issued. A copy of each Addendum shall become a part of the Project Manual.

**4.4** When the Architect approves a Substitution by Addendum, it is with the understanding that the Contractor guarantees the substituted article or material to be equal or better than the one specified.

## **Article 5. Interpretation of Project Manual**

**5.1** A Bidder in doubt as to the meaning of any part of the Project Manual may submit a written request for an interpretation to the Architect at any time prior to 10 calendar days prior to the Closing Date and Time.

**5.2** Any interpretation of the Project Manual will be made only by a duly issued Addendum. The Owner will not be responsible for any other explanation or interpretation of the Project Manual nor for any other approval of a particular manufacturer's process or item.

**5.3** To establish a basis of quality, certain processes, types of machinery and equipment or kinds of materials may be specified in the Project Manual either by description of process or by designating a manufacturer by name and referring to a brand or product designation or by specifying a kind of material. Whenever a process is designated or a manufacturer named, brand or item designation given, or whenever a process or material covered by patent is designated or described, it shall be understood that the words "or approved equal" follow such name, designation or description, whether they do so or not.

## **Article 6. Execution of the Bid Form**

**6.1** The Bid Form relates to Bids on a specific Project Manual. Only the amounts and information asked for on the Bid Form furnished by the Owner will be considered as the Bid. Each Bidder shall Bid upon the Work exactly as set forth in the Bid Form. The Bidder shall include in the Bid a sum to cover the cost of all items contemplated by the Project Manual. Bids that fail to address alternates set forth on the Bid Form may be considered non-responsive.

**6.2** Each Bid Form must: 1) Be completed in accordance with these instructions; 2) Include the appropriate signatures as noted on the Bid Form; 3) Include numbers pertaining to base Bids stated both in writing and in figures; and 4) Include the Bidder's typed or clearly printed address.

**6.3** When Bidding on an alternate for which there is no charge, the Bidder shall write the words "No Charge" in the space provided on the Bid Form. If one or more alternates is shown on the Bid Form, the Bidder shall indicate whether each is "add" or "deduct."

## **Article 7. Prohibition of Alterations to Bid**

**7.1** Bids which are incomplete, or contain ambiguities or conditions not provided for in the Bid Form, may be rejected.

## **Article 8. Submission of Bid**

**8.1** Each Bid shall be sealed in an envelope, properly addressed to the appropriate project representative of the Owner, showing on the outside of the envelope the name of the Bidder and the name of the project. Bids will be received at the time and place stated in the Advertisement for Bids.

## **Article 9. Bid Closing and Opening of Bids**

**9.1** All Bids must be received by the Owner before the Closing Date and Time. Any Bids received after the Closing Date and Time will be rejected and returned to the Bidder unopened.

**9.2** At the time of opening and reading of Bids, each Bid received, irrespective of any irregularities or informalities, will be publicly opened and read aloud.

#### **Article 10. Acceptance or Rejection of Bids by Owner**

**10.1** Unless all Bids are rejected, the Owner will award the Contract based on the lowest responsive Bid from a responsible Bidder. If that Bidder does not execute the Contract, the Contract will be awarded to the next lowest responsible Bidder or Bidders in succession.

**10.2** The procedures for Contract awards shall be in compliance with the provisions of OSU Standards adopted by the Owner.

**10.3** The Owner reserves the right to reject all Bids and to waive minor informalities.

**10.4** The Owner reserves the right to hold the Bid and any required Bid security, of the three lowest Bidders for a period of 30 calendar days from the time of Bid opening pending award of the Contract. Following award of the Contract, any Bid security furnished by the three lowest Bidders may be held 20 calendar days pending execution of the Contract. All other Bids will be rejected and Bid security returned.

**10.5** In determining the lowest Bidder, the Owner reserves the right to take into consideration any or all authorized base Bids as well as alternates or combinations indicated in the Bid Form.

**10.6** If Owner has not accepted a Bid within 30 calendar days after the opening of the Bids, each of the three lowest Bidders may withdraw the Bid submitted and request the return of any Bid security then held.

#### **Article 11. Withdrawal of Bid**

**11.1** At any time prior to the Closing Date and Time a Bidder may withdraw its Bid. This will not preclude the submission of another Bid by such Bidder prior to the Closing Date and Time.

**11.2** After the Closing Date and Time, no Bidder will be permitted to withdraw its Bid within the time period specified in Article 10 for award and execution, except as provided for in that Article.

#### **Article 12. Execution of Contract, Agreement, Performance Bond and Payment Bond**

**12.1** The Owner will provide the successful Bidder with Contract Documents within 10 calendar days after the award of the Contract. The Bidder shall be required to execute the Contract as provided, including a Performance Bond and a Payment Bond from a surety company licensed to do surety business in the State of Oregon, within 20 calendar days after the award of the Contract. The Contract Documents shall be delivered to the Owner in the manner stated in the Notice of Award.

#### **Article 13. Recyclable Products**

**13.1** Contractors must use recyclable products to the maximum extent economically feasible in the performance of the Contract.

#### **Article 14. Security to Be Furnished by Each Bidder**

**14.1** Each Bid must be accompanied by either: 1) a cashier's check or a certified check drawn on a bank authorized to do business in the State of Oregon, or 2) a Bid Bond described hereinafter, executed in favor of Owner, for an

amount equal to 10 percent of the total Bid amount as a guarantee that if awarded the contract the Bidder will execute the contract and give a Performance Bond and Payment Bond as required.

**14.2** The Contractor's check or Bid Bond will be retained until the Contractor has entered into a Contract and furnished a 100 percent Performance Bond and 100 percent Payment Bond.

**14.3** The Owner reserves the right to hold the Bid security as described in Article 10. Should the successful Bidder fail to execute and deliver the Contract as provided for in Article 12, including a satisfactory performance bond and payment bond within 20 calendar days after the Bid has been accepted by the Owner, then the Contract award may be canceled and the Bid security may be forfeited as liquidated damages, at the option of the Owner. The date of the acceptance of the Bid and the award of the contract as contemplated by the Project Manual shall mean the date of acceptance specified in the Notice of Award.

## **Article 15. Execution of Bid Bond**

**15.1** Should the Bidder elect to utilize a Bid Bond as described in Article 14 in order to satisfy the Bid security requirements, such form must be completed in the following manner:

**15.1.1** Bid Bonds must be executed on OSU forms, which will be provided to all prospective Bidders by the Owner.

**15.1.2** The Bid Bond shall be executed on behalf of a bonding company licensed to do business in the State of Oregon.

**15.1.3** In the case of a sole individual, the Bid Bond need only be executed as principal by the sole individual. In the case of a partnership, the Bid Bond must be executed by at least one of the partners. In the case of a corporation, the Bid Bond must be executed by stating the official name of the corporation under which is placed the signature of an officer authorized to sign on behalf of the corporation followed by such person's official capacity, such as president, etc. This signature shall be attested by the secretary or assistant secretary of the corporation. The corporation seal should then be affixed to the Bid Bond. In the case of a limited liability company/corporation ("LLC"), the Bid Bond must be executed by stating the official name of the LLC under which is placed the signature of a member authorized to sign on behalf of the LLC.

**15.1.4** The name of the surety must be stated in the execution over the signature of its duly authorized attorney-in-fact and accompanied by the seal of the surety corporation.

**OREGON STATE UNIVERSITY**

**SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

**Project Name: PHARMACY CHILLER REPLACEMENT REBID**

**The following modify the Oregon State University “Instructions to Bidders” for this procurement. Where a portion of the Instructions to Bidders has been modified by these Supplemental Instructions to Bidders, the unaltered portions shall remain in effect.**

SB-1, Revise Article 4 as follows:

Replace sub-paragraph 4.3 in its entirety with the following:

“4.3 Within a reasonable time after receiving such a request the Owner (or Architect if so designated) will consider whether the Substitution sought by Bidder is of equal value, utility, as the designated product in the Project Manual. If the requested Substitution is approved, an Addendum to the Project Manual shall be issued by the Owner to each planholder and shall become a part of the Project Manual.”

SB-2, Security to be Furnished by Each Bidder

Delete Article 14 of Instructions to Bidders in its entirety.

SB-3, Execution of Bid Bond

Delete Article 15 of Instructions to Bidders in its entirety.

SB-4 Add New Article 16:

“Article 16. Public Works Bond.

At the time of submission of its bid, each bidder shall have on file with the Construction Contractors Board a public works bond required by ORS 279C.836, unless otherwise exempt under that statute. Failure to have on file a public works bond at the time of submission of the bid may result in rejection of the bidder’s bid as non-responsive.”

OREGON STATE UNIVERSITY

BID FORM

PROJECT: PHARMACY CHILLER REPLACEMENT REBID

BID CLOSING: TUESDAY NOVEMBER 27, 2018, AT 10:00AM

BID OPENING: TUESDAY NOVEMBER 27, 2018, AT 10:00AM

FROM: \_\_\_\_\_  
Name of Contractor

TO: Oregon State University ("Owner")  
Construction Contract Administration  
644 SW 13th Ave..  
Corvallis, Oregon 97333

1. The Undersigned (check one of the following and insert information requested):

- \_\_\_ a. An individual doing business under an assumed name registered under the laws of the State of \_\_\_\_\_; or
- \_\_\_ b. A partnership registered under the laws of the State of \_\_\_\_\_; or
- \_\_\_ c. A corporation organized under the laws of the State of \_\_\_\_\_; or
- \_\_\_ d. A limited liability corporation/company organized under the laws of the State of \_\_\_\_\_;

hereby proposes to furnish all material and labor and perform all work hereinafter indicated for the above project in strict accordance with the Contract Documents for the Basic Bid as follows:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

and the Undersigned agrees to be bound by the following documents:

- Notice of Opportunity
- Supplemental Instructions to Bidders
- Performance Bond and Payment Bond
- Supplemental OSU General Conditions
- Prevailing Wage Rates
- Plans and Specifications
- ADDENDA numbered \_\_\_ through \_\_\_, inclusive (fill in blanks)
- Instructions to Bidders
- Sample Contract
- OSU General Conditions
- Payroll and Certified Statement Form
- Drawings and Details

2. The work shall be completed within the time stipulated and specified in Division 1, Section 01 11 00, of the Specifications.

3. The Undersigned certifies that: (1) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (2) The contents of the Bid have not been

communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

4. The undersigned **HAS, HAS NOT** (*circle applicable status*) paid unemployment or income taxes in Oregon within the past 12 months and **HAS, HAS NOT** (*circle applicable status*) a business address in Oregon..

5. The Undersigned agrees, if awarded a contract, to comply with the provisions of ORS 279C.800 through 279C.870 pertaining to the payment of the prevailing rates of wage.

6. Contractor's CCB registration number is \_\_\_\_\_. As a condition to submitting a bid, a Contractor must be registered with the Oregon Construction Contractors Board in accordance with ORS 701.035 to 701.055, and disclose the registration number. Failure to register and disclose the number will render the bid unresponsive and it will be rejected, unless contrary to federal law.

7. The successful Bidder hereby certifies that all subcontractors who will perform construction work as described in ORS 701.005(2) were registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time the subcontractor(s) made a bid to work under the Contract.

8. The successful Bidder hereby certifies that, in compliance with the Worker's Compensation Law of the State of Oregon, its Worker's Compensation Insurance provider is \_\_\_\_\_, Policy No. \_\_\_\_\_, and that Contractor shall submit Certificates of Insurance as required.

9. Contractor's Project Manager for this project is: \_\_\_\_\_,  
Office Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_.

10. The Undersigned certifies that it has not discriminated against minority, women, or emerging small businesses in obtaining any subcontracts for this project.

11. The Undersigned agrees, if awarded the Contract, to execute and deliver to Owner, within twenty (20) calendar days after receiving the Contract Documents, an Agreement Form and a satisfactory Performance Bond and Payment Bond, each in an amount equal to one hundred (100) percent of the Contract sum, using forms provided by the Owner. The surety requested to issue the Performance Bond and Payment Bond will be: \_\_\_\_\_.

(*name of surety company - not insurance agency*)

The Undersigned hereby authorizes said surety company to disclose any information to the Owner concerning the Undersigned's ability to supply a Performance Bond and Payment Bond each in the amount of the Contract.

By signature below, Contractor agrees to be bound by this Bid.

NAME OF FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_

FEDERAL TAX ID \_\_\_\_\_

TELEPHONE NO \_\_\_\_\_

FAX NO \_\_\_\_\_

SIGNATURE 1) \_\_\_\_\_

Sole Individual - Signature

\_\_\_\_\_  
Sole Individual - Printed Name

or 2) \_\_\_\_\_

Partner

or 3) \_\_\_\_\_

Authorized Officer of Corporation - Signature

\_\_\_\_\_  
Authorized Officer of Corporation Printed Name

(SEAL)

\_\_\_\_\_  
Attested: Secretary of Corporation

*Payment information will be reported to the IRS under the name and taxpayer ID # provided above.  
Information not matching IRS records could subject Contractor to 31 percent backup withholding.*

**\*\*\*\*\* END OF BID \*\*\*\*\***

# OREGON STATE UNIVERSITY PUBLIC IMPROVEMENT CONTRACT

This Public Improvement Contract for the **(Insert Project Name)** (the "Contract"), made by and between Oregon State University, hereinafter called OWNER, and **(Insert Contractor's Name)** hereinafter called the CONTRACTOR (collectively the "Parties"), shall become effective on **(Insert contract award date)**, or the date this Contract has been signed by all the Parties, whichever is later.

## 1. Contract Price, Contract Documents and Work.

The CONTRACTOR, in consideration of the sum of \_\_\_\_\_ (the "Contract Price"), to be paid to the CONTRACTOR by OWNER in the manner and at the time hereinafter provided, and subject to the terms and conditions provided for in the Instructions to Bidders and other Contract Documents (as defined in the Oregon State University General Conditions referenced within the Instructions to Bidders), all of which are incorporated herein by reference, hereby agrees to perform all Work described and reasonably inferred from the Contract Documents. The Contract Price is the amount contemplated by the Base Bid adjusted for Alternates\_\_\_\_, as indicated in the accepted Bid.

Also, the following documents are incorporated by reference in this Contract and made a part hereof if checked for inclusion [X]:

[ ] (RESERVED)

## 2. Representatives.

CONTRACTOR has named **(Insert Name)** its' Authorized Representative to act on its behalf. OWNER designates, or shall designate, its Authorized Representative as indicted below (check one):

A. [ ] Unless otherwise specified in the Contract Documents, the OWNER designates **(Insert Name)** as its Authorized Representative in the administration of this Contract. The above-named individual shall be the initial point of contact for matters related to Contract performance, payment authorization, and to carry out the responsibilities of the OWNER.

B. [X] Name of OWNER'S Authorized Representative shall be submitted by OWNER in a separate writing.

## 3. Contract Dates.

COMMENCEMENT DATE: Within **(Insert # of Days)** days of the execution of the Contract ("Execution").

SUBSTANTIAL COMPLETION DATE: **(Insert # of Days)** from Contract Execution **(or a date certain)**.

FINAL COMPLETION DATE: **(Insert # of Days)** from Contract Execution **(or a date certain)**.

## 4. Integration

The Contract documents constitute the entire agreement between the parties. There are no other understandings, agreements or representations, oral or written, not specified herein regarding this Contract.

CONTRACTOR, by the signature below of its authorized representative, hereby acknowledges that it has read this Contract, understands it, and agrees to be bound by its terms and conditions.

**In witness whereof**, Oregon State University executes this Contract and the CONTRACTOR does execute the same as of the day and year indicated below.

CONTRACTOR DATA:  
**(Insert Contractor Name & Address)**

CONTRACTOR NAME:

CONTRACTOR FEDERAL ID #

CONTRACTOR CCB #

*[Payment information will be reported to the IRS under the name and taxpayer ID # provided above. Information must be provided prior to contract approval. Information not matching IRS records could subject Contractor to 31 percent backup withholding.]*

CONTRACTOR SIGNATURE

By \_\_\_\_\_  
Name/Title Date

Oregon State University

By \_\_\_\_\_

Michael J. Green Date  
Vice President for Finance and Administration

**OREGON STATE UNIVERSITY**

**PERFORMANCE BOND**

Bond No. \_\_\_\_\_  
Solicitation \_\_\_\_\_  
Project Name \_\_\_\_\_

_____ (Surety #1)	Bond Amount No. 1:	\$ _____
_____ (Surety #2)*	Bond Amount No. 2:*	\$ _____
<i>* If using multiple sureties</i>	Total Penal Sum of Bond:	\$ _____

We, \_\_\_\_\_ as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto Oregon State University (OSU), the sum of (Total Penal Sum of Bond)

\_\_\_\_\_  
(Provided, that we the Sureties bind ourselves in such sum “jointly and severally” as well as “severally” only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety), and

WHEREAS, the Principal has entered into contract No. \_\_\_\_\_ with the OSU, the plans, specifications, terms and conditions of which are contained within the Contract resulting from the above-referenced Solicitation;

WHEREAS, the terms and conditions of the Contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of Contract prices, are made a part of this Performance Bond by reference, whether or not attached to the contract (all hereafter called “Contract”); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal herein shall (1) faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, (2) shall well and truly and fully do and perform all matters and things undertaken by Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or without notice to the Sureties, (3) shall save, defend, indemnify and hold harmless OSU and its officers, board members, employees, agents and other representatives, against any direct or indirect damages or claim of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by

the Principal or its subcontractors, and (4) shall in all respects perform said contract according to law, then this obligation is to be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond, nor shall OSU be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapters 279C and 352, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**PRINCIPAL:** \_\_\_\_\_

By \_\_\_\_\_

Signature

\_\_\_\_\_  
Official Capacity

Attest: \_\_\_\_\_

Corporation Secretary

**SURETY:** \_\_\_\_\_

*[Add signatures for each surety if using multiple bonds]*

**BY ATTORNEY-IN-FACT:**

*[Power-of-Attorney must accompany each surety bond]*

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
City

\_\_\_\_\_  
State

\_\_\_\_\_  
Zip

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Fax

**OREGON STATE UNIVERSITY**

**PAYMENT BOND**

Bond No. \_\_\_\_\_  
Solicitation \_\_\_\_\_  
Project Name \_\_\_\_\_

\_\_\_\_\_ (Surety #1)                      Bond Amount No. 1:                      \$ \_\_\_\_\_  
\_\_\_\_\_ (Surety #2)\*                      Bond Amount No. 2:\*                      \$ \_\_\_\_\_  
\* *If using multiple sureties*                      Total Penal Sum of Bond:                      \$ \_\_\_\_\_

We, \_\_\_\_\_, as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto Oregon State University (OSU) the sum of (Total Penal Sum of Bond) \_\_\_\_\_ (Provided, that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety), and

WHEREAS, the Principal has entered into contract No. \_\_\_\_\_ with OSU, the plans, specifications, terms and conditions of which are contained within the Contract resulting from the above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Payment Bond by reference, whether or not attached to the contract (all hereafter called "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and schedule of contract prices which are set forth in the Contract and any attachments, and all authorized modifications of the Contract which increase the amount of the work, or the cost of the Contract, or constitute authorized extensions of time for performance of the Contract, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal shall (1) faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, (2) shall well and truly and fully do and perform all matters and things by it undertaken to be performed under said Contract and any duly authorized modifications that are made, upon the terms set forth therein, and within the time prescribed therein, or as extended therein as provided in the Contract, with or without notice to the Sureties, (3) shall save, defend, indemnify and hold harmless OSU, and its officers, board members, employees, agents and other representatives, against any claim for direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Contractor or its subcontractors, (4) shall promptly pay all persons supplying labor, materials or both to the Principal or its subcontractors for prosecution of the work provided in the Contract; (5) shall promptly pay all contributions due the State Industrial Accident Fund and the State Unemployment Compensation Fund from the Principal or its

subcontractors in connection with the performance of the Contract; (6) shall pay over to the Oregon Department of Revenue all sums required to be deducted and retained from the wages of employees of the Principal and its subcontractors pursuant to ORS 316.167;(7) shall permit no lien nor claim to be filed or prosecuted against the State or OSU on account of any labor or materials furnished; and (8) shall do all things required of the Principal by the laws of this State, then this obligation shall be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond, nor shall OSU be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapters 279C and 352, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES:

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**PRINCIPAL:** \_\_\_\_\_

By \_\_\_\_\_

Signature

\_\_\_\_\_  
Official Capacity

Attest: \_\_\_\_\_

Corporation Secretary

**SURETY:** \_\_\_\_\_

*[Add signatures for each if using multiple bonds]*

**BY ATTORNEY-IN-FACT:**

*[Power-of-Attorney must accompany each bond]*

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
City State Zip

\_\_\_\_\_  
Phone Fax

# OREGON STATE UNIVERSITY GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS

June 30, 2017

INSTRUCTIONS: The attached **Oregon State University General Conditions for Public Improvement Contracts** ("Public Improvement General Conditions") apply to all designated Public Improvement contracts. Changes to the Public Improvement General Conditions (including any additions, deletions or substitutions) should only be made by attaching Public Improvement Supplemental General Conditions. The text of these Public Improvement General Conditions should not otherwise be altered.

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**SECTION A  
GENERAL PROVISIONS**

**A.1 DEFINITION OF TERMS**

In the Contract Documents the following terms shall be as defined below:

**AMENDMENT**, means a writing which, when fully executed by the Parties to this Contract, constitutes a change to a Contract Document. Amendments shall be issued in accordance with the changes provisions of Section D and, if applicable, establish a Contract Price or Contract Time adjustment.

**APPLICABLE LAWS**, means federal, state and local laws, codes, rules, regulations and ordinances applicable to the Work and to the Contract.

**ARCHITECT/ENGINEER**, means the Person appointed by the Owner to make drawings and specifications and, to provide contract administration of the Work contemplated by the Contract to the extent provided herein or by supplemental instruction of Owner (under which Owner may delegate responsibilities to the Architect/Engineer), in accordance with ORS Chapter 671 (Architects) or ORS Chapter 672 (Engineers) and administrative rules adopted thereunder.

**CHANGE ORDER**, means a written order issued by the Owner to be later included as an Amendment. A Change Order shall not be effective until codified as an Amendment.

**CLAIM**, means a demand by Contractor pursuant to Section D.3 for review of the denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, submitted in accordance with the requirements and within the time limits established for review of Claims in these Public Improvement General Conditions.

**CONSTRUCTION CHANGE DIRECTIVE**, means a written order by the Owner to the Contractor requiring a change in the Work within the general scope of the Contract Documents, issued under the changes provisions of Section D.

**CONSTRUCTION SCHEDULE**, means the schedule prepared by the Contractor in CPM format and approved by the Owner, and all adjustments thereto approved by the Owner, that describes sequence and timing of the Work.

**CONTRACT**, means the written agreement between the Owner and the Contractor comprised of the Contract Documents which describe the Work to be done and the obligations between the parties.

**CONTRACT DOCUMENTS**, means the Public Improvement Contract, Public Improvement General Conditions, Supplemental General Conditions if any, the accepted Offer, Plans, Specifications, Construction Change Directives, Solicitation Document and addenda thereto, Instructions to Offerors, and Supplemental Instructions to Offerors, the CM/GC's RFQ proposal, the GMP Amendment, and any other Amendment, the Construction Schedule prepared and approved in accordance with the Construction Documents, and all other required Submittals.

**CONTRACT PERIOD**, as set forth in the Contract Documents, means the total period of time beginning with the full execution of a Contract and, if applicable, the issuance of a Notice to Proceed and concluding upon Final Completion.

**CONTRACT PRICE**, means the total of the awarded Offer amount, as increased or decreased by the price of approved alternates, as indicated in the Contract Documents.

**CONTRACT TIME**, means any incremental period of time allowed under the Contract to complete any portion of the Work as reflected in the project schedule.

**CONTRACTOR**, means the Person awarded the Contract for the Work contemplated.

**CPM**, means a critical path method format to be used for the Construction Schedule.

**DAYS**, are calendar days, including weekdays, weekends and holidays, unless otherwise specified.

**DIRECT COSTS**, means, unless otherwise provided in the Contract Documents, the cost of materials, including sales tax, cost of delivery; cost of labor, including social security, Medicare and unemployment insurance, and fringe benefits required by agreement or custom; worker's compensation insurance; project specific insurance (including, without limitation, Builder's Risk Insurance and Builder's Risk Installation Floater); bond premiums, rental cost of equipment, and machinery required for execution of the Work; and the additional costs of field personnel directly attributable to the Work.

**FINAL COMPLETION**, means the final completion of all requirements under the Contract, including Contract Closeout as described in Section K but excluding Warranty Work as described in Section I.2, and the final payment and release of all retainage, if any, released.

**FINAL PAYMENT**, means the last payment to the Contractor, including retainage, in connection with the Work.

**FORCE MAJEURE**, means an act, event or occurrence caused by fire, riot, war, acts of God, nature, sovereign, or public enemy, strikes, freight embargoes or any other act, event or occurrence that is beyond the control of the party to this Contract who is asserting Force Majeure.

**MWESB REPORT**, means an accurate report by the Contractor to the Owner identifying all Minority, Women and Emerging Small Business (MWESB) enterprises, as those terms are defined in ORS 200.005, receiving contracts throughout the course of the Work. An initial MWESB report is required (see Section E.2.9) and MWESB Reports are required annually (see Section E.2.9) and as a condition of final payment (see Section K.1). The initial report shall include the total number of contracts and subcontracts awarded to MWESB enterprises and the dollar value of their respective contracts and subcontracts. The annual reports shall include the total number of contracts and subcontracts awarded to MWESB enterprises, the dollar value of each, and the expenditure toward each contract and subcontract during the previous twelve (12) months. The final report shall include the total number of contracts and subcontracts awarded to MWESB enterprises and the dollar value of their respective contracts and subcontracts including all Contracts and Amendments incorporated during the course of the project. The reports shall only include enterprises certified with the State of Oregon as MWESB enterprises and shall include individual identification of each enterprise as a Minority business enterprise, a Women business enterprise, and/or an Emerging Small Business Enterprise, as applicable.

**NOTICE TO PROCEED**, means the official written notice from the Owner stating that the Contractor is to proceed with the Work defined in the Contract Documents. Notwithstanding the Notice to Proceed, Contractor shall not be authorized to proceed with the Work until all initial Contract requirements, including the Contract, performance bond and payment bond, and certificates of insurance, have been fully executed and submitted to Owner in a suitable form.

**OFFER**, means a bid in connection with Instructions to Bidders or a proposal in connection with a Request for Proposals.

**OFFEROR**, means a bidder in connection with Instructions to Bidders or a proposer in connection with a Request for Proposals.

**OVERHEAD**, means those items which may be included in the Contractor's markup (general and administrative expense and profit) and that shall not be charged as Direct Cost of the Work, including without limitation such Overhead expenses as wages or salary of personnel above the level of foreman (i.e., superintendents and project managers), expenses of Contractor's offices and supplies at the job site (e.g. job trailer) and at Contractor's principal place of business and including expenses of personnel staffing the job site office and Contractor's principal place of business, and Commercial General Liability Insurance and Automobile Liability Insurance.

**OWNER**, means Oregon State University(OSU). Owner may elect, by written notice to Contractor, to delegate certain duties to more than one party, including without limitation, to an Architect/Engineer. However, nothing in these Public Improvement General Conditions is intended to abrogate the separate design professional responsibilities of Architects under ORS Chapter 671 or of Engineers under ORS Chapter 672.

**PERSON**, means a natural person or entity doing business as a sole proprietorship, a partnership, a joint venture, a corporation, a limited liability company or partnership, or any other entity possessing the legal capacity to contract.

**PLANS**, means the drawings which show the location, type, dimensions, and details of the Work to be done under the Contract.

**PROJECT**, means the development, design, construction

**PUNCH LIST**, means the list of Work yet to be completed or deficiencies which need to be corrected in order to achieve Final Completion of the Contract.

**RECORD DOCUMENT**, means the as-built Plans, Specifications, testing and inspection records, product data, samples, manufacturer and distributor/supplier warranties evidencing transfer of ownership to Owner, operational and maintenance manuals, shop drawings, Construction Change Directives, MWESB Reports, correspondence, certificate(s) of occupancy, and other documents listed in Subsection B.9.1 of these Public Improvement General Conditions, recording all Services performed.

**SOLICITATION DOCUMENT**, means Instructions to Bidders or Offerors or a Request for Proposal or a Request for Quotes.

**SPECIFICATION**, means any description of the physical or functional characteristics of the Work, or of the nature of a

supply, service or construction item. Specifications may include a description of any requirement for inspecting, testing or preparing a supply, service or construction item for delivery and the quantities or qualities of materials to be furnished under the Contract. Specifications generally will state the results or products to be obtained and may, on occasion, describe the method and manner of doing the Work to be performed. Specifications may be incorporated by reference and/or may be attached to the Contract.

**SUBCONTRACT**, means a contract between the Contractor and a subcontractor for the performance of a portion of the Work.

**SUBCONTRACTOR**, means a Person having a direct contract with the Contractor, or another Subcontractor, to perform one or more items of the Work.

**SUBMITTAL**, means a shop drawing, product data, sample, catalog cut, or similar item for specific portions of the Work as required by the Construction Documents.

**SUBSTANTIAL COMPLETION**, means the date when the Owner accepts in writing the construction, alteration or repair of the improvement to real property constituting the Work or any designated portion thereof as having reached that state of completion when it may be used or occupied for its intended purpose. Substantial Completion of facilities with operating systems occurs only after thirty (30) continuous Days of successful, trouble-free operation of the operating systems as provided in Section K.3.2.

**SUBSTITUTIONS**, means items that in function, performance, reliability, quality, and general configuration are the same or better than the product(s) specified. Approval of any substitute item shall be solely determined by the Owner. The decision of the Owner is final.

**PUBLIC IMPROVEMENT SUPPLEMENTAL GENERAL CONDITIONS**, means those conditions that remove from, add to, or modify these Public Improvement General Conditions. Public Improvement Supplemental General Conditions may be included in the Solicitation Document or may be a separate attachment to the Contract.

**WORK**, means the furnishing of all materials, equipment, labor, transportation, services and incidentals necessary to successfully complete any individual item or the entire Contract and the carrying out of duties and obligations imposed by the Contract Documents.

## **A.2 SCOPE OF WORK**

The Work contemplated under this Contract includes all labor, materials, transportation, equipment and services for, and incidental to, the completion of all construction work in connection with the project described in the Contract Documents. The Contractor shall perform all Work necessary so that the project can be legally occupied and fully used for the intended use as set forth in the Contract Documents. Execution of the Contract by the Contractor is an express representation (1) that the Contractor understands the intent stated herein with respect to the Preconstruction Phase Services, and (2) the Contractor's execution of an Amendment, including the GMP Amendment, shall be an express and unqualified representation that the Contractor understands the intent stated herein and therein.

## **A.3 INTERPRETATION OF CONTRACT DOCUMENTS**

A.3.1 Unless otherwise specifically defined in the Contract

Documents, words which have well-known technical meanings or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Contract Documents are intended to be complementary. Whatever is called for in one, is interpreted to be called for in all. However, in the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following descending order of precedence:

- (a) Amendments and Construction Change Directives, with those of later date having precedence over those of an earlier date;
  - (b) The Supplemental General Conditions;
  - (c) Public Improvement General Conditions;
  - (d) The Public Improvement Contract;
  - (e) ) Construction Change Directive;
  - (f) Division One (General Requirements) of the Specifications;
  - (g) Detailed Schedules of finishes, equipment and other items included in the Specifications;
  - (h) Plans and Specifications (other than Division One and the Detailed Schedules to the Specifications);
  - (i) Large-scale drawings on Plans;
  - (j) Small-scale drawings on Plans;
  - (k) Dimension numbers written on Plans which shall prevail and take precedence over dimensions scaled from Plans;
  - (l) The Solicitation Document, and any addenda thereto.
  - (m) The Contractor's RFQ proposal.
- A.3.2 In the case of an inconsistency between Plans and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Owner's interpretation in writing.
- A.3.3 If the Contractor finds discrepancies in, or omissions from the Contract Documents, or if the Contractor is in doubt as to their meaning, the Contractor shall at once notify the Owner in writing. Matters concerning and interpretation of requirements of the Contract Documents will be decided by the Owner, who may delegate that duty in some instances to the Architect/Engineer. Responses to Contractor's requests for interpretation of Contract Documents will be made in writing by Owner (or the Architect/Engineer) within any time limits agreed upon or otherwise with reasonable promptness. Interpretations and decisions of the Owner (or Architect/Engineer) will be consistent with the intent of and reasonably inferable from the Contract Documents. Contractor shall not proceed without direction in writing from the Owner (or Architect/Engineer).
- A.3.4 References to standard specifications, manuals, codes of any technical society, organization or association, to the laws or regulations of any governmental authority, whether such reference be specific or by implication,

shall mean the latest standard specification, manual, code, laws or regulations in effect in the jurisdiction where the project is occurring on the first published date of the Solicitation Document, except as may be otherwise specifically stated.

#### **A.4 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE**

- A.4.1 It is understood that the Contractor, before submitting an Offer, has made a careful examination of the Contract Documents; has become fully informed as to the quality and quantity of materials and the character of the Work required; and has made a careful examination of the location and conditions of the Work and the sources of supply for materials. The Owner will in no case be responsible for any loss or for any unanticipated costs that may be suffered by the Contractor as a result of the Contractor's failure to acquire full information in advance in regard to all conditions pertaining to the Work. No oral agreement or conversation with any officer, agent, or personnel of the Owner, or with the Architect/Engineer either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.
- A.4.2 Should the Plans or Specifications fail to particularly describe the materials, kind of goods, or details of construction of any aspect of the Work, Contractor shall have the duty to make inquiry of the Owner and Architect/Engineer as to what is required prior to performance of the Work. Absent Specifications to the contrary, the materials or processes that would normally be used to produce first quality finished Work shall be considered a part of the Contract requirements.
- A.4.3 Any design errors or omissions noted by the Contractor shall be reported promptly to the Owner and confirmed in writing, including without limitation, any nonconformity with Applicable Laws.
- A.4.4 If the Contractor believes that adjustments to cost or Contract Time is involved because of clarifications or instructions issued by the Owner (or Architect/Engineer) in response to the Contractor's notices or requests for information, the Contractor must submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt by Contractor of the clarifications or instructions issued. If the Owner denies Contractor's request for additional compensation, additional Contract Time, or other relief that Contractor believes results from the clarifications or instructions, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process. If the Contractor fails to perform the obligations of Sections A.4.1 to A.4.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations.

#### **A.5 INDEPENDENT CONTRACTOR STATUS**

The service or services to be performed under this Contract are those of an independent contractor as defined in ORS 670.600.

Contractor represents and warrants that it is not an officer, employee or agent of the Owner as those terms are used in ORS 30.265.

#### **A.6 RETIREMENT SYSTEM STATUS AND TAXES**

Contractor represents and warrants that it is not a contributing member of the Public Employees' Retirement System and will be responsible for any federal or state taxes applicable to payment received under this Contract. Contractor will not be eligible for any benefits from these Contract payments of federal Social Security, employment insurance, workers' compensation or the Public Employees' Retirement System, except as a self-employed individual. Unless the Contractor is subject to backup withholding, Owner will not withhold from such payments any amount(s) to cover Contractor's federal or state tax obligations.

#### **A.7 GOVERNMENT EMPLOYMENT STATUS**

- A.7.1 If this payment is to be charged against federal funds, Contractor represents and warrants that it is not currently employed by the Federal Government. This does not preclude the Contractor from holding another contract with the Federal Government.
- A.7.2 Contractor represents and warrants that Contractor is not an employee of the State of Oregon for purposes of performing Work under this Contract

### **SECTION B ADMINISTRATION OF THE CONTRACT**

#### **B.1 OWNER'S ADMINISTRATION OF THE CONTRACT**

- B.1.1 The Owner shall administer the Contract as described in the Contract Documents (1) during construction (2) until Final Payment is due and (3) during the one-year period for correction of Work. The Owner will act as provided in the Contract Documents, unless modified in writing in accordance with other provisions of the Contract. In performing these tasks, the Owner may rely on the Architect/Engineer or other consultants to perform some or all of these tasks.
- B.1.2 The Owner will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Owner will not make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Owner will neither have control over or charge of, nor be responsible for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work. Inspection of the progress, quantity, or quality of the Work done by the Owner, any Owner representative, and public agency, the Architect/Engineer, or any inspector, shall not relieve the Contractor of any responsibility for the compliance of all Work with the Contract Documents.
- B.1.3 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, the Owner and Contractor shall communicate with each other about matters arising out of or relating to the Contract. Communications by and with the Architect/Engineer's consultants shall be through the Architect/Engineer. Communications by

and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

#### **B.2 Based upon the Architect/Engineer's evaluations of the Contractor's Application for Payment, or unless otherwise stipulated by the Owner, the Architect/Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts. CONTRACTOR'S MEANS AND METHODS; MITIGATION OF IMPACTS**

- B.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The 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 under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures.
- B.2.2 The Contractor is responsible to protect and maintain the Work during the course of construction and to mitigate any adverse impacts to the project, including those caused by authorized changes, which may affect cost, schedule, or quality.
- B.2.3 The Contractor is responsible for the actions of all its personnel, laborers, suppliers, and Subcontractors on the project. The Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of persons who are unfit or unskilled for the tasks assigned to them.

#### **B.3 MATERIALS AND WORKMANSHIP**

- B.3.1 The intent of the Contract Documents is to provide for the construction and completion in every detail of the Work described. All Work shall be performed in a professional manner and unless the means or methods of performing a task are specified elsewhere in the Contract Documents, Contractor shall employ methods that are generally accepted and used by the industry, in accordance with industry standards.
- B.3.2 The Contractor is responsible to perform the Work as required by the Contract Documents. Defective Work shall be corrected at the Contractor's expense.
- B.3.3 Work done and materials furnished shall be subject to inspection and/or observation and testing by the Owner to determine if they conform to the Contract Documents. Inspection of the Work by the Owner does not relieve the Contractor of responsibility for the Work in accordance with the Contract Documents.
- B.3.4 Contractor shall furnish adequate facilities, as required, for the Owner to have safe access to the Work including without limitation walkways, railings, ladders, tunnels, and platforms. Producers, suppliers, and fabricators shall also provide proper facilities and access to their

facilities.

ORS 671.560.

- B.3.5 The Contractor shall furnish Samples of materials for testing by the Owner and include the cost of the Samples in the Contract Price.

#### **B.4 PERMITS**

Contractor shall obtain and pay for all necessary permits, licenses and fees, except for those specifically excluded in the Supplemental General Conditions, for the construction of the Work, for temporary obstructions, enclosures, opening of streets for pipes, walls, utilities, environmental Work, etc., as required for the project.

Contractor shall be responsible for all violations of the law, in connection with the construction or caused by obstructing streets, sidewalks or otherwise. Contractor shall give all requisite notices to public authorities.

#### **B.5 COMPLIANCE WITH GOVERNMENT REGULATIONS**

- B.5.1 Contractor shall comply with Applicable Laws pertaining to the Work and the Contract. Failure to comply with such requirements shall constitute a breach of Contract and shall be grounds for Contract termination. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with the following, as applicable: (i) Title VI and VII of Civil Rights Act of 1964, as amended; (ii) Section 503 and 504 of the Rehabilitation Act of 1973, as amended; (iii) the Health Insurance Portability and Accountability Act of 1996; (iv) the Americans with Disabilities Act of 1990, as amended; (v) ORS Chapter 659; as amended; (vi) ORS Chapter 659A; as amended; (vii) all regulations and administrative rules established pursuant to the foregoing laws; and (viii) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations.
- B.5.2 Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations, and
- (a) Contractor shall not discriminate against Disadvantaged, Minority, Women or Emerging Small Business enterprises, as those terms are defined in ORS 200.005, or a business enterprise that is owned or controlled by or that employs a disabled veteran, as that term is defined in ORS 408.225, in the awarding of subcontracts.
  - (b) Contractor shall maintain, in current and valid form, all licenses and certificates required by Applicable Laws or this Contract when performing the Work.
- B.5.3 Unless contrary to federal law, Contractor shall certify that it shall not accept a bid from Subcontractors to perform Work as described in ORS 701.005 under this Contract unless such Subcontractors are registered with the Construction Contractors Board in accordance with ORS 701.021 to 701.068 at the time they submit their bids to the Contractor.
- B.5.4 Unless contrary to federal law, Contractor shall certify that each landscape contractor, as defined in ORS 671.520(2), performing Work under this Contract holds a valid landscape contractor's license issued pursuant to

- B.5.5 The following notice is applicable to Contractors who perform excavation Work. ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-00100. You may obtain copies of the rules by calling the center at (503)232-1987.

- B.5.6 Failure to comply with any or all of the requirements of B.5.1 through B.5.5 shall be a breach of Contract and constitute grounds for Contract termination. Damages or costs resulting from such noncompliance shall be the responsibility of Contractor.

#### **B.6 SUPERINTENDENCE**

Contractor shall keep on the site, during the progress of the Work, a competent superintendent and any necessary assistants who shall be satisfactory to the Owner and who shall represent the Contractor on the site. Directions given to the superintendent by the Owner shall be confirmed in writing to the Contractor.

#### **B.7 INSPECTION**

- B.7.1 Owner shall have access to the Work at all times.
- B.7.2 Inspection of the Work will be made by the Owner at its discretion. The Owner will have authority to reject Work that does not conform to the Contract Documents. Any Work found to be not in conformance with the Contract Documents, in the discretion of the Owner, shall be removed and replaced at the Contractor's expense.
- B.7.3 Contractor shall make or obtain at the appropriate time all tests, inspections and approvals of portions of the Work required by the Contract Documents or by Applicable Laws or orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work. The Contractor shall give the Owner timely notice of when and where tests and inspections are to be made so that the Owner may be present for such procedures. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner.
- B.7.4 As required by the Contract Documents, Work done or material used without required inspection or testing and/or without providing timely notice to the Owner may be ordered removed at the Contractor's expense.
- B.7.5 If directed to do so any time before the Work is accepted, the Contractor shall uncover portions of the completed Work for inspection. After inspection, the Contractor shall restore such portions of Work to the standard required by the Contract. If the Work uncovered is unacceptable or was done without required testing or inspection or sufficient notice to the Owner, the uncovering and restoration shall be done at the Contractor's expense. If the Work uncovered is acceptable and was done with sufficient notice to the

Owner, the uncovering and restoration will be paid for pursuant to an Amendment.

- B.7.6 If any testing or inspection 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 the Owner's and Architect/Engineer's services and expenses, shall be at the Contractor's expense.
- B.7.7 When the United States government participates in the cost of the Work, or the Owner has an agreement with other public or private organizations, or if any portion of the Work is being performed for a third party or in close proximity to third party facilities, representatives of these organizations shall have the right to inspect the Work affecting their interests or property. Their right to inspect shall not make them a party to the Contract and shall not interfere with the rights of the parties of the Contract. Instructions or orders of such parties shall be transmitted to the Contractor, through the Owner.

#### **B.8 SEVERABILITY**

If any provision of this Contract is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular provision held to be invalid.

#### **B.9 ACCESS TO RECORDS**

- B.9.1 Contractor shall keep, at all times on the Work site, one record copy of the complete Contract Documents, including the Plans, Specifications, Construction Change Directives and addenda, in good order and marked currently to record field changes and selections made during construction, and one record copy of Shop Drawings, Product Data, Samples and similar Submittals, and shall at all times give the Owner access thereto.
- B.9.2 Contractor shall retain and the Owner and its duly authorized representatives shall have access, for a period not less than ten (10) years, to all Record Documents, financial and accounting records, and other books, documents, papers and records of Contractor which are pertinent to the Contract, including records pertaining to Overhead and indirect costs, for the purpose of making audit, examination, excerpts and transcripts. If for any reason, any part of the Work or this Contract shall be subject to litigation, Contractor shall retain all such records until all litigation is resolved and Contractor shall continue to provide Owner and/or its agents with full access to such records until such time as all litigation is complete and all periods for appeal have expired and full and final satisfaction of any judgment, order or decree is recorded and Owner receives a record copy of documentation from Contractor.

#### **B.10 WAIVER**

Failure of the Owner to enforce any provision of this Contract shall not constitute a waiver or relinquishment by the Owner of the right to such performance in the future nor of the right to enforce any other provision of this Contract.

#### **B.11 SUBCONTRACTS AND ASSIGNMENT**

- B.11.1 Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound by the terms and conditions of these Public Improvement General Conditions, and to assume toward the Contractor all of the obligations and responsibilities which the Contractor assumes toward the Owner thereunder, unless (1) the same are clearly inapplicable to the subcontract at issue because of legal requirements or industry practices, or (2) specific exceptions are requested by Contractor and approved in writing by Owner. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with sub-subcontractors at any level.
- B.11.2 At Owner's request, Contractor shall submit to Owner prior to their execution either Contractor's form of subcontract, or the subcontract to be executed with any particular Subcontractor. If Owner disapproves such form, Contractor shall not execute the form until the matters disapproved are resolved to Owner's satisfaction. Owner's review, comment upon or approval of any such form shall not relieve Contractor of its obligations under this Agreement or be deemed a waiver of such obligations of Contractor.

- B.11.3 Contractor shall not assign, sell, or transfer its rights, or delegate its responsibilities under this Contract, in whole or in part, without the prior written approval of the Owner. No such written approval shall relieve Contractor of any obligations of this Contract, and any transferee shall be considered the agent of the Contractor and bound to perform in accordance with the Contract Documents. Contractor shall remain liable as between the original parties to the Contract as if no assignment had occurred.

#### **B.12 SUCCESSORS IN INTEREST**

The provisions of this Contract shall be binding upon and shall accrue to the benefit of the parties to the Contract and their respective permitted successors and assigns.

#### **B.13 OWNER'S RIGHT TO DO WORK**

Owner reserves the right to perform other or additional work at or near the project site with other forces than those of the Contractor. If such work takes place within or next to the project site, Contractor shall coordinate work with the other contractors or forces, cooperate with all other contractors or forces, carry out the Work in a way that will minimize interference and delay for all forces involved, place and dispose of materials being used so as not to interfere with the operations of another, and join the Work with the work of the others in an acceptable manner and perform it in proper sequence to that of the others. The Owner will resolve any disagreements that may arise between or among Contractor and the other contractors over the method or order of doing all work (including the Work). In case of unavoidable interference, the Owner will establish work priority (including the Work) which generally will be in the sequence that the contracts were awarded.

#### **B.14 OTHER CONTRACTS**

In all cases and at any time, the Owner has the right to execute other contracts related to or unrelated to the Work of this

Contract. The Contractor of this Contract shall fully cooperate with any and all other contractors without additional cost to the Owner in the manner described in section B.13.

#### **B.15 GOVERNING LAW**

This Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflict of laws.

#### **B.16 LITIGATION**

Any Claim between Owner and Contractor that arises from or relates to this Contract and that is not resolved through the Claims Review Process in Section D.3 shall be brought and conducted solely and exclusively within the Circuit Court of Benton County for the State of Oregon; provided, however, if a Claim must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this section be construed as a waiver by the State of Oregon on any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise, from any claim or from the jurisdiction of any court. CONTRACTOR, BY EXECUTION OF THIS CONTRACT, HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION B.16.

#### **B.17 ALLOWANCES**

B.17.1 The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct.

B.17.2 Unless otherwise provided in the Contract Documents:

- (a) when finally reconciled, allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- (b) Contractor's costs for unloading and handling at the site, labor, installation costs, Overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Price but not in the allowances;
- (c) whenever costs are more than or less than allowances, the Contract Price shall be adjusted accordingly by Amendment. The amount of the Amendment shall reflect
  - (i) the difference between actual costs and the allowances under Section B.17.2(a) and (2)
  - (ii) changes in Contractor's costs under Section B.17.2(b).
- (d) Unless Owner requests otherwise, Contractor shall provide to Owner a proposed fixed price for any allowance work prior to its performance.

#### **B.18 SUBMITTALS, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

B.18.1 The Contractor shall prepare and keep current, for the Architect's/Engineer's approval (or for the approval of Owner if approval authority has not been delegated to the Architect/Engineer), a schedule and list of

Submittals which is coordinated with the Contractor's construction schedule and allows the Architect/Engineer reasonable time to review Submittals. Owner reserves the right to finally approve the schedule and list of Submittals. Submittals include, without limitation, Shop Drawings, product data, and samples which are described below:

- (a) Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor (including any sub-subcontractor), manufacturer, supplier or distributor to illustrate some portion of the Work.
- (b) Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- (c) Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

B.18.2 Shop Drawings, Product Data, Samples and similar Submittals are not Contract Documents. The purpose of their Submittal is to demonstrate for those portions of the Work for which Submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review of Submittals by the Architect/Engineer is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, or for approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of any construction means, methods, techniques, sequences or procedures, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect/Engineer's review of the Contractor's Submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect/Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component. Informational Submittals upon which the Architect/Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect/Engineer without action.

B.18.3 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect/Engineer Shop Drawings, Product Data, Samples and similar Submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect/Engineer without action.

B.18.4 Approving and submitting shop drawings, product data, samples and similar Submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents.

B.18.5 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar Submittals until the respective Submittal has been approved by the Architect/Engineer.

B.18.6 The Work shall be in accordance with approved Submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect/Engineer's review or approval of Shop Drawings, Product Data, Samples or similar Submittals unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and (i) the Architect/Engineer has given written approval to the specific deviation as a minor change in the Work, or (ii) an Amendment or Construction Change Directive has been executed by Owner authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar Submittals by the Architect/Engineer's review or approval thereof.

B.18.7 In the event that Owner elects not to have the obligations and duties described under this Section B.18 performed by the Architect/Engineer, or in the event no Architect/Engineer is employed by Owner on the project, all obligations and duties assigned to the Architect/Engineer hereunder shall be performed by the Owner.

#### **B.19 SUBSTITUTIONS**

The Contractor may make Substitutions only with the written consent of the Owner, after evaluation by the Owner and only in accordance with an Amendment or Construction Change Directive. Substitutions shall be subject to the requirements of the bid documents. By making requests for Substitutions, the Contractor represents that the Contractor has personally investigated the proposed substitute product; represents that the Contractor will provide the same warranty for the Substitution that the Contractor would for the product originally specified unless approved otherwise; certifies that the cost data presented is complete and includes all related costs under this Contract including redesign costs, and waives all claims for additional costs related to the Substitution which subsequently become apparent; and will coordinate the installation of the accepted Substitution, making such changes as may be required for the Work to be completed in all respects.

#### **B.20 USE OF PLANS AND SPECIFICATIONS**

Plans, Specifications and related Contract Documents furnished to Contractor by Owner or Owner's Architect/Engineer shall be used solely for the performance of the Work under this Contract. Contractor and its Subcontractors and suppliers are authorized to use and reproduce applicable portions of such documents appropriate to the execution of the Work, but shall not claim any ownership or other interest in them beyond the scope of

this Contract, and no such interest shall attach. Unless otherwise indicated, all common law, statutory and terminate the Contract.

#### **B.21 FUNDS AVAILABLE AND AUTHORIZED**

If Owner fails to receive funding, appropriations, allocations or other expenditure authority as contemplated by Owner's budget and Owner determines, in its assessment and ranking of the policy objectives explicit or implicit in Owner's budget, Owner may other reserved rights, in addition to copyrights, are retained by Owner.

#### **B.22 NO THIRD PARTY BENEFICIARIES**

Owner and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly, or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Contract.

### **SECTION C WAGES AND LABOR**

#### **C.1 MINIMUM WAGE RATES ON PUBLIC WORKS**

Contractor shall comply fully with the provisions of ORS 279C.800 through 279C.870. Documents establishing those conditions, as determined by the Commissioner of the Bureau of Labor and Industries (BOLI), are included as attachments to or are incorporated by reference in the Contract Documents. Pursuant to ORS 279C.830(1)(c), Contractor shall pay workers at not less than the specified minimum hourly rate of wage, and shall include that requirement in all subcontracts. If the Work is subject to both the state prevailing wage rate law and the federal Davis-Bacon Act, Contractor shall pay the higher of the applicable state or federal prevailing rate of wage. Contractor shall provide written notice to all workers of the number of hours per day and days per week such workers may be required to work.

#### **C.2 PAYROLL CERTIFICATION AND FEE REQUIREMENTS**

C.2.1 In accordance with ORS 279C.845, the Contractor and every Subcontractor shall submit written certified statements to the Owner, on the form prescribed by the Commissioner of the Bureau of Labor and Industries, certifying the hourly rate of wage paid each worker which the Contractor or the Subcontractor has employed on the project and further certifying that no worker employed on the project has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the Contract, which certificate and statement shall be verified by the oath of the Contractor or the Subcontractor that the Contractor or Subcontractor has read the certified statement, that the Contractor or Subcontractor knows the contents of the certified statement, and, that to the Contractor's or Subcontractor's best knowledge and belief, the certified statement is true. The certified statements shall set out accurately and completely the payroll records for the prior week, including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of

hours worked, deductions made, and actual wages paid. Certified statements for each week during which the Contractor or Subcontractor has employed a worker on the project shall be submitted once a month, by the fifth business day of the following month. The Contractor and Subcontractors shall preserve the certified statements for a period of ten (10) years from the date of completion of the Contract.

C.2.2 Pursuant to ORS 279C.845(7), the Owner shall retain 25 percent of any amount earned by the Contractor on this public works project until the Contractor has filed the certified statements required by section C.2.1. The Owner shall pay to the Contractor the amount retained under this subsection within 14 days after the Contractor files the required certified statements, regardless of whether a Subcontractor has failed to file certified statements. Pursuant to ORS 279C.845(8), the Contractor shall retain 25 percent of any amount earned by a first-tier Subcontractor on this public works project until the first-tier Subcontractor has filed with the Owner the certified statements required by C.2.1. Before paying any amount retained under this subsection, the Contractor shall verify that the first-tier Subcontractor has filed the certified statement. Within 14 days after the first-tier Subcontractor files the required certified statement the Contractor shall pay the first-tier Subcontractor any amount retained under this subsection.

C.2.3 In accordance with statutory requirements and administrative rules promulgated by the Commissioner of the Bureau of Labor and Industries, the fee required by ORS 279C.825(1) will be paid by Owner to the Commissioner.

### **C.3 PROMPT PAYMENT AND CONTRACT CONDITIONS**

C.3.1 As a condition to Owner's performance hereunder, the Contractor shall:

C.3.1.1 Make payment promptly, as due, to all persons supplying to Contractor labor or materials for the prosecution of the Work provided for in this Contract.

C.3.1.2 Pay all contributions or amounts due the State Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the Contract.

C.3.1.3 Not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished. Contractor will not assign any claims that Contractor has against Owner, or assign any sums due by Owner, to Subcontractors, suppliers, or manufacturers, and will not make any agreement or act in any way to give Subcontractors a claim or standing to make a claim against the Owner.

C.3.1.4 Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

C.3.2 As a condition to Owner's performance hereunder, if Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor of a Subcontractor by any person in connection with the project as such claim becomes due, the proper officer(s) representing the Owner may pay the claim and charge the amount of the payment against funds due or to become due Contractor under this Contract.

Payment of claims in this manner shall not relieve the Contractor or the Contractor's surety from obligation with respect to any unpaid claims.

C.3.3 Contractor shall include in each subcontract for property or services entered into by the Contractor and a first-tier subcontractor, including a material supplier, for the purpose of performing a construction contract, a payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under its subcontract within ten (10) Days out of such amounts as are paid to the Contractor by the public contracting agency under such contract.

C.3.4 All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its Subcontractors complies with these requirements.

### **C.4 PAYMENT FOR MEDICAL CARE**

As a condition to Owner's performance hereunder, Contractor shall promptly, as due, make payment to any person, partnership, association or corporation furnishing medical, surgical, and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, all sums of which the Contractor agrees to pay for such services and all moneys and sums which the Contractor has collected or deducted from the wages of personnel pursuant to any law, contract or agreement for the purpose of providing or paying for such services.

### **C.5 HOURS OF LABOR**

As a condition to Owner's performance hereunder, no person shall be employed to perform Work under this Contract for more than ten (10) hours in any one day or forty (40) hours in any one week, except in cases of necessity, emergency or where public policy absolutely requires it. In such instances, Contractor shall pay the employee at least time and a half pay:

(a) For all overtime in excess of eight (8) hours a day or forty (40) hours in any one week when the work week is five consecutive Days, Monday through Friday; or

(b) For all overtime in excess of ten (10) hours a day or forty (40) hours in any one week when the work week is four consecutive Days, Monday through Friday; and

(c) For all Work performed on Saturday and on any legal holiday specified in ORS 279C.540.

This section C.5 will not apply to Contractor's Work under this Contract to the extent Contractor is currently a party to a collective bargaining agreement with any labor organization.

This Section C.5 shall not excuse Contractor from completion of the Work within the time required under this Contract.

**SECTION D  
CHANGES IN THE  
WORK**

**D.1 CHANGES IN WORK**

D.1.1 The terms of this Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever, without prior written agreement and then only after any necessary approvals have been obtained. An Amendment or Change Order is required, which shall not be effective until its execution by the parties to this Contract and all approvals required by public contracting laws have been obtained.

D.1.2 It is mutually agreed that changes in Plans, quantities, or details of construction are inherent in the nature of construction and may be necessary or desirable during the course of construction. Within the general scope of this Contract, the Owner may at any time, without notice to the sureties and without impairing the Contract, require changes consistent with this Section D.1. All changes to the Work shall be documented and Amendments shall be executed under the conditions of the Contract Documents. Such changes may include, but are not limited to:

- (a) Modification of specifications and design.
- (b) Increases or decreases in quantities.
- (c) Increases or decreases to the amount of Work.
- (d) Addition or elimination of any Work item.
- (e) Change in the duration of the project.
- (f) Acceleration or delay in performance of Work.
- (g) Deductive changes,
- (h) Changed conditions.

Deductive changes are those that reduce the scope of the Work, and shall be made by mutual agreement whenever feasible. In cases of suspension or partial termination under Section J, Owner reserves the right to unilaterally impose a deductive change and to self-perform such Work, for which the provisions of B.13 (Owner's Right to Do Work) shall then apply. Adjustments in compensation shall be made under the provisions of D.1.3, in which costs for deductive changes shall be based upon a Direct Costs adjustment together with the related percentage markup specified for profit, Overhead and other indirect costs, unless otherwise agreed to by Owner.

D.1.3 The Owner and Contractor agree that adjustments to or deletions from the Work shall be administered and compensated according to the following:

- (a) Unit pricing may be utilized at the Owner's option when unit prices or solicitation alternates were provided that established the cost for adjustments to Work, and a binding obligation exists under the Contract on the parties covering the terms and conditions of the adjustment to Work.
- (b) If the Owner elects not to utilize unit pricing, or in the event that unit pricing is not available or appropriate, fixed pricing may be used for adjustments to or deletions from the Work. In fixed pricing, the basis of payments or total price shall be agreed upon in writing between the parties to the Contract, and shall be established before the Work is done whenever feasible. Notwithstanding the foregoing, the mark-ups set forth in D.1.3(c) shall

be utilized in establishing fixed pricing, and such mark-ups shall not be exceeded. Cost and price data relating to adjustments to or deletions from the Work shall be supplied by Contractor to Owner upon request, but Owner shall be under no obligation to make such requests.

- (c) In the event that unit pricing and fixed pricing are not utilized, then adjustments to or deletions from the Work shall be performed on a cost reimbursement basis for Direct Costs. Such Work shall be compensated on the basis of the actual, reasonable and allowable cost of labor, equipment, and material furnished on the Work performed. In addition, the following markups shall be added to the Contractor's or Subcontractor's Direct Costs as full compensation for profit, Overhead and other indirect costs for Work directly performed with the Contractor's or Subcontractor's own forces:

On Labor.....	15%
On Equipment.....	10%
On Materials.....	10%

- (d) When adjustments to or deletions from the Work under D.1.3(c) are invoiced by an authorized Subcontractor at any level, each ascending tier Subcontractor or Contractor will be allowed a supplemental mark-up on each piece of subcontract Work covered by an Amendment as follows:

\$0.00 - \$5,000.00	10%,
and then Over \$5,000.00	5%

Notwithstanding the foregoing, the maximum aggregate markup to be billed shall not exceed 10% regardless of the number of Subcontract tiers.

Payments made to the Contractor shall be complete compensation for Overhead, profit, and all costs that were incurred by the Contractor or by other forces furnished by the Contractor, including Subcontractors, for adjustments to or deletions from the Work pursuant to an Amendment or Change Order. Owner may establish a maximum cost for additional Work under this Section D.1.3, which shall not be exceeded for reimbursement without additional written authorization from Owner in the form of an Amendment or Change Order. Contractor shall not be required to complete such additional Work without additional authorization.

- D.1.4 Any necessary adjustment of Contract Time that may be required as a result of adjustments to or deletions from the Work must be agreed upon by the parties before the start of the revised Work unless Owner authorizes Contractor to start the revised Work before agreement on Contract Time adjustment. Contractor shall submit any request for additional compensation (and additional Contract Time if Contractor was authorized to start Work before an adjustment of Contract Time was approved) as soon as possible but no later than thirty (30) Days after receipt of Owner's request for additional Work. Contractor agrees that this thirty (30) Day notice period is adequate time for it to request and document the amount of additional compensation or adjustment of Contract Time. If Contractor's request for additional compensation or adjustment of Contract Time is not made within the

thirty (30) Day time limit, Contractor agrees its requests pertaining to that additional Work shall be barred. The thirty (30) Day time limit for making requests shall not be extended for any reason, including without limitation Contractor's claimed inability to determine the amount of additional compensation or adjustment of Contract Time, unless an extension is granted in writing by Owner. If the Owner denies Contractor's timely request for additional compensation or adjustment of Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process. No other reimbursement, compensation, or payment will be made, except as provided in Section D.1.5 for impact claims.

- D.1.5 If any adjustment to Work under Section D.1.3 causes an increase or decrease in the Contractor's cost of, or the Contract Time required for the performance of any other part of the Work under this Contract, Contractor shall submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt of Owner's request for adjustments to or deletions from the Work by Contractor.

The thirty (30) Day time limit applies to claims of Subcontractors, suppliers, or manufacturers who may be affected by Owner's request for adjustments to or deletions from the Work and who request additional compensation or an extension of Contract Time to perform; Contractor has responsibility for contacting its Subcontractors, suppliers, or manufacturers within the thirty (30) Day time limit, and including their requests with Contractor's requests. If the request involves Work to be completed by Subcontractors, or materials to be furnished by suppliers or manufacturers, such requests shall be submitted to the Contractor in writing with full analysis and justification for the adjustments to compensation and Contract Time requested. The Contractor shall analyze and evaluate the merits of the requests submitted by Subcontractors, suppliers, and manufacturers to Contractor prior to including those requests and Contractor's analysis and evaluation of those requests with Contractor's requests for adjustments to compensation or Contract Time that Contractor submits to the Owner. Failure of Subcontractors, suppliers, manufacturers or others to submit their requests to Contractor for inclusion with Contractor's requests submitted to Owner within the time period and by the means described in this section shall constitute a waiver of these Subcontractor claims. The Owner will not consider direct requests or claims from Subcontractors, suppliers, manufacturers or others not a party to this Contract. The consideration of such requests and claims under this section does not give any Person, not a party to the Contract the right to bring a claim against Owner, whether in this claims process, in litigation, or in any dispute resolution process.

If the Owner denies the Contractor's request for adjustment to compensation or Contract Time and the request is timely as set forth herein, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

- D.1.6 Contractor agrees that no request or Claim for additional costs or an adjustment of Contract Time shall be allowed if made after receipt of Final Payment application under this Contract. Final Payment

application must be made by Contractor within the time required under Section E.6.4.

- D.1.7 It is understood that changes in the Work are inherent in construction of this type. The number of changes, the scope of those changes, and the effect they have on the progress of the original Work cannot be defined at this time. The Contractor is notified that numerous changes may be required and that there will be no compensation made, unless and only to the extent otherwise provided in the Contract Documents, to the Contractor directly related to the number of changes. Each change will be evaluated for extension of Contract Time and increase or decrease in compensation based on its own merit.

## **D.2 DELAYS**

- D.2.1 Delays in construction include "Avoidable Delays", which are defined in Section D.2.1.1, and "Unavoidable Delays", which are defined in Section D.2.1.2. The effect of Avoidable Delays is described in Section D.2.2 and the effect of Unavoidable Delays is described in Section D.2.3.

- D.2.1.1 Avoidable Delays include any delays other than Unavoidable Delays, and include delays that otherwise would be considered Unavoidable Delays but that:

- (a) Could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.
- (b) Affect only a portion of the Work and do not necessarily prevent or delay the prosecution of other parts of the Work or the completion of the whole Work within the Contract Time.
- (c) Do not impact activities on the accepted CPM Construction Schedule.
- (d) Are associated with the reasonable interference of other contractors employed by the Owner that do not necessarily prevent the completion of the whole Work within the Contract Time.

- D.2.1.2 Unavoidable Delays include delays other than Avoidable Delays that are:

- (a) To the extent caused by any actions of the Owner, or any other employee or agent of the Owner, or by separate contractor employed by the Owner.
- (b) To the extent caused by any site conditions that differ materially from what was represented in the Contract Documents or from conditions that would normally be expected to exist and be inherent to the construction activities defined in the Contract Documents. The Contractor agrees to notify the Owner immediately of differing site conditions before the area has been disturbed. The Owner will investigate the area and make a determination as to whether the conditions differ materially from either the conditions stated in the Contract Documents or those that could reasonably be expected in execution of this particular Contract. If Contractor and the Owner agree that a differing site condition exists, any adjustment to compensation or Contract Time will be determined based on the process set forth in Section D.1.5 for adjustments to or deletions from Work. If the Owner disagrees that a differing site

condition exists and denies Contractor's request for additional compensation or Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

- (c) To the extent caused by Force Majeure acts, events or occurrences that could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.
- (d) To the extent caused by adverse weather conditions. Any adverse weather conditions must be substantiated by documentary evidence that weather conditions were abnormal for the specific time period claimed, could not have been anticipated by the Contractor, and adversely impacted the Project in a manner that could not be avoided by rescheduling the Work or by implementing measures to protect against the weather so that the Work could proceed. A rain, windstorm, high water, or other natural phenomenon for the specific locality of the Work, which might reasonably have been anticipated from the previous 10-year historical records of the general locality of the Work, shall not be construed as abnormal. The parties agree that rainfall greater than the following levels cannot be reasonably anticipated:

- (i) Daily rainfall equal to, or greater than, 0.50 inch during a month when the monthly rainfall exceeds the normal monthly average by twenty- five percent (25 %) or more.
- (ii) daily rainfall equal to, or greater than, 0.75 inch at any time.

The Office of the Environmental Data Service of the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce nearest the Project site shall be considered the official agency of record for weather information.

D.2.2 Contractor agrees it is not entitled to additional compensation or additional Contract Time for Avoidable Delays.

D.2.3 In the event of Unavoidable Delays, based on principles of equitable adjustment, Contractor may be entitled to the following:

- (a) Contractor may be entitled to additional compensation or additional Contract Time, or both, for Unavoidable Delays described in Section D.2.1.2 (a) and (b).
- (b) Contractor may be entitled to additional Contract Time for Unavoidable Delays described in Section D.2.1.2(c) and (d).

In the event of any requests for additional compensation or additional Contract Time, or both, as applicable, arising under this Section D.2.3 for Unavoidable Delays, other than requests for additional compensation or additional Contract Time for differing site conditions for which a review process is established under Section D.2.1.2 (b), Contractor must submit a written notification of the delay to the Owner within two (2) Days of the occurrence of the cause of the delay. This

written notification shall state the cause of the potential delay, the project components impacted by the delay, and the anticipated additional Contract Time extension or the additional compensation, or both, as applicable, resulting from the delay. Within seven (7) Days after the cause of the delay has been mitigated, or in no case more than thirty (30) Days after the initial written notification, the Contractor agrees to submit to the Owner, a complete and detailed request for additional compensation or additional Contract Time, or both, as applicable, resulting from the delay. If the Owner denies Contractor's request for additional compensation or adjustment of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process, provided Contractor has complied with the requirement in this Section D.2.3. Contractor agrees any Claim it may have is barred if Contractor does not comply with the requirements herein.

If Contractor does not timely submit the notices required under this Section D.2, then unless otherwise prohibited by law, Contractor's Claim shall be barred.

### **D.3 CLAIMS REVIEW PROCESS**

D.3.1 All Contractor Claims shall be referred to the Owner for review. Contractor's Claims, including Claims for adjustments to compensation or Contract Time, shall be submitted in writing by Contractor to the Owner within five (5) Days after a denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, provided that such initial request has been submitted in accordance with the requirements and within the time limits established in these Public Improvement General Conditions. Within thirty (30) Days after the initial Claim, Contractor shall submit to the Owner a complete and detailed description of the Claim (the "Detailed Notice") that includes all information required by Section D.3.2. Contractor agrees that, unless the Claim is made in accordance with these time requirements, Contractor voluntarily waived all rights to prosecute its Claim.

D.3.2 The Detailed Notice of the Claim shall be submitted in writing by Contractor and shall include a detailed, factual statement of the basis of the Claim, pertinent dates, Contract provisions which support or allow the Claim, reference to or copies of any documents which support the Claim, the dollar value of the Claim, and the Contract Time adjustment requested for the Claim. If the Claim involves Work to be completed by Subcontractors, the Contractor will analyze and evaluate the merits of the Subcontractor claim prior to forwarding it and that analysis and evaluation to the Owner. The Owner will not consider direct claims from Subcontractors, suppliers, manufacturers, or others not a party to this Contract. Contractor agrees that it will make no agreement, covenant, or assignment, nor will it commit any other act that will permit or assist any Subcontractor, supplier, manufacturer, or other to directly or indirectly make a claim against Owner.

D.3.3 The Owner will review all Claims and take one or more of the following preliminary actions within ten (10) Days of receipt of the Detailed Notice of a Claim: (1) request additional supporting information from the Contractor; (2) inform the Contractor and Owner in writing of the time required for adequate review and response; (3) reject the Claim in whole or in part and identify the reasons for rejection; (4) based on principles of equitable adjustment,

recommend approval of all or part of the Claim; or  
(5) propose an alternate resolution.

D.3.4 The Owner's decision shall be final and binding on the Contractor unless appealed by written notice to the Owner within fifteen (15) Days of receipt of the decision. The Contractor must present written documentation supporting the Claim within fifteen (15) Days of the notice of appeal. After receiving the appeal documentation, the Owner shall review the materials and render a decision within thirty (30) Days after receiving the appeal documents.

D.3.5 The decision of the Owner shall be final and binding unless the Contractor delivers to the Owner its request for mediation, which shall be a non-binding process, within fifteen (15) Days of the date of the Owner's decision. The mediation process will be considered to have commenced as of the date the Contractor delivers the request. Both parties acknowledge and agree that participation in mediation is a prerequisite to commencement of litigation of any disputes relating to the Contract. Both parties further agree to exercise their best efforts in good faith to resolve all disputes within sixty (60) Days of the commencement of the mediation through the mediation process set forth herein.

In the event that a lawsuit must be filed within this sixty (60) Day period in order to preserve a cause of action, the parties agree that, notwithstanding the filing, they shall proceed diligently with the mediation to its conclusion prior to actively prosecuting the lawsuit, and shall seek from the Court in which the lawsuit is pending such stays or extensions, including the filing of an answer, as may be necessary to facilitate the mediation process. Further, in the event settlements are reached on any issues through mediation, the plaintiff shall promptly cause to be entered by the Court a stipulated general judgment of dismissal with prejudice, or other appropriate order limiting the scope of litigation as provided in the settlement.

D.3.6 Should the parties arrive at an impasse regarding any Claims or disputed Claims, it is agreed that the parties shall participate in mediation as specified in Section D.3.5. The mediation process will be considered to have been commenced as of the date one party delivers to the other its request in writing to mediate. The mediator shall be an individual mutually acceptable to both parties, but in the absence of agreement each party shall select a temporary mediator and the temporary mediators shall jointly select the permanent mediator. Each party shall pay its own costs for the time and effort involved in mediation. The cost of the mediator shall be split equally between the two parties. Both parties agree to exercise their best effort in good faith to resolve all disputes in mediation. Participation in mediation is a mandatory requirement of both the Owner and the Contractor. The schedule, time and place for mediation will be mutually acceptable, or, failing mutual agreement, shall be as established by the mediator. The parties agree to comply with Owner's administrative rules governing the confidentiality of mediation, if any, and shall execute all necessary documents to give effect to such confidentiality rules. In any event, the parties shall not subpoena the mediator or otherwise require the mediator to produce records, notes or work product, or to testify in any future proceedings as to information disclosed or representations made in the course of mediation, except to the extent disclosure is required by law.

D.3.7 Unless otherwise directed by Owner, Contractor shall proceed with the Work while any Claim, or mediation or litigation arising from a Claim, is pending. Regardless of the review period or the final decision of the Owner, the Contractor shall continue to diligently pursue the Work as identified in the Contract Documents. In no case is the Contractor justified or allowed to cease or Delay Work, in whole or in part, without a written stop work order from the Owner.

## **SECTION E PAYMENTS**

### **E.1 SCHEDULE OF VALUES**

The Contractor shall submit, at least ten (10) Days prior to submission of its first application for progress payment, a schedule of values ("Schedule of Values") for the contracted Work. This schedule shall provide a breakdown of values for the contracted Work and will be the basis for progress payments. The breakdown shall demonstrate reasonable, identifiable, and measurable components of the Work.

Unless objected to by the Owner, this schedule shall be used as the basis for reviewing Contractor's applications for payment. If objected to by Owner, Contractor shall revise the schedule of values and resubmit the same for approval of Owner.

### **E.2 APPLICATIONS FOR PAYMENT**

E.2.1 Owner shall make progress payments on the Contract monthly as Work progresses, in accordance with the requirements of this Section E.2. Applications for payment shall be based upon estimates of Work completed and the Schedule of Values. As a condition precedent to Owner's obligation to pay, all applications for payment shall be approved by the Owner. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein. Owner shall pay to Contractor interest for overdue invoices at the rate of two-thirds of one percent per month on the progress payment, not including retainage, due the Contractor. Overdue invoices will be those that have not been paid within forty-five (45) days from the latest of:

- (a) The date of the receipt of the accurate invoice;
- (b) The date Owner receives the correct application for payment if no invoice is received;
- (c) The date all goods and services have been received;  
or
- (d) The date a Claim is made certain by agreement of the parties or by operation of law.

Notwithstanding the foregoing, in instances when an application for payment is filled out incorrectly, or when there is any defect or impropriety in any submitted application or when there is a good faith dispute, Owner shall so notify the Contractor within fifteen (15) Days stating the reason or reasons the application for payment is defective or improper or the reasons for the dispute. A defective or improper application for payment, if corrected by the Contractor within seven (7) Days of being notified by the Owner, shall not cause a payment to be made later than specified in this section unless interest is also paid. Payment of interest will be postponed when payment on the principal is delayed because of disagreement between the Owner and the Contractor.

Owner reserves the right, instead of requiring the Contractor to correct or resubmit a defective or improper application for payment, to reject the defective or improper portion of the application for payment and pay the remainder of the application for such amounts which are correct and proper.

Owner, upon written notice to the Contractor, may elect to make payments to the Contractor only by means of Electronic Funds Transfers (EFT) through Automated Clearing House (ACH) payments. If Owner makes this election, the Contractor shall arrange for receipt of the EFT/ACH payments.

E.2.2 .2 Contractor shall submit to the Owner an application for each payment and, if required, receipts or other vouchers showing payments for materials and labor including payments to Subcontractors. Contractor shall include in its application for payment a schedule of the percentages of the various parts of the Work completed, based on the Schedule of Values which shall aggregate to the payment application total, and shall include, on the face of each copy thereof, a certificate in substantially the following form:

"I, the undersigned, hereby certify that the above bill is true and correct, and the payment therefore, has not been received.

Signed: \_\_\_\_\_  
Dated: \_\_\_\_\_"

E.2.3 Generally, applications for payment will be accepted only for materials that have been installed. Under special conditions, applications for payment for stored materials will be accepted at Owner's sole discretion. Such a payment, if made, will be subject to the following conditions:

(a) The request for stored material shall be submitted at least thirty (30) Days in advance of the application for payment on which it appears. Applications for payment shall be entertained for major equipment, components or expenditures only.

(b) The Contractor shall submit applications for payment showing the quantity and cost of the material stored.

(c) The material shall be stored in a bonded warehouse and Owner shall be granted the right to access the material for the purpose of removal or inspection at any time during the Contract Period.

(d) The Contractor shall name the Owner as co-insured on the insurance policy covering the full value of the property while in the care and custody of the Contractor until it is installed. A certificate noting this coverage shall be issued to the Owner.

(e) Payments shall be made for materials and equipment only. The submitted amount in the application for payment shall be reduced by the cost of transportation from the storage site to the project site and for the cost of an inspector to verify delivery and condition of the goods at the storage site. The cost of storage and inspection shall be borne solely by the Contractor.

(f) Within sixty (60) Days of the application for payment, the Contractor shall submit evidence of

payment covering the material and/or equipment stored and of payment for the storage site.

(g) Payment for stored materials and/or equipment shall in no way indicate acceptance of the materials and/or equipment or waive any rights under this Contract for the rejection of the Work or materials and/or equipment not in conformance with the Contract Documents.

(h) All required documentation shall be submitted with the respective application for payment.

E.2.4 The Owner reserves the right to withhold all or part of a payment, or may nullify in whole or part any payment previously made, to such extent as may be necessary in the Owner's opinion to protect the Owner from loss because of:

(a) Work that is defective and not remedied, or that has been demonstrated or identified as failing to conform with Applicable Laws or the Contract Documents,

(b) third party claims filed or evidence reasonably indicating that such claims will likely be filed unless security acceptable to the Owner is provided by the Contractor;

(c) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment (in which case Owner may issue checks made payable jointly to Contractor and such unpaid persons under this provision, or directly to Subcontractors and suppliers at any level under Section C.3.2.);

(d) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;

(e) ) damage to the Work, Owner or another contractor;

(f) reasonable evidence that the Work will not be completed within the Contract Time required by the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

(g) failure to carry out the Work in accordance with the Contract Documents; or

(h) assessment of liquidated damages, when withholding is made for offset purposes.

E.2.5 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

(a) Take that portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Price allocated to that portion of the Work in the Schedule of Values, less retainage as provided in Section E.5. Pending final determination of cost to the Owner of changes in the Work, no amounts for changes in the Work can be included in applications for payment until the Contract Price has been adjusted by an Amendment or Change Order;

- (b) Add that portion of the Contract Price 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 the Owner pursuant to Section E.2.3, suitably stored off the site at a location agreed upon in writing), less retainage as provided in Section E.5;
- (c) Subtract the aggregate of previous payments made by the Owner; and
- (d) Subtract any amounts for which the Owner has withheld or nullified payment as provided in the Contract Documents.

E.2.6 Contractor's applications for payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

E.2.7 The Contractor warrants to Owner that title to all Work covered by an application for payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment all Work for which payments are received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided financing, labor, materials and equipment relating to the Work.

E.2.8 If Contractor disputes any determination by Owner with regard to any application for payment, Contractor nevertheless shall continue to expeditiously perform the Work. No payment made hereunder shall be or be construed to be final acceptance or approval of that portion of the Work to which such partial payment relates or shall relieve Contractor of any of its obligations hereunder.

E.2.9 Contractor shall submit its initial MWESB Report within ten (10) Days of Contractor's execution of the Contract, or if there will be a Guaranteed Maximum Price (GMP) Amendment, then within ten (10) Days of Contractor's execution of the GMP Amendment. Contractor shall submit annual MWESB Reports on June 30 of each year the Contract is active. Contracts (or GMP Amendments) first executed by Contractor within ninety (90) Days before June 30 of the year of execution by Contractor may at the discretion of Owner be exempt from submitting the annual MWESB Report otherwise due on that June 30. The final MWESB Report shall be filed with the application for final payment. Timely receipt of MWESB Reports by Owner shall be a condition precedent to Owner's obligation to pay any progress payments or final payment otherwise due.

**E.3 PAYROLL CERTIFICATION REQUIREMENT**

Owner's receipt of payroll certification pursuant to Section C.2 of this Contract shall be a condition precedent to Owner's obligation to pay any progress payments or final payment otherwise due.

**E.4 DUAL PAYMENT SOURCES**

Contractor shall not be compensated for Work performed

under this Contract from any state agency other than the agency that is a party to this Contract.

**E.5 RETAINAGE**

E.5.1 Retainage shall be withheld and released in accordance with the requirements set forth in OSU Standard 580-063-0045.

E.5.1.1 Owner may reserve as retainage from any progress payment an amount not to exceed five percent of the payment. As Work progresses, Owner may reduce the amount of retainage on or may eliminate retainage on any remaining monthly Contract payments after 50 percent of the Work under the Contract is completed if, in the Owner's discretion, such Work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed at Owner's sole discretion and only upon written application by the Contractor, which application shall include written approval of Contractor's surety; except that when the Work is 97-1/2 percent completed the Owner may, at its discretion and without application by the Contractor, reduce the retained amount to 100 percent of the value of the Work remaining to be done. Upon receipt of written application by the Contractor, Owner shall respond in writing within a reasonable time.

E.5.1.2 Contractor may request in writing:

- (a) to be paid amounts which would otherwise have been retained from progress payments where Contractor has deposited acceptable bonds and securities of equal value with Owner or in a custodial account or other mutually-agreed account satisfactory to Owner, with an approved bank or trust company to be held in lieu of the cash retainage for the benefit of Owner;
- (b) for construction projects over \$1,000,000, that retainage be deposited in an interest bearing account, established through the State Treasurer for state agencies, in a bank, savings bank, trust company or savings association for the benefit of Owner, with earnings from such account accruing to the Contractor; or
- (c) that the Owner allow Contractor to deposit a surety bond for the benefit of Owner, in a form acceptable to Owner, in lieu of all or a portion of funds retained, or to be retained. Such bond and any proceeds therefrom shall be made subject to all claims in the manner and priority as set forth for retainage.

When the Owner has accepted the Contractor's election of option

- (a) or (b), Owner may recover from Contractor any additional costs incurred through such election by reducing Contractor's final payment. Where the Owner has agreed to Contractor's request for option (c), Contractor shall accept like bonds from Subcontractors and suppliers on the project from which Contractor has required retainages.

E. 5.1.3 The retainage held by Owner shall be included in and paid to the Contractor as part of the Final Payment of the Contract Price. The Owner shall pay to Contractor interest at the rate of two-thirds of one percent per month on the final payment due Contractor, interest to commence forty-five (45) Days after the date which Owner receives Contractor's final approved application

for payment and Work under the Contract has been completed and accepted and to run until the date when final payment is tendered to Contractor. The Contractor shall notify Owner in writing when the Contractor considers the Work complete and deliver to Owner its final application for payment and Owner shall, within fifteen (15) Days after receiving the written notice and the application for payment, either accept the Work or notify the Contractor of Work yet to be performed on the Contract. If Owner does not within the time allowed notify the Contractor of Work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run forty-five (45) Days after the end of the 15- Day period.

E.5.1.4 Owner will reduce the amount of the retainage if the Contractor notifies the controller of the Owner that the Contractor has deposited in an escrow account with a bank or trust company, in a manner authorized by the Owner, bonds and securities of equal value of a kind approved by the Owner and such bonds and securities have in fact been deposited.

E.5.1.5 Contractor agrees that if Contractor elects to reserve a retainage from any progress payment due to any Subcontractor or supplier, such retainage shall not exceed five percent of the payment, and such retainage withheld from Subcontractors and suppliers shall be subject to the same terms and conditions stated in Subsection E.5 as apply to Owner's retainage from any progress payment due to Contractor.

## **E.6 FINAL PAYMENT**

E.6.1 Upon completion of all the Work under this Contract, the Contractor shall notify the Owner, in writing, that Contractor has completed Contractor's obligations under the Contract and shall prepare its application requesting final payment. Upon receipt of such notice and application for payment, the Owner will inspect the Work, and, if acceptable, submit to the Owner a recommendation as to acceptance of the completed Work and the final estimate of the amount due the Contractor. If the Work is not acceptable, Owner will notify Contractor within fifteen (15) Days of Contractor's request for Final Payment. Upon approval of this final application for payment by the Owner and compliance by the Contractor with provisions in Section K, and Contractor's satisfaction of other provisions of the Contract Documents as may be applicable, the Owner shall pay to the Contractor all monies due under the provisions of these Contract Documents.

E.6.2 Neither Final Payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner (1) a certificate 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 thirty (30) Days' prior written notice has been given to the Owner, (2) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (3) consent of surety, if any, to Final Payment and (4), if required by the 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 the Owner. If a Subcontractor refuses to furnish a release or waiver

required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

E.6.3 Acceptance of Final Payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment.

E.6.4 Contractor agrees to submit its final payment application within ninety (90) Days after Substantial Completion, unless written extension is granted by Owner. Contractor shall not delay Final Payment application for any reason, including without limitation nonpayment of Subcontractors, suppliers, manufacturers or others not a party to this Contract, or lack of resolution of a dispute with Owner or any other person of matters arising out of or relating to the Contract. If Contractor fails to submit its Final Payment application within ninety (90) Days after Substantial Completion, and Contractor has not obtained written extension by Owner, all requests or Claims for additional costs or an extension of Contract Time shall be waived.

## **SECTION F JOB SITE CONDITIONS**

### **F.1 USE OF PREMISES**

Contractor shall confine equipment, storage of materials and operation of Work to the limits indicated by Contract Documents, Applicable Laws, permits or directions of the Owner. Contractor shall follow the Owner's instructions regarding use of premises, if any.

### **F.2 PROTECTION OF WORKERS, PROPERTY AND THE PUBLIC**

F.2.1 Contractor shall maintain continuous and adequate protection of all of the Work from damage and shall protect the Owner, workers and property from injury or loss arising in connection with this Contract. Contractor shall remedy acceptably to the Owner any damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by authorized representatives or personnel of the Owner. Contractor shall adequately protect adjacent property as provided by law and the Contract Documents.

F.2.2 Contractor shall take all necessary precautions for the safety of all personnel on the job site or otherwise engaged in the undertaking of the Work and shall comply with the Contract Documents, best practices and all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for protection of workers and the public against any hazards created by construction. Contractor shall designate a responsible employee or associate on the Work site, whose duty shall be the prevention of accidents. The name and position of the person designated shall be reported to the Owner. The Owner has no responsibility for Work site safety. Work site safety shall be the responsibility of the Contractor.

F.2.3 Contractor shall not enter upon private property without first obtaining permission from the property owner or its duly authorized representative. Contractor shall be responsible for the preservation of all public and private property along and adjacent to the Work contemplated under the Contract and shall use every precaution necessary to prevent damage thereto. In the event the Contractor damages any property, the Contractor shall at once notify the property owner and make, or arrange to make, full restitution. Contractor shall, immediately and in writing, report to the Owner, all pertinent facts relating to such property damage and the ultimate disposition of the claim for damage.

F.2.4 Contractor shall be responsible for protection of adjacent work areas including impacts brought about by activities, equipment, labor, utilities, vehicles and materials on the site.

F.2.5 Contractor shall at all times direct its activities in such a manner as to minimize adverse effects on the environment. Handling of all materials shall be conducted so no release will occur that may pollute or become hazardous.

F.2.6 In an emergency affecting the safety of life or limb or of the Work or of adjoining property, the Contractor, without special instruction or authorization from the Owner, shall act reasonably to prevent threatened loss or injury, and shall so act, without appeal, if instructed by the Owner. Any compensation claimed by the Contractor on account of emergency work shall be determined in accordance with section D.

### **F.3 CUTTING AND PATCHING**

F.3.1 Contractor shall be responsible for coordinating all cutting, fitting, or patching of the Work to make its several parts come together properly and fit to receive or be received by work of other contractors or Subcontractors shown upon, or reasonably implied by, the Contract Documents.

F.3.2 Contractor shall be responsible for restoring all cut, fitted, or patched surfaces to an original condition; provided, however, that if a different condition is specified in the Contract Documents, then Contractor shall be responsible for restoring such surfaces to the condition specified in the Contract Documents.

### **F.4 CLEANING UP**

From time to time as may be prudent or ordered by the Owner and, in any event, immediately after completion of the Work, the Contractor shall, at its own expense, clean up and remove all refuse and unused materials of any kind resulting from the Work. If Contractor fails to do so within twenty-four hours after notification by the Owner the work may be done by others and the cost charged to the Contractor and deducted from payment due the Contractor.

### **F.5 ENVIRONMENTAL CONTAMINATION**

F.5.1. Contractor shall be held responsible for and shall indemnify, defend (with counsel of Owner's choice), and hold harmless Owner from and against any costs, expenses, damages, claims, and causes of action, (including attorneys' fees), or any of them, resulting from

all spills, releases, discharges, leaks and disposal of environmental pollution, including storage, transportation, and handling during the performance of the Work or Contractor's obligations under the Contract which occur as a result of, or are contributed by, the negligence or actions of Contractor or its personnel, agents, or Subcontractors or any failure to perform in accordance with the Contract Documents (except to the extent otherwise void under ORS 30.140). Nothing in this section F.5.1 shall limit Contractor's responsibility for obtaining insurance coverages required under Section G.3 of this Contract, and Contractor shall take no action that would void or impair such coverages.

F.5.1.1 Contractor agrees to promptly dispose of such spills, releases, discharge or leaks to the satisfaction of Owner and regulatory agencies having jurisdiction in a manner that complies with Applicable Laws. Cleanup shall be at no cost to the Owner and shall be performed by properly qualified and, if applicable, licensed personnel.

F.5.1.2 Contractor shall obtain the Owner's written consent prior to bringing onto the Work site any (i) environmental pollutants or (ii) hazardous substances or materials, as the same or reasonably similar terms are used in any Applicable Laws. Notwithstanding such written consent from the Owner, the Contractor, at all times, shall:

- (a) properly handle, use and dispose of all environmental pollutants and hazardous substances or materials brought onto the Work site, in accordance with all Applicable Laws;
- (b) be responsible for any and all spills, releases, discharges, or leaks of (or from) environmental pollutants or hazardous substances or materials which Contractor has brought onto the Work site; and
- (c) promptly clean up and remediate, without cost to the Owner, such spills, releases, discharges, or leaks to the Owner's satisfaction and in compliance with all Applicable Laws.

F.5.2 Contractor shall report all reportable quantity releases, as such releases are defined in Applicable Laws, including but not limited to 40 CFR Part 302, Table 302.4 and in OAR 340-142- 0050, to applicable federal, state, and local regulatory and emergency response agencies. Upon discovery, regardless of quantity, Contractor must telephonically report all releases to the Owner. A written follow-up report shall be submitted to Owner within 48 hours of the telephonic report. Such written report shall contain, as a minimum:

- (a) Description of items released (identity, quantity, manifest numbers, and any and all other documentation required by law.)
- (b) Whether amount of items released is EPA/DEQ reportable, and, if so, when reported.
- (c) Exact time and location of release, including a description of the area involved.
- (d) Containment procedures initiated.
- (e) Summary of communications about the release between Contractor and members of the press or Stat, local or federal officials other than

Owner.

- (f) Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.
- (g) Personal injuries, if any, resulting from, or aggravated by, the release.

## **F.6 ENVIRONMENTAL CLEAN-UP**

- F.6.1 Unless disposition of environmental pollution is specifically a part of this Contract, or was caused by the Contractor (reference F.5 Environmental Contamination), Contractor shall immediately notify Owner of any hazardous substance(s) which Contractor discovers or encounters during performance of the Work required by this Contract. "Hazardous substance(s)" means any hazardous, toxic and radioactive materials and those substances defined as "hazardous substances," "hazardous materials," "hazardous wastes," "toxic substances," or other similar designations in any federal, state, or local law, regulation, or ordinance, including without limitation asbestos, polychlorinated biphenyl (PCB), or petroleum, and any substances, materials or wastes regulated by 40 CFR, Part 261 and defined as hazardous in 40 CFR S 261.3. In addition to notifying Owner of any hazardous substance(s) discovered or encountered, Contractor shall immediately cease working in any particular area of the project where a hazardous substance(s) has been discovered or encountered if continued work in such area would present a risk or danger to the health or well-being of Contractor's or any Subcontractor's work force, property or the environment.
- F.6.2 Upon being notified by Contractor of the presence of hazardous substance(s) on the project site, Owner shall arrange for the proper disposition of such hazardous substance(s).

## **F.7 FORCE MAJEURE**

A party to this Contract shall not be held responsible for delay or default due to Force Majeure acts, events or occurrences unless they could have been avoided by the exercise of reasonable care, prudence, foresight, and diligence by that party. The Owner may terminate this Contract upon written notice after determining that delay or default caused by Force Majeure acts, events or occurrences will reasonably prevent successful performance of the Contract.

## **SECTION G INDEMNITY, BONDING, AND INSURANCE**

### **G.1 RESPONSIBILITY FOR DAMAGES / INDEMNITY**

- G.1.1 Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay that may be caused by, or result from, the carrying out of the Work to be done under this Contract, or from any act, omission or neglect of the Contractor, its Subcontractors, sub-subcontractors of any tier, suppliers, employees, guests, visitors, invitees and agents.
- G.1.2 To the fullest extent permitted by law, Contractor shall indemnify, defend (with counsel approved by Owner) and hold harmless the Owner, Architect/Engineer, Architect/Engineer's consultants, and their respective

officers, directors, agents, employees, partners, members, stockholders and affiliated companies (collectively "Indemnitees") from and against all liabilities, damages, losses, claims, expenses (including reasonable attorney fees), demands and actions of any nature whatsoever which arise out of, result from or are related to, (a) any damage, injury, loss, expense, inconvenience or delay described in this Section G.1., (b) any accident or occurrence which happens or is alleged to have happened in or about the project site or any place where the Work is being performed, or in the vicinity of either, at any time prior to the time the Work is fully completed in all respects, (c) any failure of the Contractor or its Subcontractors, sub-subcontractors of any tier, suppliers, employees, or consultants to observe or perform any duty or obligation under the Contract Documents which is to be observed or performed by the Contractor, or any breach of any agreement, representation or warranty of the Contractor contained in the Contract Documents or in any subcontract, (d) the negligent acts or omissions of the Contractor, a Subcontractor, sub-subcontractor of any tier, a supplier, a consultant, or anyone directly or indirectly employed by them or any one of them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder (except to the extent otherwise void under ORS 30.140), and (e) any lien filed upon the project or bond claim in connection with the Work. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section G.1.2.

- G.1.3 In claims against any person or entity indemnified under Section G.1.2 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section G.1.2 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

### **G.2 PERFORMANCE AND PAYMENT SECURITY; PUBLIC WORKS BOND**

- G.2.1 When the Contract Price is \$100,000 or more (or \$50,000 or more in the case of Contracts for highways, bridges and other transportation projects), the Contractor shall furnish and maintain in effect at all times during the Contract Period a performance bond in a sum equal to the Contract Price and a separate payment bond also in a sum equal to the Contract Price. Contractor shall furnish such bonds even if the Contract Price is less than the above thresholds if otherwise required by the Contract Documents.
- G.2.2 Bond forms furnished by the Owner and notarized by awarded Contractor's surety company authorized to do business in Oregon are the only acceptable forms of performance and payment security, unless otherwise specified in the Contract Documents.
- G.2.3 Before execution of the Contract the Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by Oregon Laws 2015, Chapter 279C, and OAR 839-025-0015, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the

Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting any Subcontractor to start Work.

### **G.3 INSURANCE**

G.3.1 Primary Coverage: Insurance carried by Contractor and Subcontractors under this Contract shall be the primary coverage. The coverages indicated are minimums unless otherwise specified in the Contract Documents.

G.3.2 Workers' Compensation: All employers, including Contractor, that employ subject workers who work under this Contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. This shall include Employer's Liability Insurance with coverage limits of not less than the minimum amount required by statute for each accident. Contractors who perform the Work without the assistance or labor of any employee need not obtain such coverage if the Contractor certifies so in writing. Contractor shall ensure that each of its Subcontractors complies with these requirements. The Contractor shall require proof of such Workers' Compensation coverage by receiving and keeping on file a certificate of insurance from each Subcontractor or anyone else directly employed by either the Contractor or its Subcontractors.

G.3.3 Builder's Risk Insurance:

G.3.3.1 Builder's Risk: During the term of this Contract, for new construction the Contractor shall obtain and keep in effect Builder's Risk insurance on an all risk forms, including earthquake and flood, for an amount equal to the full amount of the Contract, plus any changes in values due to modifications, Change Orders and loss of materials added. Such Builder's Risk shall include, in addition to earthquake and flood, theft, vandalism, mischief, collapse, transit, debris removal, and architect's fees "soft costs" associated with delay of project due to insured peril. Any deductible shall not exceed \$50,000 for each loss, except the earthquake and flood deductible which shall not exceed 2 percent of each loss or \$50,000, whichever is greater. The deductible shall be paid by Contractor if Contractor or its Subcontractors are negligent. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear.

G.3.3.2 Builder's Risk Installation Floater: For Work other than new construction, Contractor shall obtain and keep in effect during the term of this Contract, a Builder's Risk Installation Floater for coverage of the Contractor's labor, materials and equipment to be used for completion of the Work performed under this Contract. The minimum amount of coverage to be carried shall be equal to the full amount of the Contract. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear. Owner may waive this requirement at their sole and absolute discretion.

G.3.3.3 Such insurance shall be maintained until Owner has occupied the facility.

G.3.3.4 Loss insured under the Builder's Risk insurance shall be adjusted by the Owner and made payable to the

Owner as loss payee. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and

by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their sub-subcontractors of any tier in similar manner. The Owner shall have power to adjust and settle a loss with insurers.

G.3.4 General Liability Insurance:

G.3.4.1 Commercial General Liability: Upon issuance of a Contract, Contractor shall obtain, and keep in effect at Contractor's expense for the term of the Contract, Commercial General Liability Insurance covering bodily injury and property damage in the amount of \$1,000,000 per claim and \$2,000,000 per occurrence in a form satisfactory to Owner. This insurance shall include personal injury liability, products and completed operations, no subcontractors' limitations, and blanket contractual liability coverage for the indemnities provided under this Contract (to the extent contractual liability coverage for the indemnity is available in the marketplace), and shall be issued on an occurrence basis.

G.3.4.2 Automobile Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Automobile Liability Insurance covering owned, and/or hired vehicles, as applicable. The coverage may be written in combination with the Commercial General Liability Insurance. Contractor shall provide proof of insurance of not less than \$1,000,000 per claim and \$2,000,000 per occurrence. Contractor and its Subcontractors shall be responsible for ensuring that all non-owned vehicles maintain adequate Automobile Liability insurance while on site.

G.3.4.3 Owner may adjust the insurance amounts required in Section G.3.4.1 and G.3.4.2 based upon institution specific risk assessments through the issuance of Supplemental General Conditions and a Contract.

G.3.4.4 "Tail" Coverage: If any of the required liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of this Contract for a duration of 36 months or the maximum time period available in the marketplace if less than 36 months. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for 36 months following Final Completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Contract. Owner's receipt of the policy endorsement evidencing such coverage shall be a condition precedent to Owner's obligation to make final payment and to Owner's final acceptance of Work or services and related warranty (if any).

G.3.4.5: Umbrella Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Umbrella liability Insurance over and above the general liability, automobile liability and workers' compensation coverage if required by Owner in specified limits at time of requirement.

G.3.4.6 Pollution Liability (if required by Owner through issuance of Supplemental General Conditions): Contractor shall obtain, at Contractor's expense, and

keep in effect during the term of this Contract, Pollution liability Insurance in minimum amounts of \$3,000,000 naming Owner as "additional insured," as noted in the "additional insured section below.

- G.3.5 Additional Insured: The general liability insurance coverage, professional liability, umbrella, and pollution liability if required, shall include the Owner as additional insureds but only with respect to the Contractor's activities to be performed under this Contract, and shall include completed operations coverage.

If Contractor cannot obtain an insurer to name the Owner as additional insureds, Contractor shall obtain at Contractor's expense, and keep in effect during the term of this Contract, Owners and Contractors Protective Liability Insurance, naming the Owner as additional insureds with not less than a \$2,000,000 limit per occurrence. This policy must be kept in effect for at least 36 months following Final Completion. As evidence of coverage, Contractor shall furnish the actual policy to Owner prior to execution of the Contract.

- G.3.6 Notice of Cancellation or Change: If the Contractor receives a non-renewal or cancellation notice from an insurance carrier affording coverage required herein, or receives notice that coverage no longer complies with the insurance requirements herein, Contractor agrees to notify Owner by fax within five (5) business days with a copy of the non-renewal or cancellation notice, or written specifics as to which coverage is no longer in compliance. When notified by Owner, the Contractor agrees to stop Work pursuant to this Contract, unless all required insurance remain in effect. Any failure to comply with the reporting provisions of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverages provided to the Owner and its institutions, divisions, officers, and employees.

Owner shall have the right, but not the obligation, of prohibiting Contractor from entering the Work site until a new certificate(s) of insurance is provided to Owner evidencing the replacement coverage. The Contractor agrees Owner reserves the right to withhold payment to Contractor until evidence of reinstated or replacement coverage is provided to Owner.

- G.3.7 Certificate(s) of Insurance: As evidence of the insurance coverage required by this Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to execution of the Contract. The certificate(s) will specify all of the parties who are additional insureds or loss payees for this contract. Insurance coverage required under this Contract shall be obtained from insurance companies or entities acceptable to the Owner and that are eligible to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to conduct an insurance business and issue policies of insurance in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and which are subject to approval by the Owner. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self-insurance included

hereunder. Any deductible, self-insured retention and/or self-insurance in excess of \$50,000 shall be subject to approval by the Owner in writing and shall be a condition precedent to the effectiveness of any Contract. The Owner has the right to require the Contractor at any time during the performance of the Work to furnish to Owner copies of the Contractor's actual policies.

## **SECTION H SCHEDULE OF WORK**

### **H.1 CONTRACT PERIOD**

- H.1.1 Time is of the essence. The Contractor shall at all times carry on the Work diligently, without delay and punctually fulfill all requirements herein. If required by the Contract Documents, Contractor shall commence Work on the site within fifteen (15) Days of Notice to Proceed, unless directed otherwise.
- H.1.2 Unless specifically extended by an Amendment or Change Order, all Work shall be complete by the date contained in the Contract Documents. The Owner shall have the right to accelerate the completion date of the Work, which may require the use of overtime. Such accelerated Work schedule shall be an acceleration in performance of Work under Section D.1.2 (f) and shall be subject to the provisions of Section D.1.
- H.1.3 The Owner shall not waive any rights under the Contract by permitting the Contractor to continue or complete in whole or in part the Work after the date described in Section H.1.2 above.

### **H.2 SCHEDULE**

- H.2.1 Contractor shall provide, by or before the pre-construction conference, the initial as-planned Construction Schedule for review and acceptance by the Owner. The submitted Construction Schedule must illustrate Work by project components, labor trades, and long lead items broken down by building and/or floor where applicable. If Owner shall so elect, Contractor shall provide the Construction Schedule in CPM format showing the graphical network of planned activities, including i) a reasonably detailed list of all activities required to complete the Work; ii) the time and duration that each activity will take to completion; and iii) the dependencies between the activities. Construction Schedules lacking adequate detail, or unreasonably detailed, will be rejected. The Construction Schedule shall include the following: Notice to Proceed or the date the Work commences, if no Notice to Proceed is issued by Owner, Substantial Completion, and Final Completion. Construction Schedules shall be updated monthly, unless otherwise required by the Contract Documents, and submitted with the monthly application for payment. Acceptance of the Construction Schedule by the Owner does not constitute agreement by the Owner as to the Contractor's sequencing, means, methods, or durations. Any positive difference between the Contractor's scheduled completion and the Contract completion date is float owned by the Owner. Owner reserves the right to negotiate the float if it is deemed to be in Owner's best interest to do so. In no case shall the Contractor make a claim for delays if the Work is completed within the Contract Time but after Contractor's scheduled completion.

### **H.3 PARTIAL OCCUPANCY OR USE**

H.3.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage, provided such occupancy or use is consented to by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have reasonably accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, insurance or self-insurance, maintenance, heat, utilities, and damage to the Work, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents with respect to such portion of the Work. Approval by the Contractor to partial occupancy or use shall not be unreasonably withheld. Immediately prior to such partial occupancy or use, the Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

## **SECTION I CORRECTION OF WORK**

### **I.1 CORRECTION OF WORK BEFORE FINAL PAYMENT**

The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. Work failing to conform to these requirements shall be deemed defective. Contractor shall promptly remove from the premises and replace all defective materials and equipment as determined by the Owner, whether incorporated in the Work or not. Removal and replacement shall be without loss or expense to the Owner, and Contractor shall bear the cost of repairing all Work destroyed or damaged by such removal or replacement. Contractor shall be allowed a period of no longer than thirty (30) Days after Substantial Completion for completion of defective (Punch List) work. At the end of the thirty-day period, or earlier if requested by the Contractor, Owner shall arrange for inspection of the Work by the Architect/Engineer. Should the work not be complete, and all corrections made, the costs for all subsequent re-inspections shall be borne by the Contractor. If Contractor fails to complete the Punch List work within the thirty (30) Day period, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand without affecting Contractor's obligations.

### **I.2 WARRANTY WORK**

I.2.1 Neither the final certificate of payment nor any provision of the Contract Documents shall relieve the Contractor from responsibility for defective Work and, unless a longer period is specified, Contractor shall correct all defects that appear in the Work within a period of one year from the date of issuance of the written notice of Substantial Completion by the Owner except for latent defects which will be remedied by the Contractor at any time they become apparent. The Owner shall give Contractor notice of defects with reasonable promptness. The Contractor shall perform the warranty Work by correcting defects within twenty-four (24) hours of

notification by Owner, unless otherwise specified in the Contract Documents. Should the Contractor fail to respond within the specified response time, the Owner may, at its option, complete the necessary repairs using another contractor or its own forces. If Owner completes the repairs using Owner's own forces, Contractor shall pay Owner at the rate of one and one-half (1½) times the standard hourly rate of Owner's forces, plus related overhead and any direct non-salary costs. If Owner completes the repairs using another contractor, Contractor shall pay Owner the amount of Owner's direct costs billed by the other contractor for the work, plus the direct salary costs and related overhead and direct non-salary expenses of Owner's forces who are required to monitor that contractor's work. Work performed by Owner using Owner's own forces or those of another contractor shall not affect the Contractor's contractual duties under these provisions, including warranty provisions. In the event of warranty work consisting of emergency repairs, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand, without affecting Contractor's obligations.

I.2.2 Nothing in this Section I.2 provision shall negate guarantees or warranties for periods longer than one year including without limitation such guarantees or warranties required by other sections of the Contract Documents for specific installations, materials, processes, equipment or fixtures.

I.2.3 In addition to Contractor's warranty, manufacturer's warranties shall pass to the Owner and shall not take effect until such portion of the Work covered by the applicable warranty has been accepted in writing by the Owner.

I.2.4 The one-year period for correction of Work shall be extended with respect to portions of Work performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work, and shall be extended by corrective Work performed by the Contractor pursuant to this Section, as to the Work corrected. The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

I.2.5 Nothing contained in this Section I.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the period for correction of Work as described in this Section I.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

I.2.6 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Price will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

**SECTION J**  
**SUSPENSION AND/OR TERMINATION OF THE**  
**WORK**

**J.1 OWNER'S RIGHT TO SUSPEND THE WORK**

J.1.1 The Owner has the authority to suspend portions or all of the Work due to the following causes:

- (a) Failure of the Contractor to correct unsafe conditions;
- (b) Failure of the Contractor to carry out any provision of the Contract;
- (c) Failure of the Contractor to carry out orders;
- (d) Conditions, in the opinion of the Owner, which are unsuitable for performing the Work;
- (e) Time required to investigate differing site conditions;
- (f) Any reason considered to be in the public interest.

J.1.2 The Owner shall notify Contractor and the Contractor's Surety in writing of the effective date and time of the suspension, and Owner shall notify Contractor and Contractor's surety in writing to resume Work.

**J.2 CONTRACTOR'S RESPONSIBILITIES**

J.2.1 During the period of the suspension, Contractor is responsible to continue maintenance at the project just as if the Work were in progress. This includes, but is not limited to, protection of completed Work, maintenance of access, protection of stored materials, temporary facilities, and clean-up.

J.2.2 When the Work is recommenced after the suspension, the Contractor shall replace or renew any Work damaged during the suspension, remove any materials or facilities used as part of temporary maintenance, and complete the project in every respect as though its prosecution had been continuous and without suspension.

**J.2.3 COMPENSATION FOR SUSPENSION**

**J.2.4**

J.2.1 Depending on the reason for suspension of the Work, the Contractor or the Owner may be due compensation by the other party. If the suspension was required due to acts or omissions of Contractor, the Owner may assess the Contractor actual costs of the suspension in terms of administration, remedial work by the Owner's forces or another contractor to correct the problem associated with the suspension, rent of temporary facilities, and other actual costs related to the suspension. If the suspension was caused by acts or omissions of the Owner, the Contractor may be due compensation which shall be defined using Section D, Changes in Work. If the suspension was required through no fault of the Contractor or the Owner, neither party shall owe the other for the impact.

**J.4 OWNER'S RIGHT TO TERMINATE CONTRACT**

J.4.1 The Owner may, without prejudice to any other right or

remedy, and after giving Contractor seven (7) Days' written notice and an opportunity to cure, terminate the Contract in whole or in part under the following conditions:

- (a) If Contractor should, voluntarily or involuntarily, seek protection under the United States Bankruptcy Code and Contractor as debtor-in-possession or the Trustee for the estate fails to assume the Contract within a reasonable time;
- (b) If Contractor should make a general assignment for the benefit of Contractor's creditors;
- (c) If a receiver should be appointed on account of Contractor's insolvency;
- (d) If Contractor should repeatedly refuse or fail to supply an adequate number of skilled workers or proper materials to carry on the Work as required by the Contract Documents, or otherwise fail to perform the Work in a timely manner;
- (e) If Contractor should repeatedly fail to make prompt payment to Subcontractors or for material or labor, or should disregard laws, ordinances or the instructions of the Owner; or
- (f) If Contractor is otherwise in breach of any part of the Contract.
- (g) If Contractor is in violation of Applicable Laws, either in the conduct of its business or in its performance of the Work.

J.4.2 At any time that any of the above occurs, Owner may exercise all rights and remedies available to Owner at law or in equity, and, in addition, Owner may take possession of the premises and of all materials and appliances and finish the Work by whatever method it may deem expedient. In such case, the Contractor shall not be entitled to receive further payment until the Work is completed. If the Owner's cost of finishing the Work exceeds the unpaid balance of the Contract Price, Contractor shall pay the difference to the Owner.

**J.5 TERMINATION FOR CONVENIENCE**

J.5.1 Owner may terminate the Contract in whole or in part whenever Owner determines that termination of the Contract is in the best interest of Owner or the public.

The Owner shall provide the Contractor with seven (7) Days prior written notice of a termination for Owner's or for public convenience. After such notice, the Contractor shall provide the Owner with immediate and peaceful possession of the premises and materials located on and off the premises for which the Contractor received progress payment under Section E. Compensation for Work terminated by the Owner under this provision will be according to Section E. In no circumstance shall Contractor be entitled to lost profits for Work not performed due to termination.

**J.6 ACTION UPON TERMINATION**

J.6.1 Upon receiving a notice of termination, and except as directed otherwise by the Owner, Contractor shall immediately cease placing further subcontracts or orders for materials, services, or facilities. In addition, Contractor shall terminate all subcontracts or orders to the extent they

relate to the Work terminated and, with the prior written approval of the Owner, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts and orders.

J.6.2 As directed by the Owner, Contractor shall, upon termination, transfer title and deliver to the Owner all Record Documents, information, and other property that, if the Contract had been completed, would have been required to be furnished to the Owner.

I.6.3 Upon Owner's notice of termination pursuant to either Section

J.4 or J.5, if Owner shall so elect, Contractor shall assign the Owner such subcontracts and orders as Owner shall specify. In the event Owner elects to take assignment of any such subcontract or order, Contractor shall take such action and shall execute such documents as Owner shall reasonably require for the effectiveness of such assignment and Contractor shall ensure that no contractual arrangement between it and its subcontractors or suppliers of any tier or sub-tier shall prevent such assignment.

## **SECTION K CONTRACT CLOSE OUT**

### **K.1 RECORD DOCUMENTS**

As a condition of final payment (refer also to section E.6), Contractor shall comply with the following: Contractor shall provide Record Documents for the entire project to Owner. Record Documents shall depict the project as constructed and shall reflect each and every change, modification, and deletion made during the construction. Record Documents are part of the Work and shall be provided prior to the Owner's issuance of final payment. Record Documents include all modifications to the Contract Documents unless otherwise directed, and accurate MWESB Reports.

### **K.2 OPERATION AND MAINTENANCE MANUALS**

As part of the Work, Contractor shall submit two completed operation and maintenance manuals ("O & M Manuals") for review by the Owner prior to submission of any pay request for more than 75% of the Work. Owner's receipt of the O & M Manuals shall be a condition precedent to any payment thereafter due. The O & M Manuals shall contain a complete set of all Submittals, all product data as required by the specifications, training information, telephone list and contact information for all consultants, manufacturers, installer and suppliers, manufacturer's printed data, record and shop drawings, schematic diagrams of systems, appropriate equipment indices, warranties and bonds. The Owner shall review and return one O & M Manual for any modifications or adjustments required. Prior to submission of its final pay request, Contractor shall deliver two (2) complete and approved sets of O & M Manuals in paper form and one (1) complete and approved set in electronic form to the Owner and Owner's receipt of the O & M Manuals shall be a condition precedent to Owner's obligation to make final payment.

### **K.3 COMPLETION NOTICES**

K.3.1 Contractor shall provide Owner written notice of both Substantial and Final Completion. The certificate of Substantial Completion shall state the date of Substantial Completion, the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and the time within which the Contractor shall finish all items on the Punch List accompanying the Certificate. Both completion notices

must be signed by the Contractor and the Owner to be valid. The Owner shall provide the final signature on the notices. The notices shall take effect on the date they are signed by the Owner.

K.3.2 Substantial Completion of a facility with operating systems (e.g., mechanical, electrical, HVAC) shall be that degree of completion that has provided a minimum of thirty (30) continuous Days of successful, trouble-free operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the Owner. All equipment contained in the Work, plus all other components necessary to enable the Owner to operate the facility in the manner that was intended, shall be complete on the Substantial Completion date. The Contractor may request that a Punch List be prepared by the Owner with submission of the request for the Substantial Completion notice.

### **K.4 TRAINING**

As part of the Work, and prior to submission of the final application for payment, the Contractor shall schedule with the Owner training sessions for all equipment and systems as required by the Contract Documents. Contractor shall schedule training sessions at least two weeks in advance of the date of training to allow Owner to provide its personnel with adequate notice. The O & M Manual shall be used as a basis for training. In addition to any off-site training required by the Contract Documents, training shall include a formal session conducted at the Work site after the equipment and/or system is completely installed and operational in its normal operating environment.

### **K.5 EXTRA MATERIALS**

As part of the Work, Contractor shall provide spare parts, extra maintenance materials, and other materials or products in the quantities specified in the Contract Documents prior to final payment. Delivery point for extra materials shall be designated by the Owner.

### **K.6 ENVIRONMENTAL CLEAN-UP**

As part of the Final Completion notice, or as a separate written notice submitted with or before the notice of Final Completion, the Contractor shall notify the Owner that all environmental and pollution clean-up, remediation and closure have been completed in accordance with all Applicable Laws and pursuant to the authority of all agencies having jurisdiction, and Contractor shall provide Owner with any and all documentation related to the same, including but not limited to directives, orders, letters, certificates and permits related to or arising from such environmental pollution. The notice shall reaffirm the indemnification given under Section F.5.1 above. Contractor's completion of its obligations under this Section K.6 and Owner's receipt of documents evidencing such completion shall be a condition precedent to Owner's obligation to make final payment.

### **K.7 CERTIFICATE OF OCCUPANCY**

Owner's receipt of an unconditioned certificate of occupancy from the appropriate state and/or local building officials shall be a condition precedent to Owner's obligation to make final payment, except to the extent failure to obtain an unconditional certificate of occupancy is due to the sole fault or neglect of Owner.

### **K.8 OTHER CONTRACTOR RESPONSIBILITIES**

The Contractor shall be responsible for returning to the

Owner all property of Owner issued to Contractor during construction such as keys, security passes, site admittance badges, and all other pertinent items. Upon notice from Owner, Contractor shall be responsible for notifying the appropriate utility companies to transfer utility charges from the Contractor to the Owner. The utility transfer date shall not be before Substantial Completion and may not be until Final Completion, if the Owner does not take beneficial use of the facility and the Contractor's forces continue with the Work.

**K.9 SURVIVAL**

All warranty and indemnification provisions of this Contract, and all of Contractor's other obligations under this Contract that are not fully performed by the time of Final Completion or termination, shall survive Final Completion or any termination of the Contract.

# OREGON STATE UNIVERSITY

## SUPPLEMENTAL GENERAL CONDITIONS

To The

### PUBLIC IMPROVEMENT GENERAL CONDITIONS

Project Name PHARMACY CHILLER REPLACEMENT REBID

**The following modify the June 30, 2017 Oregon State University General Conditions (“OSU Public Improvement General Conditions”) for this Contract. Where a portion of the OSU General Conditions is modified by these Supplemental General Conditions, the unaltered portions shall remain in effect.**

SG-1 Section B.4 is modified as follows: Revise to read:

“Contractor shall obtain and pay for all necessary permits and licenses, except for those specifically excluded in the Supplemental General Conditions, for the construction of the Work, for temporary obstructions, enclosures, opening of streets for pipes, walls, utilities, environmental Work, etc., as required for the project. Owner shall obtain and pay for the general building permit and pay for any specialty permits required for the Work. Contractor shall be responsible for all violations of the law, in connection with the construction or caused by obstructing streets, sidewalks or otherwise. Contractor shall give all requisite notices to public authorities. The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent or other proprietary rights and save harmless and blameless from loss, on account thereof, Oregon State University, and its departments, divisions, members and employees.

SG-2 Section F.2.4 is modified as follows: Add the following:

“Contractor shall verify that all mechanical or electrical equipment in the construction areas that may be affected by the Work is in working order and shall notify the Owner, in writing, of any equipment not in working order prior to the start of the Work. Start of Work will be considered as acknowledgement that all equipment is in good working order. Contractor shall be required to restore equipment to its original, or better, condition upon completion of the Project.”

SG-3 Section H.2.1 is replaced with the following:

"Contractor shall provide, by or before the pre-construction conference, a detailed Construction Schedule for review and acceptance by the Owner. The submitted Construction Schedule must illustrate Work by significant project components, significant labor trades, long lead items, broken down by building and/or floor where applicable. Each Construction Schedule item shall account for no greater than 5% of the monetary value of the Project or 5% of the available time. Schedules with activities of less than one day or valued at less than 1% of the Contract shall be considered too detailed and shall not be accepted. Schedules lacking adequate detail, or unreasonably detailed, shall be rejected. Included within the Construction Schedule are the following: Notice to Proceed, Substantial Completion, and Final Completion. Contractor shall provide an updated, full project schedule with each payment request. In addition, twice monthly, the Contractor shall provide an updated three-week forward-looking Construction Schedule. Acceptance of the Schedule by the Owner does not constitute agreement by the Owner as to the Contractor's sequencing, means, methods, or durations. Any positive difference between the Contractor's scheduled completion and the contract completion date is float owned by the Project. Use of the float shall be negotiated. In no case shall the Contractor make a claim for delays if the Work is completed within the Contract time but after Contractor's scheduled completion."

As indicated in the General Conditions of your contract(s) Section E.2.9, OSU requires that we gather MWESB (Minority, Women's Emerging Small Business) Contractor/Subcontractor information. This is an Oregon State University requirement and the information will be gathered annually and at time of final payment.

- **You must do this step first or the report will not let you add any information:** In Row 1 Column B there is a drop down menu. You must select yearend (if the job has not been completed) or final (if the job is completed and you have submitted for retention). Once you choose yearend or final in the drop down menu there will be areas highlighted in light green and red. Those are the areas that you are required to fill out. If you did not use or planning to use any MWESB then the left side of the report (Light Green area) still needs to be filled out and the red area needs to remain blank.
- If your agency is an MWESB or if you are using/used an MWESB subcontractor then you need to fill out the information in the report that is highlighted in light green and red (see instructions in the next bullet). If you are not an MWESB or used a Subcontractor that is an MWESB then you need to fill out the left side of the form (Light Green areas) and leave the red area blank.
- In row 2 Column B there is another drop down menu, click the drop down menu and choose Fiscal Year 2015.
- In Row 4 Column B there is another drop down menu, click there and choose OSU.



In compliance with Oregon Prevailing Wage Law, the following is incorporated into this Invitation to Bid:

The Contractor and all subcontractors shall comply with the provisions of ORS 279C.800 through 279C.870, relative to Prevailing Wage Rates as outlined in Sections C.1 and C.2 of the General Conditions. This ITB and the resulting Contract are subject to the following BOLI wage rate requirements, which are incorporated herein by reference:

- October 1, 2018 PWR Apprenticeship Rates
- October 1, 2018 PWR Amendments
- July 1, 2018 Prevailing Wage Rates for Public Works Contracts in Oregon
- July 1, 2018 Definitions of Covered Occupations for Public Works Contracts in Oregon

These BOLI wage rates are available on line at:  
**[http://www.boli.state.or.us/BOLI/WHD/PWR/pwr\\_state.shtml](http://www.boli.state.or.us/BOLI/WHD/PWR/pwr_state.shtml)**

## SECTION 01 11 00

### SUMMARY OF WORK

#### PART 1 GENERAL

##### 1.01 SUMMARY OF WORK

- A. The Work Contract consists of the removal and replacement of the building chiller unit, two (2) pumps and refrigerant coil in room 509 of the Pharmacy Building located at 1601 SW Jefferson Ave. on the Oregon State University Campus, Corvallis, Oregon. Work shall include all electrical connections and upgrades required for the new chiller. The work must comply with the most current edition of the OSU Construction Standards. OSU Construction Standards are located at <http://fa.oregonstate.edu/cpd-standards> and are herein incorporated by this reference.
- B. Work shall be started in December 2018, immediately after signing of Contract on behalf of Oregon State University. The Contract may not be signed prior to approval of the Contractor's Certificate of Insurance by Construction Contract Administration (CCA), Oregon State University. Work shall be completed on or before June 30, 2018.

##### 1.02 CONTRACTORS USE OF PREMISES

- A. Contractor shall limit use of the Premises for work and storage to allow for:
1. Owner occupancy, day and night.
  2. Public use, day and night.
  3. Security.
  4. Safe entry and exit for vehicles and pedestrians.
  5. Fire egress.
- B. Coordinate all operations with the Owner's Authorized Representative during the construction period. A 96-hour notification is required prior to scheduled utility shutdowns or street closures, but more lead time is often required to schedule around other critical activities.
- C. Limit Contractor's employee parking to locations designated at the Pre-construction Conference.

##### 1.03 OWNER OCCUPANCY

- A. The Owner will occupy the Premises during the entire period of construction for the conduct of normal operations. Cooperate with Owner's Authorized Representative in construction operations to minimize conflict and to facilitate the Owner's usage especially in the following areas:
1. Restricted access and parking.
  2. Use of stairs.
  3. Storage space availability.
- B. Conduct operations in such a way to ensure the least inconvenience to the

general public, including:

1. Limitations and easements.
2. Emergency vehicle access.
3. Building access to the public, day and night.

#### **1.04 ASBESTOS AND OTHER HAZARDOUS MATERIAL**

- A. The Owner has made a reasonable attempt to locate and identify asbestos or other hazardous material that may be encountered during the course of the Work.
- B. If the Contractor observes or suspects the existence of asbestos, polychlorinated biphenyl (PCB) or other hazardous materials in the structure or components of the building, the Contractor shall immediately stop work and notify the Owner's Authorized Representative.
- C. The Owner will arrange for the removal of asbestos, polychlorinated biphenyl (PCB) or other hazardous materials as required by Facilities Services personnel or by separate contract.
- D. Schedule ten (10) days of slack or "down" time for the removal of hazardous materials without penalty to Owner for the delay of the Contract.

#### **1.05 LEAD BASED PAINT**

- A. The Owner may have tested existing paint in the project area and if levels are found the following conditions apply.
- B. Contractor shall remove paint as specified for surface preparation and capture removed material for disposal.
- C. Contractor shall follow OSHA guidelines involving exposure to workers.
- D. Owner will provide containers for Contractor's use at project site.
- E. Contractor shall comply with the requirements of DEQ and EPA and shall submit a lead abatement plan.
- F. Contractor shall separate lead contaminated material from effluent and water.
- G. Owner will dispose of lead paint and effluent resulting from stripping operation.
- H. Soil contaminated by stripping operations shall be replaced with topsoil.

**END OF SECTION**

## **SECTION 01 24 76**

### **APPLICATIONS FOR PAYMENT**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Work of this Section includes forms and procedures for progress payments.
- B. Related work specified elsewhere.
  - 1. For the primary discussion of payments, refer to OSU General Conditions, Section E, as supplemented.
  - 2. In compliance with OSU General Conditions, Section K, no payments beyond 75% will be made by the Owner before two complete copies of the draft Operation and Maintenance Manuals have been received for review by the Owner.

##### **1.02 APPLICATION FORMS**

- A. For applications for payment, use sample contract payment request on company letterhead, or AIA Document G702, supported by AIA Document G703, Continuation Sheet, or similar document.
- B. Prepare the Schedule of Values in such a manner that each major item of Work and each subcontracted item of Work is shown as a line item broken down in terms of material and labor costs on AIA Document G703, Application Certification of Payment, Continuation Sheet or similar format. The sample continuation sheet shall be the minimum Schedule of Values breakdown.
- C. The Schedule of Values shall be submitted for review by the Owner prior to the first application for payment; and may be used when, and only when, accepted in writing by the Owner.
- D. Payment request is to include the Contractor's Federal Tax Identification number and return address.

##### **1.03 PAYMENTS**

- A. The Owner will make progress payments on account of the Contract once monthly for the scheduled duration of the project (i.e. three (3) payments on a three-month project), based on the value of work accomplished or materials on the job site, as stated in the Schedule of Values on the Application and Certificate Payment.
- B. Notwithstanding the foregoing, as this project is scheduled to take six (6) months to complete, Owner will only make six (6) payments, plus a final retainage payment, as applicable.
- C. Complete and forward Application to the Owner on or about the 15th day of each month for work performed the previous month and include certified payroll statements as specified in the OSU General Conditions.

- D. Submit one (1) copy of forms requesting payment to the Owner.
- E. Payments will be made on protected materials on hand at the job site properly stored, protected, and insured.
- F. Estimated quantities shall be subject to the Owner's review and judgment.

**1.04 EARLY PURCHASE AND PAYMENT OF MATERIALS AND EQUIPMENT**

- A. Order materials and equipment requiring a long lead or waiting time early so as not to delay progress of the Work.
- B. The Contractor will be reimbursed for early order materials or equipment upon receipt and verification of quality and quantity against submittals and shipping documents by the Owner's Authorized Representative.
- C. Receipt shall be to the job site or stored at Owner's other premises in an orderly and safe manner, secured from normal weather damage.
- D. Security remains the responsibility of the Contractor.

**END OF SECTION**

**CONTRACT PAYMENT REQUEST**

**DATE:** \_\_\_\_\_

TO: Administrative Services Accounting  
Oregon State University  
3015 SW Western Blvd  
Corvallis, OR 97333

Payment Request No. \_\_\_\_\_ Contract No. \_\_\_\_\_ Period from \_\_\_\_\_ to \_\_\_\_\_

Project: \_\_\_\_\_

Original Contract Amount..... \$ \_\_\_\_\_

Change Orders (Net Amount) ..... \$ \_\_\_\_\_

Contract Total to Date ..... \$ \_\_\_\_\_

=====

Total Completed and Stored to Date ..... \$ \_\_\_\_\_

Less Retainage (5%), if applicable ..... \$ \_\_\_\_\_

Total Earned, Less Retainage (if applicable)..... \$ \_\_\_\_\_

Less Previous Payments ..... \$ \_\_\_\_\_

**Net Amount Due this Request** ..... \$ \_\_\_\_\_

The undersigned Contractor certifies that, to the best of his/her knowledge, information, and belief, the Work covered by this request has been completed in accordance with the Contract Documents, that all amounts have been paid for Work for which previous applications for Payment were issued and payments received from the Owner, and that the amount shown herein is now due.

Contractor: \_\_\_\_\_

By: \_\_\_\_\_ Date: \_\_\_\_\_

Federal Tax ID Number: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

## CONTINUATION SHEET

**NOTES:**

Amounts are stated to the nearest penny.  
 Use Column I on Contracts where variable retainage for line items may apply,  
 or if retainage is required.

Change Orders are usually listed as the last items of the basic schedule.

**Project Name:** \_\_\_\_\_

**Application No.:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Period To:** \_\_\_\_\_

**WRN No.:** \_\_\_\_\_

A	B	C	D	E	F	G		H	I
Item No.	Description of work	Scheduled Value	Work Completed		Materials Presently Stored (Not in D or E)	TOTAL Completed & Stored (D+E+F)	% Completed (G/C)	Balance to Finish (C-G)	Retainage
			From Previous Applications	This Period					
<b>TOTALS</b>									

PHARMACY CHILLER REPLACEMENT REBID  
OCTOBER, 2018

## **SECTION 01 25 00**

### **PRODUCT SUBSTITUTION PROCEDURES**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. General requirements for the Work in relation to substitutions and product options.
- B. Submit to the Owner's property insurance carrier shop drawings, samples, and product data (such as manufacturer's standard schematic drawings and other literature) when required by individual Specifications sections.
- C. Related Work Specified Elsewhere
  - 1. Instructions to Bidders.
  - 2. OSU General Conditions.

##### **1.02 REQUESTS FOR SUBSTITUTIONS**

- A. Requests for substitution of products in place of those specified shall be in accordance with Instructions to Bidders, and as specified herein.

##### **1.03 CONTRACTOR'S RESPONSIBILITIES**

- A. Investigate proposed products and determine that they are equal or superior in all respects to products specified.
- B. Provide same guarantee for accepted substitutions as for products specified.
- C. Coordinate installation of accepted substitutions into the Work, making such changes as may be required for the Work to be complete in all respects.

##### **1.04 SUBSTITUTIONS DURING BIDDING**

- A. Submit two (2) copies of the following information with each request to the Owner:
  - 1. CSI substitution request form.
  - 2. Comparison of proposed substitution with product, material or system specified.
  - 3. Complete data, substantiating compliance of proposed substitution with the Contract Documents.
  - 4. Test numbers and supporting reports, indicating compliance with referenced standards.
  - 5. Evidence that warranty requirements are acceptable.
  - 6. Details indicating specific deviations proposed for the substitution.
  - 7. Reference and applicable Specification sections.
  - 8. Applicable product samples.
- B. All substitution requests shall be received in the Owner's office no less than ten (10) calendar days before bid opening. Requests received after this date will not be considered.

### **1.05 SUBSTITUTIONS DURING CONSTRUCTION**

- A. Substitutions will normally not be considered after date of Contract except when required due to unforeseen circumstances.
- B. Within a period of thirty (30) days after date of Contract, the Owner may, at its option, consider formal written requests for substitution of products in place of those specified, when submitted in accordance with the requirements stipulated herein.
- C. One or more of the following conditions must be documented in any such request:
  - 1. Required for compliance with final interpretation of code or insurance requirements.
  - 2. Required due to unavailability of a specified product.
  - 3. Required because of the inability of the specified product to perform properly or to fit in the designated space.
  - 4. Substitution would be substantially in the best interest of the Owner in terms of cost, time, or other considerations.

### **1.06 SUBSTITUTIONS NOT PERMITTED**

- A. If implied on submittals without first requesting approval thereof.
- B. If acceptance will require substantial revision of the Contract Documents.

**END OF SECTION**

SUBSTITUTION REQUEST FORM

TO: \_\_\_\_\_

PROJECT: \_\_\_\_\_

SPECIFIED ITEM:

Section	Page	Paragraph	Description
---------	------	-----------	-------------

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: \_\_\_\_\_

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes description of changes to Contract Documents which proposed substitution will require for its proper installation.

The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitution does not affect dimensions shown on Drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance and quality of the Proposed Substitution are equivalent or superior to the Specified Item.

Submitted by:

Signature \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

Date \_\_\_\_\_

Telephone \_\_\_\_\_

Attachments:

For use by Design Consultant:

Accepted                       Accepted as noted

Not Accepted                       Received too late

By \_\_\_\_\_

Date \_\_\_\_\_

Remarks \_\_\_\_\_

## **SECTION 01 31 19**

### **PROJECT MEETINGS**

#### **PART 1 GENERAL**

##### **1.01 PRE-CONSTRUCTION MEETING**

- A. Architect/Engineer/Designer, Contractor and Owner will meet prior to start of the Work (within seven (7) days after notice to proceed) to discuss at least the following topics and any others of mutual interest.
1. Schedule of Values
  2. Permit Status/tree protection/erosion control
  3. List of sub-contractors
  4. Job inspections.
  5. Early purchase of, and/or lead time requirements for material and equipment/repurchase of equipment
  6. Monthly payment date/SOP for pay requests
  7. Portion of site to be occupied by construction.
  8. Parking/Staging areas
  9. Non-smoking campus requirements
  10. Maintenance of access and safety.
  11. Processing of field decisions and change orders
  12. Labor provisions/labor rates for subs
  13. Material submittals/deferred submittals
  14. Owner access during construction.
  15. Review of Contract Documents/review ADA requirements/cross-slopes
  16. Coordination procedures and separate contracts.
  17. Progress schedules.
  18. Critical Work sequencing.
  19. Safety and emergency procedures/24 hour contact numbers
  20. Security procedures.
  21. Hazardous materials.
  22. Progress meetings.
  23. Contract close-out.
- B. Location of Meeting: Project site

##### **1.02 PROGRESS MEETINGS**

- A. The Contractor will schedule and administer progress meetings and will:
1. Prepare agendas.
  2. Schedule progress meetings, frequency, time and day to be determined during pre-construction meeting.
  3. Make physical arrangements for and preside at meetings.
  4. Record minutes and include decisions.
  5. Distribute copies of minutes to participants within four (4) days after meetings.

- B. Location of Meetings: Project site.
- C. Attendance:
  - 1. The Owner or Owner's Authorized Representative.
  - 2. Contractor.
  - 3. Subcontractors affected by agenda.
  - 4. Project Architect/Engineer/as necessary.
  - 5. Owner will attend meeting to ascertain Work is expedited consistent with progress schedule and with Contract Documents.
- D. Minimum Agenda:
  - 1. Review and approve minutes from previous meeting.
  - 2. Review Work progress since previous meeting.
  - 3. Discuss field observations, and problems.
  - 4. Review delivery schedules, construction schedule, and identify problems which impede planned progress.
  - 5. Review proposed changes.
  - 6. Material submittals.
  - 7. Note all new subcontractors performing Work at the job site.

**END OF SECTION**

## **SECTION 01 33 23**

### **SHOP DRAWINGS, PRODUCT DATA, SAMPLES**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Submit to the Owner shop drawings, samples, and product data (such as manufacturer's standard schematic drawings and other literature) when required by individual Specifications sections.
- B. Related Work Specified Elsewhere
  - 1. Instructions to Bidders.
  - 2. OSU General Conditions.

##### **1.02 SUBMITTAL SCHEDULING**

- A. For items requiring review by the Owner only, submittals shall be sent to the Owner at least 15 calendar days before the date each is required for fabrication or installation.
- B. Submittals to be reviewed by Owner's consultants shall be sent to the Owner at least 20 calendar days before the date each is required for fabrication or installation.
- C. Submittals to be reviewed by Owner's property insurance carrier shall be sent to Owner as directed in individual specification sections.
- D. Submittals involving Substitution requests or other modifications requiring review by the Owner and/or the Owner's consultants shall be sent to the Owner at least 20 calendar days before the date each is required for fabrication or installation.

##### **1.03 SUBMITTAL CONTENT AND FORMAT**

- A. General Requirements:
  - 1. Shop Drawings: Submit in electronic format and, if requested by Owner's Authorized Representative, submit one reproducible transparency and 1 print of each drawing.
  - 2. Product Data: Submit electronically, and if requested by Owner's Authorized Representative, up to 6 hard copies.
  - 3. Samples: Submit the number and type stated in each Specification Section. Submit a minimum of three sets of color samples where color selection is required.
  - 4. Submittals shall include:
    - a. Date and revision dates return date requested.
    - b. Project title and number.
    - c. The names of the Contractor, subcontractor, supplier, and manufacturer.
    - d. Identification of product or material, with Specification Section number.

- e. Relation to adjacent critical features of work or materials.
  - f. Field dimensions, clearly identified as such.
  - g. Applicable standards, such as ASTM number or Federal Specification.
  - h. Identification of deviations from Contract Documents, and for products accompanied by Substitution request as required by Section 01 25 00.
  - i. Contractor's stamp legibly signed, essentially as follows:
    - 1) The undersigned, acting on behalf of the Contractor, certifies that this submittal has been reviewed and is approved; products have been verified as being as specified, field measurements and field construction criteria have been or will be coordinated, and the submittal is in compliance with Contract Documents.
5. Re-submission Requirements:
- a. Revise initial drawings as required and resubmit as specified for initial submittal.
  - b. Indicate on drawings any changes which have been made other than those requested by the Owner or the owner's consultants.
6. The Owner may return without review any submittal not meeting the requirements listed above.
- B. Shop Drawings:
- 1. Present data in a clear and thorough manner.
  - 2. Details shall be identified by reference to sheet and detail, schedule or room numbers shown on Contract Documents.
  - 3. Structural items shall be identified by location in the completed structure. Identify details by reference to contract sheet and detail numbers.
  - 4. Minimum sheet Size: 8 ½ x 11".
- C. Product Data:
- 1. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data:
    - a. Clearly mark each copy to identify pertinent product or models.
    - b. Show dimensions, weights, and clearances required.
    - c. Show performance data consisting of capabilities, ROM, KW, pressure drops, design characteristics and consumption; conforming as closely as possible to the test methods referenced in the Plans and Specifications.
    - d. Show wiring or piping diagrams and controls.
  - 2. Manufacturer's standard schematic drawings and diagrams:
    - a. Modify to delete information which is not applicable.
    - b. Supplement standard information to provide information specifically applicable to the Work.
- D. Samples:
- 1. Insure that samples are of sufficient size to indicate the general visual effect or color.
  - 2. Where samples must show a range of color, texture, finish, graining, or

- other property, submit sets of pairs illustrating the full scope of this range.
3. One (1) sample or one (1) set of approved samples will be retained by the Owner; final work will be measured against approved samples.

#### **1.04 QUALITY ASSURANCE**

- A. Process submittals in ample time for review, as applicable, so as to not delay the Work. All submittals shall be received by the Owner within ten (10) days after pre-construction.

#### **1.05 DEFINITIONS**

- A. The Owner will mark reviewed materials as follows:
  1. "No Exception Taken," which means fabrication, manufacture and/or installation may proceed.
  2. "Make Revisions Noted," which means fabrication, manufacture and/or installation may proceed with revisions as noted.
  3. "Revise and Resubmit," which means that fabrication, manufacture and/or installation may not proceed.
  4. "Rejected," which means do not proceed; make arrangements for the review of the proposed Work with the Owner as soon as possible.

#### **1.06 PROCESSING**

- A. Review submittals, make necessary corrections, and become familiar with the content of the submittals.
- B. Mark each item with Contractor's stamp.
- C. Accompany submittals with a transmittal letter bearing the project name, Contractor's name, number of items, and other pertinent data.
- D. Keep one copy of each reviewed submittal on the job site at all times.
- E. Be responsible for obtaining and distributing prints of shop drawings to the various suppliers, and the Owner once review process has been completed. Make prints of reviewed shop drawings only from transparencies which carry the appropriate stamp and endorsement.

**END OF SECTION**

PHARMACY CHILLER REPLACEMENT REBID  
OCTOBER, 2018

## SECTION 01 42 13

## ABBREVIATIONS AND SYMBOLS

## PART 1 GENERAL

## 1.01 REQUIREMENTS INCLUDED

- A. Words which may be found elsewhere in the Project Manual and Drawings are abbreviated in accordance with the standards set forth in the following table:

A/C	air conditioning	CG	corner guard
AB	anchor bolt	CH	ceiling height
AC	asphaltic concrete	CI	cast iron
ACT	acoustical tile	CJ	control joint
AD	area drain	CKBD	chalkboard
ADD	addendum	CL	centerline
ADD'L	additional	CLG	ceiling
ADH	adhesive	CLR	clear(ance)
AFF	above finish floor	CM	construction manager
AGG	aggregate	CMT	ceramic mosaic (tile)
AL	aluminum	CMU	concrete masonry unit
ALLOW	allowable	COL	column
ALT	alternate	COM	communications
ANOD	anodized	CONC	concrete
AP	access panel	CONN	connect(ion)
APPRX	approximate	CONST	construction
ARCH	architect(ural)	CONT	continuous or continue
ASPH	asphalt	CONTR	contract(or)
AUTO	automatic	CPT	carpet
AVE	avenue	CRS	course(s)
		CS	countersink
		CSMT	casement
BD	board	CT	ceramic tile
BIT	bituminous	CTR	center
BLDG	building	CVG	clear vertical grain
BLKG	blocking	CW	cold water
BM	bench mark, beam(s)	CWT	ceramic wall tile
BOT	bottom	CY	cubic yard
BRZ	bronze		
BS	both side	D	depth
		DEMO	demolish, demolition
CB	catch basin	DEP	depressed
CEM	cement	DF	drinking fountain
CF	cubic foot	DIA	diameter
CFOI	contractor furnished owner installed	DIAG	diagonal
		DIM	dimension

DISP	dispenser	FIN	finish(ed)
DIV	division	FLCO	floor cleanout
DL	dead load	FLR	floor(ing)
DMT	demountable	FLUR	fluorescent
DN	down	FND	foundation
DP	dampproofing	FOC	face of concrete
DR	door	FOIC	furnished by owner/installed by contractor
DS	downspout	FOIO	furnished by owner/installed by owner
DT	drain tile	FOM	face of masonry
DTL	detail	FP	fireproofing, flash point
DW	dumbwaiter	FPHB	freeze-proof hose bib
DWG	drawing(s)	FR	fire resistive, fire rated
DWR	drawer	FRM	frame(d), (ing)
EA	each	FS	full size
EB	expansion bolt	FSS	finished structural slab
EF	each face	FT	foot
EJ	expansion joint	FTG	footing
EL	elevation	FTS	finished topping slab
ELEC	electric(al)	GA	gage, gauge
EMBED	embedment	GALV	galvanized
EMER	emergency	GB	grab bar or gypsum board
ENCL	enclose(ure)	GC	general contractor
EP	electrical panel board	GI	galvanized iron
EQ	equal	GL	glass, glazing
EQUIP	equipment	GLS	glass resin wall surfacing
EST	estimate	GP	gypsum
EVT	equiviscous temperature	HB	hose bib
EW	each way	HBD	hardboard
EWC	electric water cooler	HC	hollow core
EX.EXIT	existing	HD	heavy duty
EXH	exhaust	HDR	header
EXP	exposed	HDW	hardware
EXT	exterior	HM	hollow metal
FA	fire alarm	HOR	horizontal
FAF	fluid applied flooring	HP	high point
FARF	fluid applied resilient floor	HR	hour
FAS	fasten, fastener	HT	height
FBD	fiberboard	HTG	heating
FBT	finished blowing temperature	HVAC	heating, ventilating, air conditioning
FD	floor drain, fire damper	HWD	hardwood
FE	fire extinguisher	HWH	hot water heater
FEC	fire extinguisher cabinet	ID	inside diameter, identification
FF	factory finish		
FGL	fiberglass		
FHMS	flathead machine screw		
FHWS	flathead wood screw		

ABBREVIATIONS AND SYMBOLS  
01 42 13 - 3

IN	inch	OA	overall
INCIN	incinerator	OBS	obscure
INCL	include(d), ion)	OC	on center(s)
INT	interior	OD	outside diameter
INV	invert	OF	overflow
JB	junction box	OFCI	owner furnished contractor installed
JC	janitor's closet	OFOI	owner furnished owner installed
JT	joint	OHMS	ovalhead machine screw
KD	kiln dried	OHWS	ovalhead wood screw
KCP	Keene's cement plaster	OPG	opening
KO	knockout	OPP	opposite
KP	kick plate	OZ	ounce(s)
LAB	laboratory	P	paint(ed)
LAM	laminated	PB	push button
LAV	lavatory	PCF	pounds per cubic foot
LBS	pounds	PCP	putting coat plaster
LH	left hand	PERF	perforate(d)
LL	live load	PL	plate, property line
LONGIT	longitudinal	PLAM	plastic laminate
LP	low point	PLAS	plaster
LW	lightweight	PNL	panel
MAX	maximum	PP	push plate
MB	machine bolt	PR	pair
M. MECH	mechanic(al)	PREP	prepare
MFR	manufacture(r)	PSF	pounds per square foot
MH	manhole	PSI	pounds per square inch
Min	minimum, minute	PT	point, pressure treated
MISC	miscellaneous	PTN	partition
MO	masonry opening	PVC	polyvinyl chloride
MO#	model number	PWD	plywood
MOD	modular	QT	quarry tile
MPH	miles per hour	R	rise
MS	machine screw	RA	return air
MTL	metal	RAD	radius
MULL	mullion	RCP	reflected ceiling plan
MWP	membrane waterproofing	RD	roof drain
NAT	natural, natural finish	REF	reference
NIC	not in contract	REFR	refrigerator
NO	number	REINF	reinforce(ing)
NOM	nominal	REQ	required
NTS	not to scale	RET'G	retaining
		REV	revision(s), revised
		RH	right had

ABBREVIATIONS AND SYMBOLS  
01 42 13 - 4

RM	room	TEMP	tempered
RO	rough opening	THK	thickness
RSF	resilient sheet flooring	TKBD	tackboard
		TO	top of
SC	solid core	TP	top of paving
SCHED	schedule	TRANS	transverse
SEC	section	TS	top of slab
SF	square feet (foot)	TV	television
SHT	sheet	TW	top of wall
SHTHG	sheathing	TYP	typical
SIM	similar		
SL	sleeve	UNO	unless noted otherwise
SOG	slab on grade		
SPEC	specification(s)	VAT	vinyl asbestos tile
SQ	square	VB	vapor barrier
SS	storm sewer	VCT	Vinyl Composition Tile
S4S	finished 4 sides	VERT	vertical
SD	storm drain	VG	vertical grain
ST	steel, street	VIF	verify in field
ST ST	stainless steel	VWC	vinyl wall covering
STD	standard		
STR	structural	W	width, wide, water
SUPP	supplement	W/	with
SUPT	support	W/O	without
SUSP	suspended	WC	water closet
SV	sheet vinyl	WD	wood, wood finish
		WP	waterproof(ing)
T	tread	WNS	wainscot
TBM	top bench mark	WR	water resistant
T&G	tongue and groove	WS	waterstop
TB	towel bar	WW	window wall
TC	top of curb	WWC	wood wall covering
TEL	telephone	WWF	woven wire fabric

B. Words which may be found elsewhere in the Project Manual and Drawings are abbreviated in accordance with the standards set forth in the following table:

&	and
$\lambda$	angle
@	at
$\varnothing$	diameter, round
"	inches
:	is, shall b
'	feet
$\zeta$	perpendicular
/	per
%	percent
#	pound, number
X	by (as in 2 by 4)

**END OF SECTION**

PHARMACY CHILLER REPLACEMENT REBID  
OCTOBER, 2018

## SECTION 01 42 16

### DEFINITIONS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Words which may be found elsewhere in the Contract Documents are defined in accordance with the standards set forth in the following table:

**Approve:**

Where used in conjunction with Architect's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be limited to the Architect's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Architect be interpreted as a release of Contract requirements.

**As Detailed, As Shown:**

Where "as detailed", "as shown" or words of similar importance are used, it shall be understood that reference to the Drawings accompanying the Specifications is made unless otherwise stated.

**As Directed, As Required, As Authorized, As Reviewed, As Accepted:**

Where "as directed", "as required", "as authorized", "as reviewed", "as accepted" or words of similar importance are used, it shall be understood that the direction, requirement, permission, authorization, review, or acceptance of the Architect is intended, unless otherwise stated.

**As Indicated:**

Where "as indicated" is used it shall be understood that reference to Drawings and/or Specifications is made unless otherwise stated.

**Directed, Requested, etc.:**

Terms such as "directed," "requested," "authorized," "selected," will be understood as "directed by Architect," "requested by Architect," and similar phrases shall not be interpreted to extend Architect's responsibility into Contractor's responsibility for construction supervision.

**Furnish:**

Except as otherwise defined in greater detail the term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

**Indicated:**

The term "indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications

and to similar means of recording requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for purpose of helping reader locate cross-reference and no limitation of location is intended except as specifically noted.

**Install:**

Except as otherwise defined in greater detail, the term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

**Installer:**

The term "installer" is defined as the entity (person or firm) engaged by Contractor, or its subcontractor or sub-subcontractor for performance of a particular unit of Work at project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (Installers) be expert in operations they are engaged to perform.

**Provide:**

Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

**END OF SECTION**

**SECTION 01 42 19****REFERENCE STANDARDS****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Quality Assurance.
- B. Location of References.
- C. Schedule of References.

**1.02 QUALITY ASSURANCE**

- A. For products or quality of work specified by association, trade, or federal standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents.
- C. General Applicability of Standards: Except where Contract Documents include more stringent requirements, applicable standards of the construction industry have the same force and effect as if bound or copied directly into Contract Documents.
- D. Such standards are made a part of the Contract Documents by reference.
- E. Individual sections indicate which codes and standards the Contractor must keep at the project site, available for reference.
- F. Referenced industry standards take precedence over standards which are not referenced but recognized in industry as applicable.
- G. Non-referenced standards are not directly applicable to the Work, except as a general requirement of whether the Work complies with standards recognized in the construction industry.

**1.03 LOCATION OF REFERENCES**

- A. Valley Library, Oregon State University.

**1.04 SCHEDULE OF REFERENCED ASSOCIATIONS**

AIA            American Institute of Architects

## STANDARDS

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	<a href="http://WWW.AIA.ORG">WWW.AIA.ORG</a>
AISC	American Institute of Steel Construction <a href="http://WWW.AISC.ORG">WWW.AISC.ORG</a>
AISI	American Iron and Steel Institute <a href="http://WWW.STEEL.ORG">WWW.STEEL.ORG</a>
ANSI	American National Standards Institute <a href="http://WWW.ANSI.ORG">WWW.ANSI.ORG</a>
APA	American Plywood Association <a href="http://WWW.APAWOOD.ORG">WWW.APAWOOD.ORG</a>
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers <a href="http://WWW.ASHRAE.ORG">WWW.ASHRAE.ORG</a>
ASTM	American Society for Testing and Materials <a href="http://WWW.ASTM.ORG">WWW.ASTM.ORG</a>
AWPA	American Wood Protection Association <a href="http://WWW.AWPA.COM">WWW.AWPA.COM</a>
AWS	American Welding Society <a href="http://WWW.AWS.ORG">WWW.AWS.ORG</a>
BIA	Masonry Institute of America <a href="http://WWW.MASONRYINSTITUTE.ORG">WWW.MASONRYINSTITUTE.ORG</a>
BOLI	Oregon Bureau of Labor and Industries <a href="http://WWW.BOLI.STATE.OR.US">WWW.BOLI.STATE.OR.US</a>
CCB	Construction Contractors Board <a href="http://WWW.OREGON.GOV.CCB/">WWW.OREGON.GOV.CCB/</a>
CDA	Copper Development Association <a href="http://WWW.COPPER.ORG">WWW.COPPER.ORG</a>
CISPI	Cast Iron Soil Pipe Institute <a href="http://WWW.CISPI.ORG">WWW.CISPI.ORG</a>
CSI	Construction Specification Institute <a href="http://WWW.CSINET.ORG">WWW.CSINET.ORG</a>
DEQ	Department of Environmental Quality (Oregon) <a href="http://WWW.OREGON.GOV/DEQ/">WWW.OREGON.GOV/DEQ/</a>

## STANDARDS

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DHI	Door and Hardware Institute <a href="http://WWW.DHI.ORG">WWW.DHI.ORG</a>
DOT	Department of Transportation <a href="http://WWW.DOT.GOV">WWW.DOT.GOV</a>
EPA	U.S. Environmental Protection Agency <a href="http://WWW.EPA.GOV">WWW.EPA.GOV</a>
FM	Factory Mutual System <a href="http://WWW.FMGLOBAL.COM">WWW.FMGLOBAL.COM</a>
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) <a href="http://WWW.GSA.GOV/PORTAL/CONTENT/103856">WWW.GSA.GOV/PORTAL/CONTENT/103856</a>
IBC	International Building Code <a href="http://WWW.ICCSAFE.ORG">WWW.ICCSAFE.ORG</a>
ICBO	International Conference of Building Officials <a href="http://PUBLICECODES.CITATION.COM/ICOD/IBG/INDEX.HTM">PUBLICECODES.CITATION.COM/ICOD/IBG/INDEX.HTM</a>
IRS	Internal Revenue Service <a href="http://WWW.IRS.GOV">WWW.IRS.GOV</a>
ISA	Instrumentation Systems and Automation Society <a href="http://WWW.ISA.ORG">WWW.ISA.ORG</a>
NAAMM	National Association of Architectural Metal Manufacturers <a href="http://WWW.NAAMM.ORG">WWW.NAAMM.ORG</a>
NBFU	National Board of Fire Underwriters <a href="http://WWW.NFPA.ORG">WWW.NFPA.ORG</a>
NEC	National Electric Code <a href="http://WWW.NECPLUS.ORG">WWW.NECPLUS.ORG</a>
NEMA	National Electrical Manufacturers' Association <a href="http://WWW.NEMA.ORG">WWW.NEMA.ORG</a>
NESC	National Electrical Safety Code <a href="http://WWW.IEEE.ORG">WWW.IEEE.ORG</a>
NFPA	National Fire Protection Association <a href="http://WWW.NFPA.ORG">WWW.NFPA.ORG</a>

## STANDARDS

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NRCA	National Roofing Contractors' Association WWW.NRCA.NET
OAR	Oregon Administrative Rules ARCWEB.SOS.STATE.OR.US/404.HTML
OESP	State of Oregon Electrical Specialty Code <a href="http://www.bcd.oregon.gov/programs/online_codes.html">http://www.bcd.oregon.gov/programs/online_codes.html</a>
ORS	Oregon Revised Statutes LANDRU.LEG.STATE.OR.US/ORS/
OSHA	Occupational Safety and Health Administration WWW.OSHA.GOV
OSSC	Oregon Structural Specialty Code <a href="http://www.bcd.oregon.gov/programs/online_codes.html">http://www.bcd.oregon.gov/programs/online_codes.html</a>
PS	Product Standard STANDARDS.GOV/STANDARDS.CFM
SDI	Steel Door Institute WWW.STEELDOOR.ORG
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association WWW.SMACNA.ORG
SPRI	Single Ply Roofing Institute WWW.SPRI.ORG
SSPC	Steel Structures Painting Council WWW.SSPC.ORG
SWRI	Sealing, Waterproofing and Restoration Institute WWW.SWIRONLINE.ORG
UBC	Uniform Building Code (See ICBO)
UFC	Uniform Fire Code WWW.NFPA.ORG
UL	Underwriters' Laboratories, Inc. WWW.UL.COM
UMC	Uniform Mechanical Code WWW.UBC.COM

REFERENCE

STANDARDS

UPC	Uniform Plumbing Code <a href="http://WWW.UBC.COM">WWW.UBC.COM</a>
WHL	Warnock Hersey Laboratories <a href="http://WWW.INTEK.COM/MARKS/WH/">WWW.INTEK.COM/MARKS/WH/</a>
WCLIB	West Coast Lumber Inspection Bureau <a href="http://WWW.WCLIB.ORG">WWW.WCLIB.ORG</a>
WWPA	Western Wood Products Association <a href="http://WWW.WWPA.ORG">WWW.WWPA.ORG</a>

01 42 19 - 5

**END OF SECTION**



## **SECTION 01 45 00**

### **QUALITY CONTROL**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Codes, regulations and permits.
- B. Procedures for quality control.

##### **1.02 OWNER RESPONSIBILITIES**

- A. Owner will employ and pay for services of an independent testing laboratory to perform inspection, sampling and testing as required by local building authority.
- B. Owner's Authorized Representative will provide on-site observation during construction.

##### **1.03 CODES, REGULATIONS AND PERMITS**

- A. All Work shall conform with the Oregon Structural Specialty Code (OSSC) based on the International Building Code (IBC), as amended by the State of Oregon Building Codes Division and the edition designated by the governing authority.
- B. Contractor shall comply with all applicable state and local construction codes.
- C. References to codes, Specifications and standards referred to in the Contract Documents shall mean, and are intended to be, the latest edition, amendment or revision of such reference standard in effect as of the date of these Contract Documents.
- D. The Owner shall be responsible for all permits and City of Corvallis plan review fees; the Contractor shall be responsible for all licenses and associated fees required for the Project.
- E. Contractor shall arrange and attend all required permit inspections and furnish evidence of approved City inspection reports per Section 01 77 00.

##### **1.04 QUALITY OF WORK**

- A. It is the true and specific intent of these Specifications that quality of Work on all phases of the construction and embracing all the trade sections shall be of high quality performed by workers skilled in their trade and performing their Work only according to the standard of best practice of the trade.
- B. All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with manufacturer's directions unless otherwise specified.
- C. If Work is required in a manner to make it impossible to produce first quality Work, or should discrepancies appear among Contract Documents, request

interpretation from Architect before proceeding with Work.

- D. Failure to secure interpretation may cause rejection by Architect or owner of installation.

### **1.05 LAYOUT**

- A. Be responsible for properly laying out the Work and for lines and measurements for the Work.
- B. Verify the figures shown on the drawings before laying out the Work and report errors or inaccuracies to the Architect before commencing Work.
- C. Strict compliance with maximum slopes is required. Accessible parking spaces and adjacent access aisles with slope exceeding 2% in any direction, as determined by OSU, shall be removed and replaced by the contractor at their expense.
- D. Strict compliance with maximum slopes is required. New sidewalks exceeding 1:20 slope or with cross slope exceeding 2%, as determined by OSU, shall be removed and replaced by the contractor at their expense. Ramps exceeding 1:16 slope or with cross slope exceeding 2%, as determined by OSU, shall be removed and replaced by the contractor at their expense.

### **1.06 SUPERVISION**

- A. The Contractor shall maintain effective supervision on the project at all times Work is being performed.
- B. The superintendent shall be the same person throughout the project and shall attend the preconstruction conference.

### **1.07 INSPECTIONS AND TESTING**

- A. Contractor shall notify the Owner at least twenty-four (24) hours in advance of any required progress inspection or final inspection including final punch list inspection.
- B. Cooperate with laboratory personnel, provide access to Work and furnish incidental equipment material and labor required for field testing and sample taking.

### **1.08 EVALUATION OF TESTS AND INSPECTIONS**

- A. Results of laboratory and/or field control tests and inspections shall be the principal basis upon which satisfactory completion of Work shall be judged.
- B. If results of tests and inspections indicate Work is below requirements of Contract Documents, that portion of Work is subject to rejection.

### **1.09 ADJUSTMENTS**

- A. Remove and replace Work so rejected at Contractor's expense including costs of subsequent tests and inspections until Work meets requirements of Contract

Documents.

- B. The Owner reserves the right to perform any testing as may be required to determine compliance with the Contract Documents.
- C. Costs for such testing will be the Owner's responsibility unless testing indicates noncompliance. Cost for such testing indicating noncompliance shall be borne by the Contractor.
- D. Noncomplying Work shall be corrected and testing will be repeated until the Work complies with the Contract Documents.
- E. Contractor will pay costs for retesting noncomplying Work.

**END OF SECTION**

## **SECTION 01 51 00**

### **CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.

##### **1.02 REQUIREMENTS OF REGULATORY AGENCIES**

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction.
- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition".
- C. Electrical Service: Comply with NEMA, NEC and UL standards and regulations for temporary electric service; install service in compliance with National Electric Code (NFPA 70).
- D. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use; obtain required certifications and permits if required.

##### **1.03 PROTECTION**

- A. Protect sidewalks, asphalt paving, concrete, trees, shrubs, and lawn areas at all times from damage resulting from construction activities.
- B. Prevent materials from clogging catch basins and yard drains; leave drains clean and in proper working condition.
- C. Protect Existing Irrigation Systems:
  - 1. In the event damage occurs to an underground irrigation system as a direct result of a Contractor's activities, the Contractor shall repair/replace or be assessed a charge at the discretion of the Owner.
  - 2. If repairs are to be made by the Contractor, the repairs will be inspected by the Owner's Authorized Representative prior to backfilling.
  - 3. Any galvanized pipe that requires repair shall be repaired at a threaded coupling, not by use of a compression coupling.
- D. Protect Existing Air Handling Systems:
  - 1. Contractor shall be responsible for protection of the cleanliness of the existing air handling system at all times. This protection shall include:
    - a. During site work or building demolition, prefilters shall be provided and maintained on all building outside air intakes at all times throughout the construction duration.
    - b. During any interior work that may create dust in the interior space and

adjacent corridor/hallways, air filters shall be provided and maintained on all affected air return and exhaust grilles. Where air flow in or out of the space is not required, all air duct openings shall be temporarily blanked off with plywood or sheet metal.

- c. Prior to starting any work, the Contractor shall record and submit to the Owner's Authorized Representative, pressure readings across all existing air handler air filter banks before installation of new prefilters.
  - d. Upon completion of all Work affecting existing air handling systems, the Contractor shall remove all temporary filters, covers and associated parts and restore the system to its original operating condition unless otherwise stated elsewhere in the Contract Documents
- E. Clean, repair, resurface, or restore existing surfaces to their original, or better, condition, or completely replace such surfaces to match existing, where damaged by construction operations.
- F. Security is the responsibility of the Contractor.
- G. Construction Debris:
- 1. Debris shall not be allowed to remain around the buildings during performance of Work, but shall be disposed of as rapidly as it accumulates.
  - 2. On completion of Work, the buildings and grounds shall be left in a condition that is equal to or better than original condition.
  - 3. In case of failure to do so, the Owner may remove rubbish and charge the cost to the Contractor.
- H. The Contractor shall manage a safe job environment for both the safety of all the people around the Work site as well as the safety of the Owner's and general public's property.
- I. The Contractor shall provide and maintain suitable barricades, shelters, lights, and danger signals during the progress of the Work; they shall meet the requirements of the local building code and OSHA.

#### **1.04 DRAINAGE**

- A. Verify that all rain drains in the construction areas are in working order and notify the Owner's Authorized Representative in writing of any rain drains that are plugged, prior to the start of the Work.
- B. Start of Work will be considered as acknowledgment that all drains are clear and in good working order.
- C. All drains shall be left in a clean and proper working condition.

#### **1.05 CONSTRUCTION PROJECT SAFETY FORM**

- A. Contractor shall submit to the Owner, prior to signing the Contract, the completed "Construction Project Safety Form", which is provided with instructions at the end of this Section.

## 1.06 TEMPORARY UTILITIES

- A. Temporary Utilities:
  - 1. Prepare a schedule indicating dates for implementation and termination of each temporary utility.
  - 2. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.
- B. Conditions of Use:
  - 1. Keep temporary services and facilities clean and neat in appearance.
  - 2. Operate in a safe and efficient manner.
  - 3. Take necessary fire prevention measures.
  - 4. Do not overload facilities or permit them to interfere with progress.
  - 5. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.
- C. Electrical Service:
  - 1. Service limited to 20 amp 120V circuits will be paid for by the Owner.
  - 2. Connection to the service shall be the responsibility of the Contractor, with the Owner's approval.
  - 3. Coordinate with the Owner's Authorized Representative.
- D. Water Service:
  - 1. Service in reasonable quantities for the Project will be paid for by the Owner.
  - 2. Connection to the service shall be the responsibility of the Contractor, with the Owner's approval.
  - 3. Coordinate with the Owner's Authorized Representative.

## 1.07 TEMPORARY SUPPORT FACILITIES

- A. Temporary Sanitary Facilities:
  - 1. Provide and maintain an adequate number of facilities for the use of all persons employed on the Work during construction.
  - 2. Provide enclosed, weatherproof facilities with heat as required.
  - 3. Use of new or existing Owner's facilities will not be permitted.
- B. Temporary Heat and Ventilation:
  - 1. As necessary, provide temporary heat and ventilation required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
- C. Telephone Equipment: Provide telephone communications at project site.
- D. Existing Services:
  - 1. Do not interrupt any existing service.

2. Prior request and approval of the Owner's Representative will enable the Owner to shut down any utility required by the Work.
3. Contractor shall not shut down utilities.

### **1.08 TEMPORARY BARRIERS AND ENCLOSURES**

- A. Provide barriers and fencing to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage.
- B. Provide Commercial grade chain link fence construction.
- C. Provide 6 foot high fence around construction site as directed by Owner's Authorized Representative; equip with vehicular and pedestrian gates with lock.
- D. Exterior Closures: Provide temporary secured, weather-tight closures at exterior openings, to permit acceptable working conditions and protection of the Work.
- E. Interior Closures:
  1. Provide temporary floor to ceiling partitions (not plastic sheeting) and ceilings as required to separate work areas from Owner occupied areas, to prevent penetration of dust and moisture into Owner occupied areas, to reduce construction noise, and to prevent damage to existing materials and equipment.
  2. Paint surfaces exposed to view from Owner occupied areas.

### **1.09 ODORS**

- A. Work that causes excessive odors shall be performed only after coordination with the Owner's Authorized Representative. Filtering of air intakes to units may be required to prevent odors and vapors from entering the buildings.
- B. Contractor shall provide 7 days advance notice to the Owner's Authorized Representative in order for advance notice to be forwarded to building occupants. Work stoppage may occur if advance notification has not been coordinated or odors and vapors from the work are found to generate complaints from building occupants.

### **1.10 FIRE SAFETY**

- A. Ensure that required exit routes remain unobstructed while building is occupied.
- B. Abide by all fire safety requirements for buildings under construction, alteration or demolition as required by Article 87, of the Uniform Fire Code as adopted by the State of Oregon.
- C. An emergency telephone shall be provided on site. Cellular telephone equipment is acceptable.
- D. Fire Suppression Equipment:
  1. Install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers", and NFPA 241 "Standard for Safeguarding Construction, Alterations and

Demolition Operations".

2. Maintain equipment in working condition with current inspection certificate attached to each.
3. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
4. Store combustible materials in containers in fire-safe locations.
5. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes for fighting fires.
- 6.
6. Provide continual supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
7. When possible, relocate hot work to a designated hot work area.
8. If the materials or equipment cannot be relocated to a designated hot work area, use the least hazardous form of hot work that will get the job done and prepare the area properly.
9. Manage mobile hot work using the formal hot work permit system. (mentioned in the next bullet point and also a directive in the OSU Hot Work Safety Program)
10. Make sure both fire protection and hot work equipment work properly.
11. Train all personnel involved in hot work operations and activities so that they have the understanding, knowledge, and skills necessary to safely perform their jobs.

### **1.11 CONSTRUCTION AIDS**

- A. Scaffolding: comply with applicable OSHA requirements.
- B. Material Handling Equipment:
  1. Provide necessary cranes, hoists, towers, or other lifting devices.
  2. Use only experienced operators.
  3. Remove equipment as soon as possible after task is ended.
  4. Coordinate placement of such equipment with Owner's Authorized Representative.
  5. Obtain required permits and meet requirement of governing authorities regarding applicable regulations.
- C. Materials or debris shall not be allowed to free fall from building.
- D. The use of chutes or conveyors must be approved by Owner.

### **1.12 TEMPORARY CONTROLS**

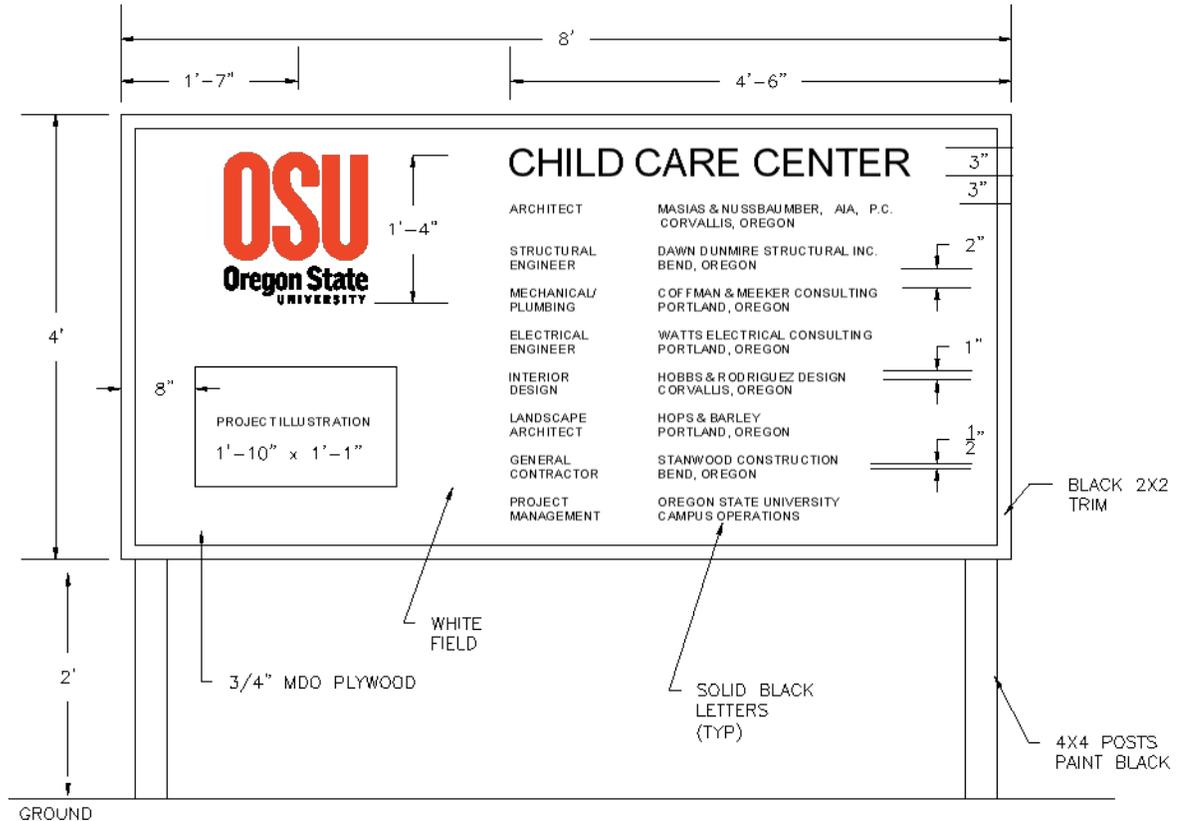
- A. Water Control:
  1. Maintain excavations free of water.
  2. Provide, operate, and maintain necessary pumping equipment.
- B. Protection:
  1. Protect installed Work and provide special protection where specified in individual specification sections.

2. Prohibit traffic or storage upon waterproofed or roofed surfaces.
- C. Security:
1. Provide security and facilities to protect Work and existing facilities and Owner's operations from unauthorized entry, vandalism, or theft.
  2. Coordinate operations with Owner's Authorized Representative.
- D. Temporary Traffic Control /Pedestrian Accessibility
1. A continuous route for all pedestrians, including persons with disabilities and bicyclists, shall be maintained at all times. When existing pedestrian facilities are disrupted, closed, or relocated in a construction zone, temporary pedestrian facilities shall be provided.
  2. Temporary pedestrian facilities should be safe and accessible. There should be no curbs or abrupt changes in grade that could cause tripping or be a barrier to wheelchair use.
  3. Signage shall be provided directing people to the temporary accessible route. The signage shall include the International Symbol of Accessibility.
  4. Contractors shall not block temporary walkways with vehicles, equipment, construction materials, signs, trash, or other objects that might prohibit pedestrian passage.
  5. Construction equipment and equipment operation must be separated from any open walkways. At construction zones, pedestrian fences or other protective barriers shall be provided to prevent access into the construction zone.

### **1.13 PROJECT SIGNAGE**

- A. Contractor is permitted to post only one project identification sign based on the following example:

## OSU TYPICAL JOB SIGN



### 1.14 PREPARATION

- A. Consult with Owner to review jobsite areas required for field offices, material storage and stockpiles, equipment storage, access to different locations, etc.

### 1.15 PERFORMANCE

- A. Confine equipment, apparatus, and storage of material to work limits. The Owner will not be responsible for protection of materials and equipment from damage, pilfering, etc.
- B. Install temporary facilities in such a manner that the installed work will not be damaged.
- C. Do not use facilities of existing building unless authorized in writing by the Owner.
- D. Effective September 1, 2012, OSU became a non-smoking campus and smoking is prohibited on all Campus property.
- E. Keep facilities well maintained.
- F. Relocate temporary facilities as required during job progress.

- G. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
1. Replace air filters and clean inside of ductwork and housings.
  2. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
  3. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

**END OF SECTION**

# Oregon State University Construction and Maintenance Safety Requirements

EH&S, 130 Oak Creek Building, Corvallis, OR 97331-7405, (541) 737-2505,  
FAX (541) 737-9090

**Complete OSU Construction and Maintenance Safety Form** - Send completed documents (including Site Safety Plan and all separate answer pages) to Construction Contract Administration along with the signed contract and bonds.

**Project Isolation** - All construction and remodeling activities regardless of size and/or scope must be fenced, barricaded, or otherwise protected to restrict entrance and to ensure the safety of those in the general area. See isolation requirements.

**Site Safety Plan** - A site safety plan will be required and will address:

- General Information
- Emergency Information
- Key Organization Personnel
- Hazard Evaluation/Facility Impact
- Emergency Procedures
- Work Zones
- Security Measures
- Fire Protection

A model plan is attached. This form can be used if another plan has not already been prepared. Contact OSU Environmental Health & Safety for more information 737-2505.

## Isolation Requirements

**General:** All construction, maintenance, and remodeling activities, regardless of size or scope, must be fenced, barricaded, or otherwise isolated to restrict entrance and to ensure the safety of those in the general area.

**Outdoor Activities:** Outdoor projects require the following perimeter isolation:

- A six foot chain-link fence, with controlled access points, extending in all directions around the excavation or building site such that no area of the construction is accessible to pedestrians or unauthorized personnel or vehicles.
- Isolation area will include vehicle loading and unloading areas.
- At the University's option, other barricading plans may be accepted. These may apply to projects such as road resurfacing, parking lot striping, exterior building water proofing, deliveries, etc. Contact EH&S regarding other barricading plans.

**Overnight:** Any excavation across or adjacent to sidewalks or pathways which must be left open overnight, must be identified with working, blinking construction lights in addition to solid barricades

**Indoor Activities:** Indoor construction or maintenance projects which will create dust, potentially hazardous fumes or vapors, or offensive odors are subject to the following isolation:

- Areas where existing doors can provide isolation will be labeled "Construction Area-- Authorized Personnel Only".

- All other areas will be isolated by a solid barrier. The minimum barrier allowed is 4 mil poly sheeting sealed to prevent migration of dust.
- Mechanical ventilation may be required.
- A solid wall is required if building envelope is opened to the outside.

**Contractor Responsibilities**

- The contractor will provide all barricading, isolation, and fencing material. OSU will not provide any materials.
- The contractor will also provide all appropriate warning and detour signs when sidewalks, exits, or roads are closed.
- Contractor will provide all other construction area signs.

**OSU Construction and Maintenance Safety Form**

**Send completed safety documents to Construction Contract Administration with contract and bonds.**

Date: \_\_\_\_\_ Project: \_\_\_\_\_

Start Date: \_\_\_\_\_ Completion date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Contact: \_\_\_\_\_

Work # \_\_\_\_\_ 24 hr #: \_\_\_\_\_

OSU Project Mgr: \_\_\_\_\_ Work / 24hr #'s: \_\_\_\_\_

Dept Contact: \_\_\_\_\_ OSU EH&S Contact: \_\_\_\_\_

Preconstruction meeting? **Y N** Date/Time/Location: \_\_\_\_\_

**For the following items, prepare answers on a separate sheet for all items marked "Yes". Precede each answer with the appropriate item number. All boxes need to be checked**

<b>Y</b>	<b>N</b>	<b>For This Project</b>	<b>If YES, then:</b>
		<b>1</b> Will any confined spaces be accessed?	Describe location of entry Specify location of permit Notify EH&S prior to entry See SAF 209
		<b>2</b> Will hot work be performed (welding, cutting, brazing, etc.)?	Provide min. 5# 2A10BC extinguisher within 10 ft If indoors - provide and describe ventilation See SAF 214
		<b>3</b> Any products brought to campus?	Provide MSDS on site prior to first use; Make available to OSU on request
		<b>4</b> Will lead paint be impacted?	Describe plan to limit contamination
		<b>5</b> Will asbestos-containing-material be impacted?	Coordinate with OSU asbestos manager
		<b>6</b> Will <u>any</u> materials (construction debris, soil, water, etc) be removed from campus?	Describe in detail identity and disposition of material (how, where)
		<b>7</b> Any open trenches or holes?	Describe isolation procedures (see Page 1)
		<b>8</b> Will a crane be used?	Describe crane safety plan (include plan to prevent loads above occupied areas)
		<b>9</b> Is this project building a new facility, a major remodel?	Provide Site Safety plan Describe isolation procedures (see Page 1)
		<b>10</b> Is this a minor remodeling project?	Provide, or fill out model Site Safety Plan form ( see Page 3) Describe isolation procedures (see Page 1)
		<b>11</b> Will air contamination be produced (e.g. dust, CO, solvent vapors, VOCs, odors)?	Describe project ventilation and isolation Indicate position of building air intake(s)
		<b>12</b> Will there be noise > 85 dB?	Describe noise minimization plan
		<b>13</b> Will this project use a scaffold or an external chute?	Describe isolation, dust control, installation
		<b>14</b> Will this project involve a working surface >6' above a lower level	Describe fall protection
		<b>15</b> Will any "blind" saw-cuts or penetrations be made in existing foundations, floors, ceilings and/or walls?	Describe plan for detecting and protecting power lines or other building utility lines.

EH&S Review: \_\_\_\_\_ Date: \_\_\_\_\_

# Model Site Safety Plan

## 1. General Information

Contractor name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City, State, Zip \_\_\_\_\_  
 Site Safety Officer \_\_\_\_\_ Project Dates \_\_\_\_\_  
 Project Name \_\_\_\_\_

## 2. Emergency Information

Emergency Response	911	OSU EH&S and OSU Facilities Services must be notified in the event of an emergency
Hazardous Materials Spill		
MSDS on-site location		
OSU EH&S	(541) 737-2505	
Facilities Services	(541) 737-2969	

## 3. Contractor Key Personnel

	Name	Phone	Emergency Contact
Company Owner			
Project Manager			
Job Supervisor			
Site Safety Officer			
Other Responsible Individual			
24 Hour Notification			

List of employees on site \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. Hazard Evaluation/ Facility Impact	
Physical	Yes / No
Heavy Equipment	
Noise	
Heat	
Elevation	
Radiation Materials	
Excavations	
Underground Utilities	
Confined Spaces	
Fire Prevention	
Electrical	

5. Emergencies
Services
Evacuation Route
First Aid Location
Hazardous Materials Spill Procedure

## 6. Work Zones

Material Storage \_\_\_\_\_  
 Parking locations \_\_\_\_\_  
 Individuals with OSU keys \_\_\_\_\_  
 Access issues \_\_\_\_\_

## 7. Security measures

\_\_\_\_\_  
 \_\_\_\_\_

## 8. Fire protection

\_\_\_\_\_  
 \_\_\_\_\_

## **SECTION 01 56 39**

### **TREE AND PLANTING PROTECTION**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Section includes temporary fencing, barricades, and guards to protect trees, plants and groundcovers not indicated to be removed, as necessary and required to prevent damage above and below grade.

##### **1.02 DEFINITIONS**

- A. Dripline: Outer perimeter of branches of any tree or plant.
- B. Groundcover: Includes but not limited to plants and grass.

##### **1.03 PERFORMANCE REQUIREMENTS**

- A. The Contractor shall exercise utmost care to protect existing trees and plants designated to remain and shall comply with all protection requirements provided by Owner and City of Corvallis as conveyed through the Owner's Authorized Representative.
- B. The Contractor shall install tree protection fencing as detailed and shall prevent damage to shrubs, groundcover, trees, root systems, soil, bark, foliage, branches and limbs due to construction activities, including but not limited to:
  - 1. Soil contamination, erosion, and compaction.
  - 2. Excessive wetting, and ponding due to storm water, and construction run-off.
  - 3. Alteration of grade, stockpiling of soil, debris, and materials.
  - 4. Damage to soil, roots, bark, trunk, limbs, branches, and foliage.
  - 5. Prevent unauthorized cutting, breaking, skinning and bruising of roots, branches, and bark.

##### **1.04 SUBMITTALS**

- A. Procedural proposal for tree and plant protection, describe methods of protection, and stabilization, provide drawings and supporting documentation as directed.
- B. Contractor's Condition Inspection; include written report and color photographs.

##### **1.05 PROJECT CONDITIONS**

- A. Install protection during initial mobilization at the Work site, and maintain until substantial completion.
- B. If, in the opinion of the Owner's arborist, additional protection is required, the Contractor shall install additional fencing as directed and without cost to the Owner.
- C. The location and requirements for additional fencing shall be determined by the

Owner's arborist prior to, and at any time during the course of the Work.

- D. Fencing:
  - 1. Fencing shall be installed at the tree and plant protection areas as detailed on Plans, or as directed by the Owner's Authorized Representative.
  - 2. Tree and plant protection fences shall remain in place until all Work is completed and shall not be removed or relocated without the approval of the Owner's Authorized Representative.
- E. Driving and Parking:
  - 1. Not permitted off paved surfaces without the approval of the Owner's Authorized Representative.
  - 2. When approved, the Contractor shall place plywood of sufficient thickness and width to support vehicles and prevent rutting on the area to be driven on.
  - 3. Care shall also be taken with respect to existing lawn sprinkler systems.
- F. Storage of materials and Debris: Not permitted off paved surfaces.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURED COMPONENTS**

- A. Chain Link Fencing: 11 gage galvanized chain link, six feet. tall, and 1.5 inch inside diameter galvanized steel line posts and 2.5 inch inside diameter corner posts, provide lockable gates as necessary.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Inspect trees, plants, and groundcovers, document existing conditions prior to installation of protection.

### **3.02 EXECUTION**

- A. Pruning and Cutting of Roots, Branches and Foliage:
  - 1. Review conditions with Architect or Owner prior to need for work, and proceed as directed.
  - 2. All pruning to be done by Owner's landscape maintenance personnel or ISA Certified arborist under the direction of Owner's Landscape Management Department.
  - 3. Perform pruning and cutting with sharp instruments intended for the purpose; do not break or chop.
- B. Root Cuttings:
  - 1. Carefully and cleanly cut roots and branches of trees indicated to be left standing where such roots and branches obstruct new construction.

2. Protect exposed roots with wet burlap until they can be covered with soil.
- C. Excavation and Trenching Within Drip Lines:
1. Permitted where indicated, and at other specifically approved locations.
  2. Tunnel under or around roots by hand digging or boring.
  3. Do not cut main lateral roots and tap roots over one inch diameter; cut smaller roots which interfere with installation of new Work.
  4. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover, or pack with peat moss and wrap with burlap.
  5. Water and maintain roots in moist condition and temporarily support and protect from damage until permanently relocated and covered with backfill.
- D. Existing Grading: Maintain within drip line of trees and plants unless otherwise indicated on the drawing and approved by the Owner's Authorized Representative.
- E. Tree Protection:
1. Provide temporary fence complying with Section 01 51 00 for protection of trees to remain.
  2. Extend fencing ten feet beyond dripline, except where greater distance is required for protection of Elm trees.
  3. Prevent entry into protected areas except as authorized in writing by the Owner's Authorized Representative.

### **3.03 REPAIR AND REPLACEMENT OF TREES AND PLANTS**

- A. Repair trees or shrubs damaged by construction operations as directed by the Owner.
- B. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.
- C. Damaged Trees, Shrubs and Groundcover:
1. Replace where Owner's Authorized Representative determines restoration to normal growth pattern is not possible; plant and maintain as directed.
  2. Replacement trees up to 13 inches caliper and shrubs up to 4 feet tall: Same size as damaged tree or shrub, species selected by the Owner's Authorized Representative.
  3. Trees over 13 inch caliper and shrubs greater than 4 feet tall: Compensate Owner as determined by an acceptable consulting arborist registered with the American Society of Consulting Arborists.
  4. Replacement groundcovers: Same size and quality as damaged species selected by Owner's Authorized Representative.

**END OF SECTION**

PHARMACY CHILLER REPLACEMENT REBID  
OCTOBER, 2018

## SECTION 01 60 00

### PRODUCT REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Summary:
  - 1. Product options.
  - 2. Owner-furnished products.
  - 3. Product delivery, storage and handling.

##### 1.02 PRODUCTS

- A. Products:
  - 1. New material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work.
  - 2. Products may also include existing materials or components specifically identified for reuse.
- B. Use interchangeable components of the same manufacture for similar components.
- C. Unless otherwise specified, all material and equipment shall be new; free from defects impairing strength, durability, and appearance; of current manufacture.
- D. Items specified shall be considered minimum as to quality, function, capacity, and suitability for application intended.
- E. Items incorporated into the Work shall conform to applicable specifications and standards designated, and shall be of size, make, type, and quality specified.
- F. Design, fabricate, and assemble in accordance with current best engineering, industry, and shop practices.
- G. Manufacture like parts of duplicate units to standard size and gauge to make them interchangeable.
- H. Two or more items of the same kind shall be identical and made by the same manufacturer.

##### 1.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
- C. Products Specified by Naming One [or More] Manufacturer[s]: Products of manufacturer[s] named and meeting specifications, no options or substitutions

allowed.

D. Substitution Procedure: Under Section 01 25 00.

#### **1.04 REUSE OF EXISTING PRODUCTS**

- A. Except as specifically indicated or specified, materials and equipment removed from existing construction shall not be used in the completed Work.
- B. For material and equipment specifically indicated or specified to be reused in the Work:
  - 1. Use care in removal, handling, storage, and reinstallation to assure proper function in the completed Work.
  - 2. Arrange for transportation, storage, and handling of products which require off-site storage, restoration, or renovation.
  - 3. Remove and reinstall mechanical units, vents, guys, antennae, and electrical and grounding wires or conduits.

#### **1.05 OWNER FURNISHED PRODUCTS**

- A. Designate delivery dates of Owner-furnished items in the construction schedule.
- B. Receive, unload, store and handle Owner-furnished items at the site; protect from damage.

#### **1.06 DELIVERY, STORAGE AND HANDLING**

- A. Transport, handle, store and protect products in accordance with manufacturer's instructions.
- B. Arrange deliveries in accordance with construction schedules; coordinate to avoid conflict with Work and site conditions.
- C. Deliver and store products in undamaged condition in manufacturer's original containers or packaging with identifying labels intact and legible.
- D. Inspect shipments to assure compliance with Contract Documents and reviewed submittals, and that products are undamaged.
- E. Prevent soiling or damage to products or packaging.
- F. Interior Storage: Maintain required temperature and humidity ranges. Verify that Owner furnished storage meets product manufacturer's requirements.
- G. Exterior Storage:
  - 1. Store materials above ground to prevent soiling and/or moisture infiltration.
  - 2. Cover materials with waterproof breathable sheet coverings; provide adequate ventilation.
  - 3. All storage locations to be approved in advance by the Owner.
- H. Arrange storage to provide access for inspection.
- I. Coordinate with Owner's Authorized Representative all on-site storage activities.

J. Provide for security of stored products.

**END OF SECTION**

## **SECTION 01 73 29**

### **CUTTING AND PATCHING**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Requirements and limitations for cutting and patching of Work.

##### **1.02 RELATED SECTIONS**

- A. Section 01 25 00, Product Substitution Procedures.
- B. Section 01 33 23, Shop Drawings, Product Data, Samples

##### **1.03 SUBMITTALS**

- A. Submit written request in advance of cutting or alteration which affects:
  - 1. Structural integrity of any element of the Work.
  - 2. Efficiency, maintenance, or safety of any operational element.
  - 3. Visual qualities of sight exposed elements.
  - 4. Work of Owner or separate contractor.
- B. Include in request:
  - 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.

#### **PART 2 PRODUCTS**

##### **2.01 MATERIALS**

- A. Primary Products: Those required for original installation.
- B. Product Substitution: For any proposed change in materials, submit request for substitution under provisions of Section 01 25 00.

#### **PART 3 EXECUTION**

##### **3.01 EXAMINATION**

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

- B. After uncovering existing work, inspect conditions affecting performance of Work.
- C. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Provide temporary supports to ensure structural integrity of the Work.
- B. Provide devices and methods to protect other portions of the Work from damage.
- C. Provide protection from elements for areas which may be exposed by uncovering work.

### **3.03 CUTTING AND PATCHING**

- A. Execute cutting, fitting and patching to complete work.
- B. Fit products together, to integrate with other work.
- C. Remove and replace defective or non-conforming work.
- D. Provide openings in the work for penetration of mechanical and electrical work.

### **3.04 PERFORMANCE**

- A. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- B. Cut rigid materials using masonry saw or core drill. Pneumatic tools are not allowed without prior approval from Owner's Authorized Representative.
- C. Restore work with new products in accordance with requirements of Contract Documents.
- D. At penetrations of fire rated walls, partitions, ceiling or floor construction, completely seal voids with approved fire rated material, to full thickness of the penetrated element.
- E. Refinishing:
  - 1. Refinish surfaces to match adjacent finish.
  - 2. For continuous surfaces, refinish to nearest intersection or natural break.
  - 3. For an assembly, refinish entire unit.

**END OF SECTION**

## **SECTION 01 74 00**

### **CLEANING**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Related requirements specified elsewhere, cleaning for specific products or work: Specification section for that work.
- B. Maintain premises and public properties free from accumulations of waste, debris, and rubbish, caused by operations.
- C. At completion of Work remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

##### **1.02 QUALITY ASSURANCE**

- A. Standards: Maintain project in accord with applicable safety and insurance standards.
- B. Hazard Control:
  - 1. Store volatile wastes in covered metal containers.
  - 2. Provide adequate ventilation during use of volatile or noxious substances.

##### **1.03 MATERIALS**

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

##### **1.04 DURING CONSTRUCTION:**

- A. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- B. At reasonable intervals during progress of Work clean site and public properties, and dispose of waste materials, debris and rubbish.
- C. Provide on-site containers for collection of waste materials, debris and rubbish.
- D. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- E. Vacuum clean interior building areas when ready to receive finish painting, and continue vacuum cleaning on an as-needed basis until project is ready for Substantial Completion or occupancy.
- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

### **1.05 FINAL CLEANING**

- A. Employ experienced workers, or professional cleaners, for final cleaning.
- B. In preparation for Substantial Completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- C. Remove grease, dust, dirt, stains, labels, and other foreign materials from exposed interior and exterior finished surfaces.
- D. Remove putty, paint, labels, lubricants, etc., from windows, mirrors, and sash, and then polish, taking care not to scratch glass.
- E. Vacuum carpeting (shampoo where required), removing debris and excess nap.
- F. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- G. Replace air filters where units were operated during construction.
- H. Maintain cleaning until project, or portion thereof, is occupied by Owner.

**END OF SECTION**

## SECTION 01 77 00

### CONTRACT CLOSEOUT

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. The requirements specified in this section relate to all Contractors individually performing under these Contract Documents:
  - 1. Project Record Documents.
  - 2. Final review and payment.
- B. Related work specified elsewhere:
  - 1. OSU General Conditions.
  - 2. Shop Drawings, Product Data and Samples, Section 01 33 23.

##### 1.02 PROJECT RECORD DOCUMENTS

- A. The Project Record Documents shall be organized to include the following information:
  - 1. Table of Contents
  - 2. Project Team List
  - 3. Specifications (Including Addenda and Change Orders)
  - 4. Drawings
  - 5. Inspection Reports, as applicable
  - 6. Signed Warranty(ies)
  - 7. Maintenance Instructions
- B. One set of the Project Record Documents shall be submitted for review upon 75% completion of the Work.
- C. Project Record Documents shall be submitted electronically to the Owner. **Hard copies will not be accepted.**
- D. The project team list shall include the name, address, and phone number of the Owner, Contractor, Inspector, Subcontractors, and the materials manufacturers.
- E. Legibly mark each Specification section to indicate actual as-built condition indicating changes in the Work made by addenda or change order or actual materials used and actual manufacturer(s) used.
- F. Maintain current and accurate as-built mark-ups during construction and make available to Owner's Authorized Representative upon request.
- G. Legibly mark the drawings to indicate actual as-built conditions indicating changes in the Work made by addenda or change order or actual conditions which differ from the drawings.
- H. Redraw or provide new drawings as required for a complete as-built set of drawings. The Contractor shall maintain current and accurate as-built mark-ups during construction and make available to Owner's Authorized Representative.

- I. Include inspection reports if applicable.
- J. Include, in a single section, all copies of the Project's labor and material warranties clearly marked to identify the Owner's responsibilities under the terms of each warranty and the section of Work that each warranty covers. One set must be clearly marked as containing original documents.
- K. In the case of an elevator installation, the Contractor's and manufacturer's warranty shall provide for the Owner's right to respond to emergency/car failure situations for the purpose of extricating individuals trapped in the elevator.
- L. Include maintenance instructions complete with technical information and name, address, and phone number of the Contractor(s) and manufacturer(s) of each material and product.

### **1.03 FINAL REVIEW AND PAYMENT**

- A. Prior to completion, the Contractor shall inspect the Work and make a Punch-list noting all items that are incomplete and/or incorrect.
- B. The Contractor shall notify all Subcontractors in writing of incomplete and/or incorrect items. Notify far enough in advance of the completion date that the Work can be completed on schedule. Said Work shall be immediately corrected.
- C. Should conditions prevail which prohibit some elements of the Work from being accomplished, but the work-in-place will perform the primary function (i.e., painting cannot be completed due to high moisture content of masonry walls.) the Contractor shall record the reason with this Punch-list item requesting temporary delay in completion from the Owner in writing.
- D. Notify the Owner in writing that all items are completed and ready for final review or else that the Work product is fully usable, but some listed deficiencies remain to be completed. Submit all record documents at this time.
- E. The Owner will review all documents. When the documents include a Contractor's request for delay in completion, the Owner will review all Work which is certified as complete to the best knowledge of the Contractor. The Owner will also review the listed incomplete Work and assign a value to such uncompleted work.
- F. The Contractor shall make the required corrections to the Work expeditiously. A letter will be addressed to the Contractor informing the Contractor of the project status.
- G. When Contract closeout procedures are completed and all Punch-list deficiencies have been corrected, provide Owner with final corrected Project Record Documents based on Owner's preliminary review. Correct Project Record Documents shall be in electronic format.
- H. Final Completion by the Owner will be documented and the Contractor will receive written notice of acceptance of the Work and notification that final

payment may be billed and released.

- I. All warranties shall commence and become effective beginning on the date of Substantial Completion.

**END OF SECTION**

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.1 SECTION INCLUDES

1.2 REFERENCE STANDARDS

- A AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition 2016.
- B ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems 2008.
- C SMACNA (TAB) - HVAC Systems Testing, Adjusting and Balancing 2002.

1.3 SUBMITTALS

- A See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
  - 1. Include at least the following in the plan:
    - a. List of all air flow, water flow, sound level, system capacity and efficiency measurements to be performed and a description of specific test procedures, parameters, formulas to be used.
    - b. Copy of field checkout sheets and logs to be used, listing each piece of equipment to be tested, adjusted and balanced with the data cells to be gathered for each.
    - c. Discussion of what notations and markings will be made on the duct and piping drawings during the process.
    - d. Final test report forms to be used.
    - e. Procedures for formal deficiency reports, including scope, frequency and distribution.
- C Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
  - 1. Revise TAB plan to reflect actual procedures and submit as part of final report.
  - 2. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.
  - 3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
  - 4. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
  - 5. Units of Measure: Report data in both I-P (inch-pound) and SI (metric) units.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

- A Perform total system balance in accordance with one of the following:
  - 1. AABC (NSTSB), AABC National Standards for Total System Balance.
  - 2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.
  - 3. SMACNA (TAB).
- B Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.
- C TAB Agency Qualifications:
  - 1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.

2. Certified by one of the following:
    - a. AABC, Associated Air Balance Council: [www.aabc.com/#sle](http://www.aabc.com/#sle); upon completion submit AABC National Performance Guaranty
    - b. TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute: [www.tabbcertified.org/#sle](http://www.tabbcertified.org/#sle).
  - D TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.
- 3.2 EXAMINATION
- A Verify that systems are complete and operable before commencing work. Ensure the following conditions:
1. Systems are started and operating in a safe and normal condition.
  2. Temperature control systems are installed complete and operable.
  3. Hydronic systems are flushed, filled, and vented.
  4. Pumps are rotating correctly.
  5. Proper strainer baskets are clean and in place.
  6. Service and balance valves are open.
- 3.3 ADJUSTMENT TOLERANCES
- A Hydronic Systems: Adjust to within plus or minus 5 percent of design.
- 3.4 RECORDING AND ADJUSTING
- A Ensure recorded data represents actual measured or observed conditions.
- B Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- C After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
- D Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.
- 3.5 WATER SYSTEM PROCEDURE
- A Adjust water systems to provide required or design quantities.
- B Effect system balance with automatic control valves fully open to heat transfer elements.
- 3.6 SCOPE
- A Test, adjust, and balance the following:
1. HVAC Pumps.
  2. Centrifugal Water Chillers.

END OF SECTION

## SECTION 230719 - HVAC PIPING INSULATION

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A Piping insulation.
- B Flexible removable and reusable blanket insulation.

#### 1.2 REFERENCE STANDARDS

- A ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus 2013.
- B ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form 2016.
- C ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation 2017.
- D ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel 2008 (Reapproved 2013).
- E ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2018.
- F ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.
- G UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

#### 1.3 SUBMITTALS

- A Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

### PART 2 PRODUCTS

#### 2.1 REGULATORY REQUIREMENTS

- A Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

#### 2.2 GLASS FIBER

- A Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible, with wicking material to transport condensed water to the outside of the system for evaporation to the atmosphere.
  - 1. 'K'('Ksi') Value: ASTM C177, 0.23 at 75 degrees F(0.034 at 24 degrees C).
  - 2. Maximum Service Temperature: 220 degrees F(104 degrees C).
  - 3. Maximum Moisture Absorption: 0.2 percent by volume.
- B Vapor Barrier Jacket: White kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches(0.029 ng/Pa s m).

#### 2.3 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
  - 1. Minimum Service Temperature: Minus 40 degrees F(Minus 40 degrees C).
  - 2. Maximum Service Temperature: 180 degrees F(82 degrees C).
  - 3. Connection: Waterproof vapor barrier adhesive.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A Verify that piping has been tested before applying insulation materials.
- B Verify that surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION

- A Install in accordance with manufacturer's instructions.
- B Insulated pipes conveying fluids below ambient temperature; insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- C Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces (less than 10 feet(3 meters) above finished floor): Finish with canvas jacket sized for finish painting.

3.3 SCHEDULE

- A Cooling Systems:
    - 1. Refrigerant Suction:1 inch Elastomeric Insulation
- END OF SECTION

SECTION 232113 - HYDRONIC PIPING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Hydronic system requirements.
- B Condenser water piping, above grade.
- C Equipment drains and overflows.
- D Pipe hangers and supports.
- E Unions, flanges, mechanical couplings, and dielectric connections.
- F Valves:
  - 1. Ball valves.
  - 2. Butterfly valves.
  - 3. Check valves.
- G Flow controls.

1.2 RELATED REQUIREMENTS

- A Section 23 2500 - HVAC Water Treatment: Pipe cleaning.

1.3 REFERENCE STANDARDS

- A ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300 2016.
- B ASME B31.9 - Building Services Piping 2014.
- C ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2018.
- D ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service 2017.
- E ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers 1992 (Reapproved 2014).
- F ASTM F1476 - Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications 2007 (Reapproved 2013).
- G AWS D1.1/D1.1M - Structural Welding Code - Steel 2015, with Errata (2016).
- H AWWA C606 - Grooved and Shouldered Joints 2015.
- I MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2009.

1.4 SUBMITTALS

- A Product Data:
  - 1. Include data on pipe materials, pipe fittings, valves, and accessories.
  - 2. Provide manufacturers catalogue information.
  - 3. Indicate valve data and ratings.
  - 4. Show grooved joint couplings, fittings, valves, and specialties on drawings and product submittals, specifically identified with the manufacturer's style or series designation.

1.5 QUALITY ASSURANCE

- A Provide all grooved joint couplings, fittings, valves, specialties, and grooving tools from a single manufacturer.

PART 2 PRODUCTS

2.1 HYDRONIC SYSTEM REQUIREMENTS

- A Comply with ASME B31.9 and applicable federal, state, and local regulations.
- B Piping: Provide piping, fittings, hangers and supports as required, as indicated, and as follows:
  - 1. Where more than one piping system material is specified, provide joining fittings

that are compatible with piping materials and ensure that the integrity of the system is not jeopardized.

2. Use non-conducting dielectric connections whenever jointing dissimilar metals.
  3. Grooved mechanical joints may be used in accessible locations only.
    - a. Accessible locations include those exposed on interior of building, in pipe chases, and in mechanical rooms, aboveground outdoors, and as approved by Architect .
    - b. Use rigid joints unless otherwise indicated.
  4. Provide pipe hangers and supports in accordance with ASME B31.9 or MSS SP-58 unless indicated otherwise.
- C Pipe-to-Valve and Pipe-to-Equipment Connections: Use flanges, unions or grooved couplings to allow disconnection of components for servicing; do not use direct welded, soldered, or threaded connections.
- D Valves: Provide valves where indicated:
- 2.2 CONDENSER WATER PIPING, ABOVE GRADE
- A Steel Pipe: ASTM A53/A53M, Schedule 40, black.
1. Welded Joints: ASTM A234/A234M, wrought steel welding type fittings with finish matching piping; AWS D1.1/D1.1M welded.
  2. Threaded Joints: ASME B16.3, malleable iron fittings with finish matching piping.
  3. Grooved Joints: AWWA C606 grooved pipe, fittings of same material, and mechanical couplings.
- 2.3 EQUIPMENT DRAINS AND OVERFLOWS
- A Steel Pipe: ASTM A53/A53M, Schedule 40 galvanized; using one of the following joint types:
1. Threaded Joints: Galvanized cast iron, or ASME B16.3 malleable iron fittings.
  2. Grooved Joints: AWWA C606 grooved pipe, fittings of same material, and mechanical couplings.
- 2.4 PIPE HANGERS AND SUPPORTS
- A Provide hangers and supports that comply with MSS SP-58.
1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
  2. Hangers for Cold Pipe Sizes 2 Inches(50 mm) and Greater: Carbon steel, adjustable, clevis.
  3. Wall Support for Pipe Sizes to 3 Inches(76 mm): Cast iron hook.
  4. Wall Support for Pipe Sizes 4 Inches(100 mm) and Greater: Welded steel bracket and wrought steel clamp.
  5. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
  6. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
- B In grooved installations, use rigid couplings with offsetting angle-pattern bolt pads or with wedge shaped grooves in header piping to permit support and hanging in accordance with ASME B31.9.
- 2.5 UNIONS, FLANGES, MECHANICAL COUPLINGS, AND DIELECTRIC CONNECTIONS
- A Unions for Pipe 2 Inches(50 mm) and Less:
1. Ferrous Piping: 150 psig(1034 kPa) malleable iron, threaded.
- B Flanges for Pipe 2 Inches(50 mm) and Greater:
1. Ferrous Piping: 150 psig(1034 kPa) forged steel, slip-on.
- C Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
1. Dimensions and Testing: In accordance with AWWA

C606.

2. Mechanical Couplings: Comply with ASTM F1476.
3. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
4. When pipe is field grooved, provide coupling manufacturer's grooving tools.

## 2.6 BALL VALVES

A Up To and Including 2 Inches(50 mm):

1. Bronze one piece body, chrome plated brass ball, teflon seats and stuffing box ring, lever handle with balancing stops, solder ends with union.

## 2.7 BUTTERFLY VALVES

A Body: Cast or ductile iron with resilient replaceable EPDM seat, wafer, lug or grooved ends, extended neck.

B Disc: Construct of chrome plated ductile iron, stainless steel or ductile iron with EPDM encapsulation.

C Operator: 10 position lever handle.

## 2.8 SWING CHECK VALVES

A Over 2 Inches(50 mm):

1. Iron body, bronze trim, stainless steel, bronze or bronze faced rotating swing disc, renewable disc and seat, flanged or grooved ends.

## 2.9 FLOW CONTROLS

A Construction: Class 125, Brass or bronze body with union on inlet and outlet, temperature and pressure test plug on inlet and outlet, blowdown/backflush drain.

B Calibration: Control flow within 5 percent of selected rating, over operating pressure range of 10 times minimum pressure required for control, maximum minimum pressure 3.5 psi(24 kPa).

## 2.10 LABELING AND IDENTIFICATION

A Provide piping, valve and equipment labeling and identification per Oregon State Universty Design Standards available at <https://fa.oregonstate.edu/cpd-standards>

# PART 3 EXECUTION

## 3.1 PREPARATION

A Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B Prepare pipe for grooved mechanical joints as required by coupling manufacturer.

C Remove scale and dirt on inside and outside before assembly.

D Prepare piping connections to equipment using jointing system specified.

E Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

F After completion, fill, clean, and treat systems.

## 3.2 INSTALLATION

A Install in accordance with manufacturer's instructions.

B Install heating water, glycol, chilled water, condenser water, and engine exhaust piping to ASME B31.9 requirements.

C Route piping in orderly manner, parallel to building structure, and maintain gradient.

D Install piping to conserve building space and to avoid interfere with use of space.

E Group piping whenever practical at common elevations.

F Slope piping and arrange to drain at low points.

G Pipe Hangers and Supports:

1. Install in accordance with ASME B31.9, ASTM F708 or MSS SP-58.

2. Install hangers to provide minimum 1/2 inch(13 mm) space between finished covering and adjacent work.

3. Place hangers within 12 inches(300 mm) of each horizontal elbow.

4. Use hangers with 1-1/2 inch(38 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.

H Install valves with stems upright or horizontal, not inverted.

### 3.3 SCHEDULES

#### A Hanger Spacing for Steel Piping.

1. 1/2 inch(15 mm), 3/4 inch(20 mm), and 1 inch(25 mm): Maximum span, 7 feet(2100 mm); minimum rod size, 1/4 inch(6 mm).
2. 1-1/4 inches(32 mm): Maximum span, 8 feet(2400 mm); minimum rod size, 3/8 inch(9 mm).
3. 1-1/2 inches(40 mm): Maximum span, 9 feet(2700 mm); minimum rod size, 3/8 inch(9 mm).
4. 2 inches(50 mm): Maximum span, 10 feet(3.0 m); minimum rod size, 3/8 inch(9 mm).
5. 2-1/2 inches(65 mm): Maximum span, 11 feet(3.4 m); minimum rod size, 3/8 inch(9 mm).
6. 3 inches(80 mm): Maximum span, 12 feet(3.6 m); minimum rod size, 3/8 inch(9 mm).
7. 4 inches(100 mm): Maximum span, 14 feet(4.3 m); minimum rod size, 1/2 inch(13 mm).

END OF SECTION

SECTION 232114 - HYDRONIC SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Air vents.
- B Strainers.
- C Suction diffusers.
- D Combination pump discharge valves.

1.2 RELATED REQUIREMENTS

- A Section 23 2113 - Hydronic Piping.

1.3 REFERENCE STANDARDS

- A ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250 2015.

1.4 SUBMITTALS

- A Product Data: Provide product data for manufactured products and assemblies required for this project. Include component sizes, rough-in requirements, service sizes, and finishes. Include product description and model.
- B Maintenance Data: Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

PART 2 PRODUCTS

2.1 AIR VENTS

- A Manual Type: Short vertical sections of 2 inch(50 mm) diameter pipe to form air chamber, with 1/8 inch(3 mm) brass needle valve at top of chamber.

2.2 STRAINERS

- A Size 2-1/2 inch(65 mm) to 4 inch(100 mm):
  1. Provide flanged iron body for 175 psi(1200 kPa) working pressure, Y pattern with 1/16 inch(1.6 mm) or 3/64 inch(1.2 mm) stainless steel perforated screen.

2.3 SUCTION DIFFUSERS

- A Fitting: Angle pattern, cast-iron body, threaded for 2 inch(50 mm) and smaller, flanged for 2-1/2 inch(65 mm) and larger, rated for 175 psi(1200 kPa) working pressure, with inlet vanes, cylinder strainer with 3/16 inch(5 mm) diameter openings, disposable 5/32 inch(4 mm) mesh strainer to fit over cylinder strainer, 20 mesh start up screen, and permanent magnet located in flow stream and removable for cleaning.

2.4 PUMP CONNECTORS

- A Flexible Connectors: Flanged, braided type with wetted components of stainless steel, sized to match piping.
  1. Maximum Allowable Working Pressure: 150 psig(1030 kPa) at 120 degrees F(49 degrees C).
  2. Accommodate the Following:
    - a. Axial Deflection in Compression and Expansion: [3/8] inch([\_\_\_\_\_] mm).
    - b. Lateral Movement: [1/2] inch([\_\_\_\_\_] mm).
    - c. Angular Rotation: 15 degrees.
    - d. Force developed by 1.5 times specified maximum allowable operating pressure.
  3. End Connections: Flanged ductile iron; complying with ASME B16.1 Class 125.
  4. Provide necessary accessories including, but not limited to, swivel joints.

2.5 COMBINATION PUMP DISCHARGE VALVES

- A Valves: Straight or angle pattern, flanged cast-iron valve body with bolt-on bonnet for 175 psi(1200 kPa) operating pressure, non-slam check valve with spring-loaded bronze disc and seat, stainless steel stem, and calibrated adjustment permitting flow regulation.

## 2.6 LABELING AND IDENTIFICATION

Provide piping, valve and equipment labeling and identification per Oregon State University Design Standards available at <https://fa.oregonstate.edu/cpd-standards>

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A Install specialties in accordance with manufacturer's instructions.
- B Provide manual air vents at system high points and as indicated.
- C Provide valved drain and hose connection on strainer blow down connection.
- D Provide pump suction fitting on suction side of base mounted centrifugal pumps where indicated. Remove temporary strainers after cleaning systems.
- E Provide combination pump discharge valve on discharge side of base mounted centrifugal pumps where indicated.
- F Support pump fittings with floor mounted pipe and flange supports.
- G Provide relief valves on pressure tanks, low pressure side of reducing valves, heat exchangers, and expansion tanks.
- H Pipe relief valve outlet to nearest floor drain.
- I Where one line vents several relief valves, make cross sectional area equal to sum of individual vent areas.

END OF SECTION

## SECTION 232123 - HYDRONIC PUMPS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

A Base-mounted pumps.

#### 1.2 RELATED REQUIREMENTS

A Section 03 3000 - Cast-in-Place Concrete.

#### 1.3 REFERENCE STANDARDS

A UL 778 - Standard for Motor-Operated Water Pumps Current Edition, Including All Revisions.

#### 1.4 SUBMITTALS

A Product Data: Provide certified pump curves showing performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements.

B Manufacturer's Installation Instructions: Indicate hanging and support requirements and recommendations.

C Operation and Maintenance Data: Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

D Maintenance Materials: Furnish the following for Owner's use in maintenance of project.  
1. Extra Pump Seals: 2 for each type and size of pump.

### PART 2 PRODUCTS

#### 2.1 HVAC PUMPS - GENERAL

A Provide pumps that operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

B Products Requiring Electrical Connection: Listed and classified by UL or testing agency acceptable to Authority Having Jurisdiction as suitable for the purpose specified and indicated.

#### 2.2 BASE-MOUNTED PUMPS

A Type: Horizontal shaft, single stage, direct connected, radially or horizontally split casing, for 125 psi(860 kPa) maximum working pressure.

B Casing: Cast iron, or ductile iron with suction and discharge gage ports, renewable bronze casing wearing rings, seal flush connection, drain plug, flanged suction and discharge.

C Impeller: Bronze, fully enclosed, keyed to shaft.

D Bearings: Oil lubricated roller or ball bearings.

E Shaft: Alloy steel with copper, bronze, or stainless steel shaft sleeve.

F Seal: Mechanical seal, 225 degrees F(107 degrees C) maximum continuous operating temperature.

G Drive: Flexible coupling with coupling guard.

H Baseplate: Cast iron or fabricated steel with integral drain rim.

I Vibration Isolation:

1. Steel Spring Isolators

a. Freestanding, laterally stable without housing. 3/4 inch minimum deflection

J Performance: As scheduled on drawings.

K Electrical Characteristics: As scheduled on drawings.

#### 2.3 LABELING AND IDENTIFICATION

A Provide piping, valve and equipment labeling and identification per Oregon State University Design Standards available at <https://fa.oregonstate.edu/cpd-standards>

PART 3 EXECUTION

3.1 PREPARATION

- A Verify that electric power is available and of the correct characteristics.

3.2 INSTALLATION

- A Install in accordance with manufacturer's instructions.
- B Provide access space around pumps for service. Provide no less than minimum space recommended by manufacturer.
- C Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump such that no weight is carried on pump casings. For close-coupled or base-mounted pumps, provide supports under elbows on pump suction and discharge line sizes 4 inches(102 mm) and over.
- D Check, align, and certify alignment of base-mounted pumps prior to start-up.
- E Install close-coupled and base-mounted pumps on concrete housekeeping base, with anchor bolts, set and level, and grout in place.
- F Lubricate pumps before start-up.
- G Provide side-stream filtration system for closed loop systems. Install across pump with flow from pump discharge to pump suction from pump tapplings.

END OF SECTION

## SECTION 232300 - REFRIGERANT PIPING

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A Piping.
- B Refrigerant.
- C Moisture and liquid indicators.
- D Valves.
- E Strainers.
- F Filter-driers.
- G Solenoid valves.
- H Expansion valves.
- I Flexible connections.

#### 1.2 REFERENCE STANDARDS

- A AHRI 710 - Performance Rating of Liquid-Line Driers 2009.
- B AHRI 750 - Thermostatic Refrigerant Expansion Valves 2007.
- C AHRI 760 - Performance Rating of Solenoid Valves for Use With Volatile Refrigerants 2007.
- D ASHRAE Std 15 - Safety Standard for Refrigeration Systems 2013.
- E ASHRAE Std 34 - Designation and Safety Classification of Refrigerants 2013.
- F ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2013.
- G ASME B31.9 - Building Services Piping 2014.
- H ASTM B280 - Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service 2016.
- I AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding 2011 (Amended 2012).
- J MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2009.

#### 1.3 SYSTEM DESCRIPTION

- A Liquid Indicators:
  - 1. Use line size liquid indicators in main liquid line leaving condenser.
- B Valves:
  - 1. Use service valves on suction and discharge of compressors.
- C Filter-Driers:
  - 1. Use a filter-drier immediately ahead of liquid-line controls, such as thermostatic expansion valves, solenoid valves, and moisture indicators.
- D Solenoid Valves:
  - 1. Use in liquid line of systems operating with single pump-out or pump-down compressor control.
- E Flexible Connectors: Utilize at or near compressors where piping configuration does not absorb vibration.

#### 1.4 SUBMITTALS

- A Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.
- B Shop Drawings: Indicate schematic layout of system, including equipment, critical dimensions, and sizes.
- C Design Data: Submit design data indicating pipe sizing. Indicate load carrying capacity of trapeze, multiple pipe, and riser support hangers.

### PART 2 PRODUCTS

#### 2.1 REGULATORY REQUIREMENTS

A Conform to ASME B31.9 for installation of piping system.

## 2.2 PIPING

A Copper Tube: ASTM B280, H58 hard drawn or O60 soft annealed.

1. Fittings: ASME B16.22 wrought copper.
2. Joints: Braze, AWS A5.8M/A5.8 BCuP silver/phosphorus/copper alloy.

B Pipe Supports and Anchors:

1. Provide hangers and supports that comply with MSS SP-58.
  - a. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
2. Hangers for Pipe Sizes 1/2 to 1-1/2 Inch(13 to 38 mm): Malleable iron adjustable swivel, split ring.
3. Hangers for Pipe Sizes 2 Inches(50 mm) and Over: Carbon steel, adjustable, clevis.
4. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
5. Wall Support for Pipe Sizes to 3 Inches(75 mm): Cast iron hook.
6. Vertical Support: Steel riser clamp.
7. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
8. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
9. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

## 2.3 REFRIGERANT

A Refrigerant: R-134a, tetrafluoroethane as defined in ASHRAE Std 34.

## 2.4 MOISTURE AND LIQUID INDICATORS

A Indicators: Single port type, UL listed, with copper or brass body, flared or solder ends, sight glass, color coded paper moisture indicator with removable element cartridge and plastic cap; for maximum temperature of 200 degrees F(93 degrees C) and maximum working pressure of 500 psi(3450 kPa).

## 2.5 VALVES

A Ball Valves:

1. Two piece bolted forged brass body with teflon ball seals and copper tube extensions, brass bonnet and seal cap, chrome plated ball, stem with neoprene ring stem seals; for maximum working pressure of 500 psi(3450 kPa) and maximum temperature of 300 degrees F(149 degrees C).

## 2.6 STRAINERS

A Straight Line or Angle Line Type:

1. Brass or steel shell, steel cap and flange, and replaceable cartridge, with screen of stainless steel wire or monel reinforced with brass; for maximum working pressure of 430 psi(2960 kPa).

## 2.7 FILTER-DRIERS

A Performance:

1. Flow Capacity - Liquid Line: 80 Ton minimum, rated in accordance with AHRI 710.
2. Pressure Drop: 2 psi(14 kPa), maximum, when operating at full connected evaporator capacity.
3. Design Working Pressure: 350 psi(2410 kPa), minimum.

B Cores: Molded or loose-fill molecular sieve desiccant compatible with refrigerant, activated alumina, activated charcoal, and filtration to 40 microns, with secondary filtration to 20 microns; of construction that will not pass into refrigerant lines.

C Construction: UL listed.

1. Connections: As specified for applicable pipe type.

## 2.8 SOLENOID VALVES

Valve: AHRI 760 I-P, pilot operated, copper, brass or steel body and internal parts, synthetic seat, stainless steel stem and plunger assembly (permitting manual operation in case of coil failure), integral strainer, with flared, solder, or threaded ends; for maximum working pressure of 500 psi(3450 kPa).

## 2.9 EXPANSION VALVES

- A Angle or Straight Through Type: AHRI 750; design suitable for refrigerant, brass body, internal or external equalizer, bleed hole, adjustable superheat setting, replaceable inlet strainer, with non-replaceable capillary tube and remote sensing bulb and remote bulb well.
- B Selection: Evaluate refrigerant pressure drop through system to determine available pressure drop across valve. Select valve for maximum load at design operating pressure and minimum 10 degrees F(6 degrees C) superheat. Select to avoid being undersized at full load and excessively oversized at part load.

## 2.10 FLEXIBLE CONNECTORS

- A Corrugated stainless steel hose with single layer of stainless steel exterior braiding, minimum 9 inches(230 mm) long with copper tube ends; for maximum working pressure of 500 psi(3450 kPa).

## PART 3 EXECUTION

### 3.1 PREPARATION

- A Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B Remove scale and dirt on inside and outside before assembly.
- C Prepare piping connections to equipment with flanges or unions.

### 3.2 INSTALLATION

- A Install refrigeration specialties in accordance with manufacturer's instructions.
- B Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.
- C Install piping to conserve building space and avoid interference with use of space.
- D Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- E Arrange piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.
- F Provide clearance for installation of insulation and access to valves and fittings.
- G Insulate piping and equipment; refer to Section and Section 23 0716.
- H Follow ASHRAE Std 15 procedures for charging and purging of systems and for disposal of refrigerant.
- I Locate expansion valve sensing bulb immediately downstream of evaporator on suction line.
- J Provide external equalizer piping on expansion valves with refrigerant distributor connected to evaporator.
- K Install flexible connectors at right angles to axial movement of compressor, parallel to crankshaft.
- L Fully charge completed system with refrigerant after testing.

END OF SECTION

SECTION 236429 - MODULAR WATER CHILLERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Factory-assembled packaged chiller.
- B Charge of refrigerant and oil.
- C Controls and control connections.
- D Chilled water connections.
- E Condenser water connections.
- F Electrical power connections.

1.2 RELATED REQUIREMENTS

- A Section 03 3000 - Cast-in-Place Concrete: Concrete housekeeping pads.
- B Section 23 0593 - Testing, Adjusting, and Balancing for HVAC.
- C Section 23 0800 - Commissioning of HVAC.
- D Section 23 2113 - Hydronic Piping.
- E Section 23 2114 - Hydronic Specialties.
- F Section 26 0583 - Wiring Connections.

1.3 REFERENCE STANDARDS

- A AHRI 550/590 - Performance Rating of Water-Chilling and Heat Pump Water-Heating Packages Using the Vapor Compression Cycle 2011.
- B AHRI 575 - Method of Measuring Machinery Sound Within an Equipment Space 2008.
- C ASHRAE Std 15 - Safety Standard for Refrigeration Systems 2013.
- D ASHRAE Std 90.1 - Energy Standard for Buildings Except Low-Rise Residential Buildings 2013, Including All Addenda.
- E ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1 - Rules for Construction of Pressure Vessels 2017.
- F NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2014.
- G UL 984 - Hermetic Refrigerant Motor-Compressors Current Edition, Including All Revisions.
- H UL 1995 - Heating and Cooling Equipment Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

- A Coordination: Coordinate physical size, weight and location of major pieces of equipment to be installed. Notify Engineer of any major deviations from the equipment originally specified prior to ordering equipment.

1.5 SUBMITTALS

- A Product Data: Provide rated capacities, weights, specialties and accessories, electrical requirements and wiring diagrams.
- B Shop Drawings: Indicate components, assembly, dimensions, weights and loadings, required clearances, and location and size of field connections. Indicate equipment, piping and connections, valves, strainers, and thermostatic valves required for complete system.
- C Manufacturer's Certificate: Certify that components furnished but not produced by manufacturer meet or exceed manufacturer's requirements.
- D Manufacturer's Performance Data: Indicate energy input versus cooling load output from 0 to 100 percent of full load at specified and minimum condenser water temperature for water-cooled chillers and at specified and minimum outdoor air temperature for air-cooled chillers.
- E Manufacturer's Instructions: Submit manufacturer's complete installation instructions.
- F Operation and Maintenance Data: Include start-up instructions, maintenance data, parts lists, controls, and accessories; include trouble-shooting guide.
- G Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

1.6 WARRANTY

- A Manufacturer's Warranty: Provide minimum five year warranty to include coverage for

compressor and minimum one year warranty on parts.

## PART 2 PRODUCTS

### 2.1 CHILLER APPLICATIONS

A Chiller CH-1: Water-Cooled.

1. See equipment schedules on drawings for capacities and performance.

### 2.2 CHILLERS

A Chillers: Factory assemble and test module consisting of compressor(s), compressor motor(s), condenser, enclosure, DX refrigeration circuits(s) and specialties, interconnecting piping, condenser water circuit isolation valves, starters, and microprocessor-based controls.

1. Rating: AHRI 550/590.
2. Safety: UL 1995 and ASHRAE Std 15.
3. Machinery Sound Testing: AHRI 575.
4. Construction & Testing: ASME BPVC-VIII-1 if applicable for construction type.
5. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. or testing firm acceptable to the Authority Having Jurisdiction as suitable for the purpose specified and indicated.
6. Energy Efficiency: ASHRAE Std 90.1.
  - a. See Drawings.
7. Enclosures:
  - a. Frame:
    - 1) Heavy gage steel.
    - 2) Factory painted finish.
  - b. Steel Chiller Cabinets:
    - 1) Factory baked on enamel finish.
  - c. Electrical Equipment: NEMA 250 or UL 1995 as applicable.
8. Motors: UL 984. See Section 23 0513 for additional requirements.

### 2.3 COMPRESSORS

A Compressors: Oil-free Centrifugal Compressor.

1. Module: Two, variable speed drive compressors with soft start, adequate valve types and specialties required for operation and servicing in accordance with manufacturer's recommendations.
2. Vibration Control: Factory installed internal rubber-in-shear isolators.
3. Bearings: Micro processor controlled magnetic bearing system.
4. Capacity Reduction System: Dual compressors with variable speed drive. Compressor staging per integrated chiller controls.
5. Motor: 3600 rpm, suction gas-cooled, with overload protection.
6. Evaporator: Direct expansion arrangement connecting refrigerant circuit directly to ASU-1 cooling coil.

### 2.4 WATER-COOLED CONDENSER

A Provide brazed plate type.

1. Plate Material: 316 stainless steel.
2. Refrigerant Working-Side Pressure Rating: 650 psig(4482 kPa) minimum.
3. Water Working-Side Pressure Rating: 285 psig(1965 kPa) minimum.
4. Provide with flanged or grooved connections.
5. Provide factory or field installed vents and water drain connections on condenser or piping.
6. Provide factory or field installed fittings for temperature control sensors on condenser or piping.

### 2.5 REFRIGERATION CIRCUITS

A Provide two independent refrigeration circuits with one compressor per circuit.

B Provide liquid line shut-off valve, filter-drier, thermal expansion valve, refrigerant relief device and compressor discharge check valve for each independent circuit.

## 2.6 INTEGRATED MICROPROCESSOR BASED DDC CONTROLS PACKAGE

- A Pre-wire, assemble, factory mount, and test operating and safety control system consisting of a digital display or gages, on-auto-off switch, motor starting contactors, disconnect switches, power and control wiring. Provide controls, monitoring, programmable set-points, alarms, and BAS as defined below:
1. Automatic Adjustable Operating Controls:
    - a. Temperature of refrigerant leaving chiller.
    - b. Number of compressor circuits required to operate based on set-points and system load.
    - c. Compressor short-cycling prevention.
    - d. Lead/lag operation for compressors. New lead compressor selected every 24 hours to equalize run time.
    - e. Automatic reset on power source failure.
    - f. Load limiting.
  2. Normal Operation Monitoring and Open Cover-less Displays:
    - a. Hours of operation.
    - b. Suction and discharge refrigerant pressures.
    - c. Automatic diagnostics.
    - d. Number of starts.
    - e. On/off compressor status.
    - f. Entering and leaving chilled water temperatures.
    - g. Status of operation.
    - h. Compressor winding temperature.
    - i. Suction temperature.
    - j. Condenser water entering and leaving temperatures.
    - k. Oil pressure.
  3. Set-Points:
    - a. Leaving refrigerant temperature.
    - b. Date/time.
    - c. Leaving condenser water temperature.
  4. Automatic Chiller Shut-Down Safety Controls and Alarm:
    - a. Automatic Reset:
      - 1) Chilled water flow interlock.
      - 2) Voltage protection (over/under).
      - 3) Phase reversal protection.
    - b. Manual Reset:
      - 1) Low suction pressure.
      - 2) High motor winding temperature.
      - 3) Low chilled water temperature.
      - 4) Low chilled water flow.
      - 5) High condenser refrigerant discharge pressure.
      - 6) Motor current overload and phase loss.
      - 7) Low oil flow.
    - c. Remote Alarm: Activate remote, audible bell upon safety shutdown of chiller.
  5. Building Automation System (BAS) Communications via Shielded Cable:
    - a. Minimum Data Transmission to BAS:
      - 1) All system operating conditions.
      - 2) Capacity control information.
      - 3) Safety shutdown conditions.
    - b. Minimum Operating Commands from BAS:
      - 1) Remote unit start/stop.
      - 2) Remote condenser water reset.
      - 3) Remote chilled water reset.

3.1 INSTALLATION

- A Install in accordance with manufacturer's instructions.
- B Align chiller package on steel or concrete foundations.
- C Install units on vibration isolators.
- D Connect to electrical service.
- E Connect to chilled water piping.
- F Connect to condenser water piping.
- G Arrange piping for easy dismantling to permit tube cleaning and removal.

3.2 MANUFACTURER'S FIELD SERVICES

- A Perform factory startup of the chiller by factory trained and authorized servicing technicians confirming equipment has been correctly installed prior to equipment becoming operational and covered under the manufacturer's warranty.
- B Supply initial charge of refrigerant and oil if not completely factory charged.
- C Demonstrate system operations and verify specified performance.

END OF SECTION

SECTION 238216 - AIR COILS

PART 1 GENERAL

1.1 SECTION INCLUDES

A Refrigerant coils.

1.2 REFERENCE STANDARDS

A SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2005 (Revised 2009).

1.3 SUBMITTALS

A Product Data: Provide coil and frame configurations, dimensions, materials, rows, connections, and rough-in dimensions.

1.4 DELIVERY, STORAGE, AND HANDLING

A Protect coil fins from crushing and bending by leaving in shipping cases until installation, and by storing indoors.

B Protect coils from entry of dirt and debris with pipe caps or plugs.

PART 2 PRODUCTS

2.1 REFRIGERANT COILS

A Tubes: 5/8 inch(16 mm) OD seamless copper or brass arranged in parallel or staggered pattern, expanded into fins, silver brazed joints.

B Fins: Aluminum or copper continuous plate type with full fin collars. Solder coat copper fin coils.

C Casing: Die formed channel frame of 16 gage, 0.0598 inch(1.52 mm) galvanized steel with 3/8 inch(9.5 mm) mounting holes on 3 inch(75 mm) centers. Provide tube supports for coils longer than 36 inches(900 mm).

D Headers: Seamless copper or brass tubes with silver brazed joints.

E Liquid Distributors: Brass or copper venturi type distributor with seamless copper distributor tubes, 5/16 inch(8 mm) outside diameter; maximum 12 circuits per distributor.

F Testing: Air test under water at 300 psi(2070 kPa) for working pressure of 250 psi(1720 kPa); clean, dehydrate, and seal with dry nitrogen charge.

G Configuration: Down feed with bottom suction to prevent trapping of oil.

H Fin Spacing: 8 fins per inch(3.1 mm on center).

PART 3 EXECUTION

3.1 INSTALLATION

A Install in accordance with manufacturers written instructions.

B Install in ducts and casings in accordance with SMACNA (DCS).

1. Provide airtight seal between coil and duct or casing.

C Protect coils to prevent damage to fins and flanges. Comb out bent fins.

D Install coils level. Install cleanable tube coils with 1:50 pitch.

E Make connections to coils with unions and flanges.

F Refrigerant Coils: Provide sight glass in liquid line within 12 inches(300 mm) of coil. Refer to Section 23 2300.

END OF SECTION



COMcheck Software Version 4.0.7.1

# Mechanical Compliance Certificate

## Section 1: Project Information

Energy Code: **2014 Oregon Energy Efficiency Specialty Code**  
 Project Title: OSU Pharmacy Chiller Replacement  
 Project Type: Alteration

Construction Site:  
 1601 SW Jefferson Way  
 Pharmacy Building  
 Corvallis, OR 97331

Owner/Agent:  
 John Doty  
 Oregon State University  
 3015 SW Western Blvd  
 Corvallis, OR 97331  
 541-727-5412

Designer/Contractor:  
 Adam Boyd  
 ColeBreit Engineering  
 1220 NW Kings Blvd  
 Corvallis, OR 97330  
 541-728-3293

## Section 2: General Information

Building Location (for weather data): Corvallis, Oregon  
 Climate Zone: 4c

## Section 3: Mechanical Systems List

**Quantity System Type & Description**

- 1 Chiller - 80 Ton:  
 Cooling: Condensing Unit, Capacity 960 kBtu/h, Condenser Water-Cooled, Heat Rejection Equipment:  
 Centrifugal Fan Open-Circuit Cooling Tower  
 Proposed Efficiency: 21.10 EER (Refer to mech. plans for proposed IPLV),  
 Required Efficiency: 13.100 EER (13.10 IEER)

## Section 4: Requirements Checklist

*In the following requirements, blank checkboxes identify requirements that the applicant has not acknowledged as being met. Checkmarks identify requirements that the applicant acknowledges are met or excepted from compliance. 'Plans reference page/section' identifies where in the plans/specs the requirement can be verified as being satisfied.*

### Requirements Specific To: Chiller - 80 Ton :

- ✓ 1. Equipment meets minimum efficiency: Condensing Unit: 13.100 EER (13.10 IEER)
- ✓ 2. Complex Systems. Mechanical systems not covered by section 503.3 comply to sections 503.4.1 - 503.4.6.  
 Plans reference page/section: \_\_\_\_\_
- ✓ 3. Supply air economizers are provided on each cooling system and are capable of providing 100-percent outdoor air, even if additional mechanical cooling is required to meet the cooling load of the building.  
 Plans reference page/section: No airside systems
- ✓ 4. Variable air volume fan control. Individual VAV fans with motors of 10 hp or greater are driven/controlled in the manner specified by this section.  
 Plans reference page/section: NA
- ✓ 5. Hydronic systems controls. The heating of fluids that have been previously mechanically cooled and the cooling of fluids that have been previously mechanically heated are limited in accordance with Sections 503.4.3.1 through 503.4.3.3.  
 Plans reference page/section: NA
- ✓ 6. Three-pipe system. Hydronic systems that use a common return system for both hot water and chilled water are not installed.  
 Plans reference page/section: NA

- ✓ 7. Two-pipe changeover system. Systems that use a common distribution system to supply both heated and chilled water are designed to allow a dead band between changeover from one mode to the other; are provided with controls that will allow operation in one mode for at least 4 hours before changing over to the other mode; and are provided with controls that allow heating and cooling supply temperatures at the changeover point.

Plans reference page/section: NA

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- ✓ 8. Hydronic (water loop) heat pump systems. Hydronic heat pump systems comply with Sections 503.4.3.3.1 through 503.4.3.3.3.

Plans reference page/section: NA

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- ✓ 9. Temperature dead band. Hydronic heat pumps connected to a common heat pump water loop with central devices for heat rejection and heat addition have controls that are capable of providing a heat pump water supply temperature dead band of at least 20°F between initiation of heat rejection and heat addition by the central devices.

Plans reference page/section: NA

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- ✓ 10. Part Load Controls. Hydronic systems supplying heated or chilled water to comfort conditioning systems include controls specified in the requirement details.

Plans reference page/section: NA DX system

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- ✓ 11. Heat rejection equipment fan speed control. Each fan powered by a motor of 7.5 hp or larger has the capability to operate that fan at two-thirds of full speed or less, and has controls that automatically change the fan speed.

Plans reference page/section: NA

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- ✓ 12. Requirements For Complex Mechanical Systems Serving Multiple Zones.

Complex systems serving multiple zones comply with Sections 503.4.5.1 through 503.4.5.4. Additionally, supply air systems serving multiple zones are VAV systems which are designed and capable of being controlled to reduce primary air supply to each zone, the volume of air that is reheated/recooled/mixed in peak heating demand, and modulate airflow between deadband and full heating/cooling.

Plans reference page/section: NA

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- ✓ 13. Single duct variable air volume (VAV) systems, terminal devices. Single duct VAV systems use terminal devices capable of reducing the supply of primary supply air before reheating or recooling takes place.

Plans reference page/section: NA

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- ✓ 14. Dual duct and mixing VAV systems, terminal devices. Systems that have one warm air duct and one cool air duct use terminal devices which reduce the flow from one duct to a minimum before mixing of air from the other duct takes place.

Plans reference page/section: NA

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- ✓ 15. Supply-air temperature reset controls. HVAC systems serving multiple zones, including Dedicated Outside Air Systems include controls that automatically reset the supply-air temperature in response to representative building loads, or to outdoor air temperature.

Plans reference page/section: NA

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- ✓ 16. Heat Rejection Equipment: Minimum Efficiency Requirement  $\geq 20.0$  gpm/hp

**Generic Requirements: Must be met by all systems to which the requirement is applicable:**

- ✓ 1. HVAC Equipment Performance Requirements. Reported efficiencies have been tested and rated in accordance with the applicable test procedure. The efficiency has been verified through certification under an approved certification program or, if no certification program exists, the equipment efficiency ratings are supported by data furnished by the manufacturer.
- ✓ 2. Set point overlap restriction. Where used to control both heating and cooling, zone thermostatic controls provide a temperature range or deadband of at least 5°F (2.8°C) within which the supply of heating and cooling energy to the zone is capable of being shut off or reduced to a minimum.

Plans reference page/section: NA

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- ✓ 3. Optimum Start Controls. Each HVAC system has controls that vary the start-up time of the system to just meet the temperature set point at time of occupancy.

Plans reference page/section: NA

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- ✓ 4. Off-hour controls. Each zone is provided with thermostatic setback controls that are controlled by either an automatic time clock or programmable control system.

Plans reference page/section: NA

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- ✓ 5. Kitchen hoods. Kitchen makeup is provided as required by the Oregon Mechanical Specialty Code.

Plans reference page/section: NA

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- ✓ 6. Manuals. The construction documents require that an operating and maintenance manual be provided to the building owner by the mechanical contractor. See long description for specifications.

Plans reference page/section: Specifications

- ✓ 7. Allowable fan floor horsepower. Each HVAC system at fan system design conditions does not exceed the allowable fan system motor nameplate hp (Option 1) or fan system bhp (Option 2) as shown and calculated in requirement details.

Plans reference page/section: NA

- ✓ 8. All air-conditioning equipment and air-handling units with direct expansion cooling and a cooling capacity at ARI conditions greater than or equal to 110,000 Btu/h that serve single zones have their supply fan operation controlled according to code specific requirements.

Plans reference page/section: NA

## Section 5: Compliance Statement

*Compliance Statement:* The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical alteration project has been designed to meet the 2014 Oregon Energy Efficiency Specialty Code, Chapter 8, requirements in COMcheck Version 4.0.7.1 and to comply with the mandatory requirements in the Requirements Checklist.

Adam

\_\_\_\_\_  
Name - Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Section 6: Post Construction Compliance Statement

- HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.
- HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.
- Written HVAC balancing and operations report provided to the owner.

The above post construction requirements have been completed.

\_\_\_\_\_  
Principal Mechanical Designer-Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# Oregon State University Pharmacy Building Chiller Replacement Corvallis, Oregon

OWNER	ENGINEER
OREGON STATE UNIVERSITY CAPITAL PLANNING AND DEVELOPMENT OAK CREEK BUILDING 3015 SW WESTERN BLVD CORVALLIS, OR 541-727-5412	COLEBREIT ENGINEERING 1220 NW KINGS BLVD CORVALLIS OR 541-728-3293

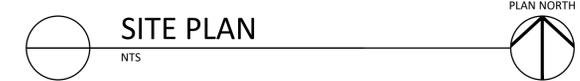
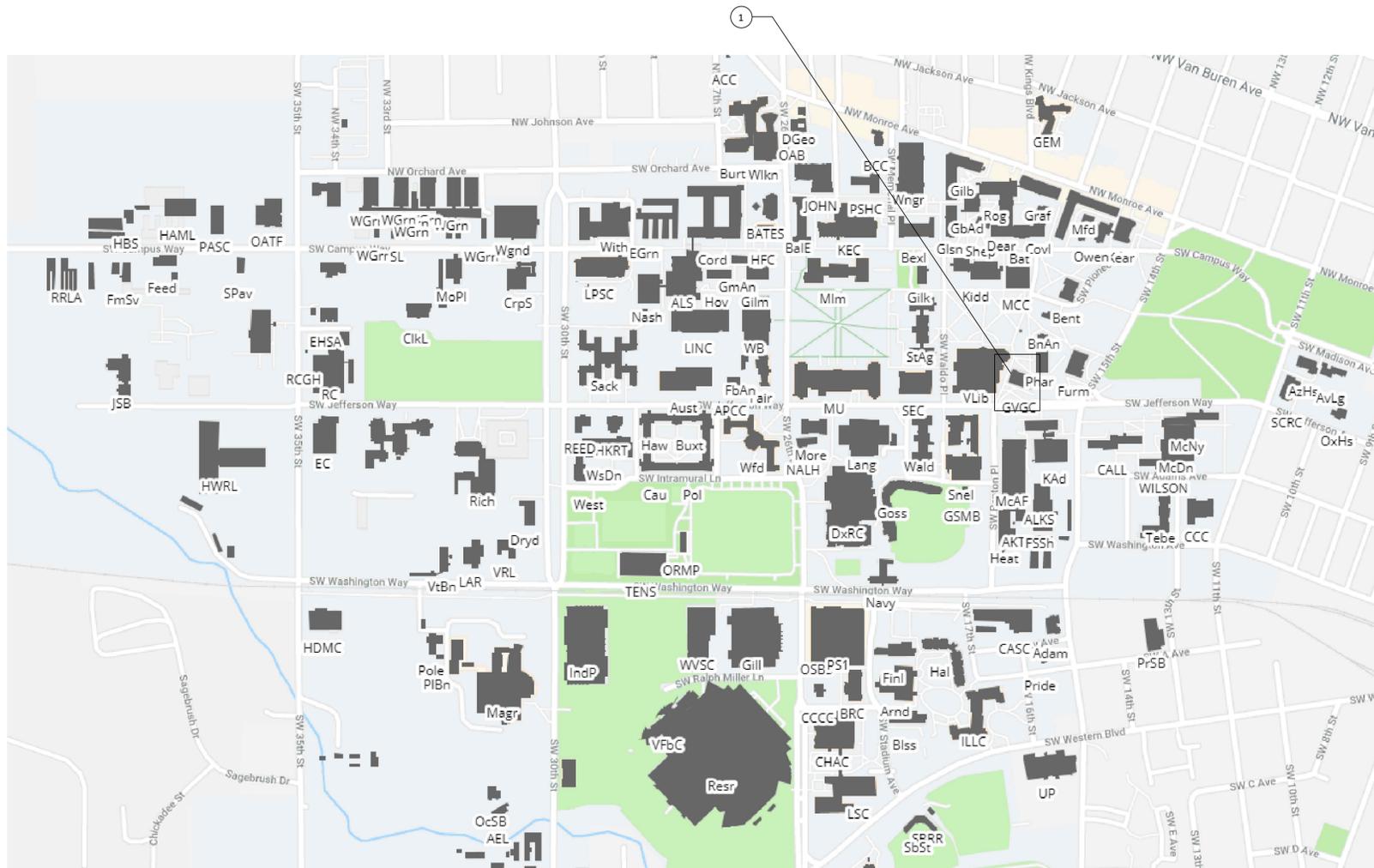


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**OSU PHARMACY  
CHILLER**  
1601 SW JEFFERSON WAY  
CORVALLIS, OREGON

## SHEET NOTES: #

1. PROJECT LOCATION



SHEET KEY	
SHEET NUMBER	SHEET NAME
G-001	COVER SHEET
M-001	LEGEND AND SCHEDULES
M-101	DEMO PLAN AND HVAC PLAN
M-601	CHILLED WATER SCHEMATIC

ISSUED:	DATE:
PERMIT SET	10/03/2018

JOB NUMBER:	186.002
DRAWN BY:	PHN
CHECKED BY:	AB

SHEET TITLE  
COVER SHEET

SHEET NUMBER  
**G-001**

MECHANICAL LEGEND		
	HCH	ELBOW DOWN
	HCH	ELBOW DOWN
	HCH	ELBOW UP
		TEE, BRANCH DOWN
		TEE, BRANCH UP
		POINT OF CONNECTION
		FLANGED CONNECTION
	FM	FLOW METER
		ISOLATOR, VIBRATION
		PIPE CAP
		PUMP, CENTRIFUGAL
		REDUCER, CONCENTRIC
		STRAINER WITH VALVE
		THERMOWELL
		UNION, THREADED
		VALVE, BUTTERFLY
		VALVE, GATE
		VALVE, PRESSURE RELIEF
		VALVE, SWING CHECK
		VALVE, BALL
		VALVE, BACK PRESSURE REGULATOR
		VALVE, MOTOR OPERATED
		VALVE, PLUG
		VENT, AIR
	TG	TEMPERATURE GAUGE
	PG	PRESSURE GAUGE
	2	SHEET NOTE
(A)		ABANDON IN PLACE
(E)		EXISTING
(N)		NEW
AHU		AIR HANDLING UNIT
AS		AIR SEPARATOR
BT		BUFFER TANK
ET		EXPANSION TANK
CF		CHEMICAL FEED SYSTEM
CH		CHILLER
P		PUMP
RS		REFRIGERANT SUCTION
RL		REFRIGERANT LIQUID

PIPING LEGEND		
SYMBOL	ABBRV.	IDENTIFICATION
	RLS	REFRIGERANT LINE SUCTION
	RLL	REFRIGERANT LINE LIQUID
	CWS	CONDENSER WATER SUPPLY
	CWR	CONDENSER WATER RETURN

**GENERAL NOTES:**

1. LOCATION AND ARRANGEMENT OF EXISTING PIPING, VALVES, AND EQUIPMENT IS APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION OF PIPING AND DIMENSIONS FOR INSTALLATION PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. MECHANICAL WORK INDICATED IS DIAGRAMMATIC, EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD TO AVOID CONFLICT WITH EXISTING SITE CONDITIONS.
3. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
4. PROTECT ALL EXISTING ADJACENT SURFACES, ELEMENTS AND FIXTURES SCHEDULED TO REMAIN FROM DAMAGE DUE TO DEMOLITION AND CONSTRUCTION PROCESSES. PATCH AND REPAIR TO PREVIOUS CONDITIONS.
5. PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN CHILLED WATER AND HOT WATER PIPING.
6. CONFORM TO OREGON STATE UNIVERSITY DESIGN STANDARDS INCLUDING FOR EQUIPMENT IDENTIFICATION AND INSTALLATION.

WATER COOLED CONDENSER												
MARK	TONS	CONDENSOR DATA					ELECTRICAL			WT LBS	MAKE & MODEL	REMARKS
		FLUID	EWT DEG. F	LWT DEG. F	GPM	PD FT	V/PH	MCA	MOCP			
CH-1	80	WATER	80	95	153	8.0	460/3	120	175	3000	MULTISTACK MS080TC1H1W2AAF-134A	ALL APPLY

- NOTES:
1. MAGLEV COMPRESSOR
  2. R134A REFRIGERANT
  3. PROVIDE SINGLE POINT POWER CONNECTION AND LOCAL MAIN POWER DISCONNECT.
  4. PROVIDE RESTRAINED SPRING ISOLATORS
  5. INTERNAL CONTROLS WITH BACNET EXTERNAL COMPATABILITY

PUMPS										
MARK	SERVICE	FLUID	GPM	PD FT	MOTOR DATA				MAKE & MODEL	REMARKS
					HP	BHP	RPM	V/PH		
P-1	CONDENSER WATER	WATER	153	55	3	2.5	1750	460/3	B&G e-1510 2BD	ALL APPLY

- NOTES:
1. MOUNT ON SPRING VIBRATION ISOLATORS

DX COOLING COIL											
MARK	TYPE	PERFORMANCE DATA							SUCTION TEMP	REMARKS	
		CFM	EAT DB/WB	LAT DB/WB	PD INWG	ROWS	HxL INCH	FV MAX FPM			REFRIG
CC-1	DX R-134a	22,000	96/67	55/54	0.5	6	(2) 48x55	600	R134A	38	ALL APPLY

- NOTES:
1. DX COIL TO REPLACE EXISTING CHILLED WATER COIL IN ASU-1.
  2. COIL DIMENSION ARE ESTIMATED. PRIOR TO CONSTRUCTION/PURCHASE, CONFIRM EXISTING ASU-1 COIL DIMENSIONS AND ROWS PRIOR TO ORDERING. MAXIMIZE COIL DIMENSIONS TO ACHIEVE 500 FPM AS ASU-1 CABINET SPACE ALLOWS. EXISTING COIL PULL CLEARANCE IS LIMITED, SINGLE COIL FULL WIDTH OF ASU-1 IS ACCEPTABLE IF IT CAN BE INSTALLED WITH SPACE ALLOWED.



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ISSUED:	DATE:
PERMIT SET	10/03/2018

JOB NUMBER: 186.002

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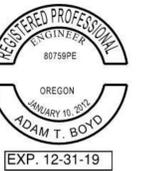
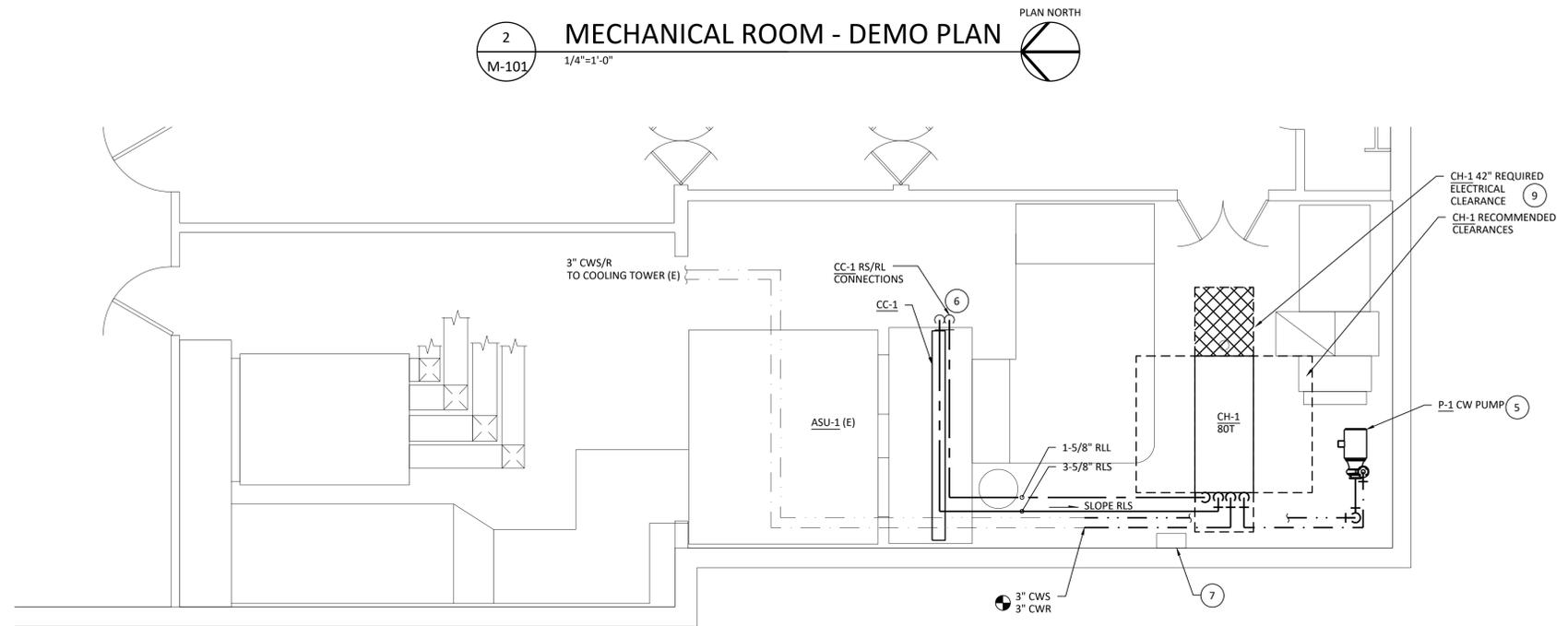
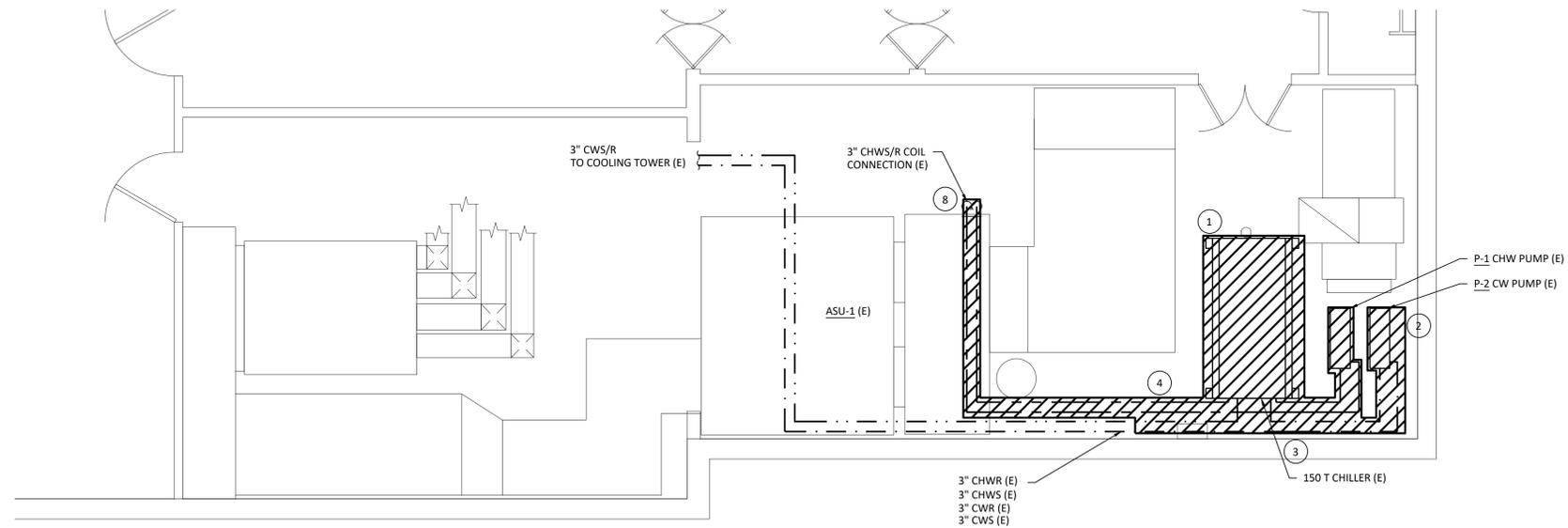
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SHEET TITLE  
LEGEND AND SCHEDULE

SHEET NUMBER  
**M-001**

**SHEET NOTES:** #

1. DEMOLISH EXISTING CHILLER, INERTIA BASE AND SPRING ISOLATORS. REMOVE CONNECTING PIPING TO EXTENT REQUIRED FOR NEW WORK.
2. DEMOLISH EXISTING P-1 CHILLED WATER PUMP AND P-2 CONDENSER WATER PUMP.
3. DEMOLISH CONDENSER WATER PIPING TO EXTENT SHOWN TO ACCOMMODATE NEW PUMP INSTALLATION.
4. DEMOLISH CHILLED WATER PIPING TO THE ASU-1 COIL, INCLUDING REMOVAL OF 3-WAY CONTROL VALVE, CHEM FEED TANK, WATER FILTERS, EXPANSION TANK AND MAKEUP WATER.
5. SEE CHILLER PIPING SCHEMATIC ON M-601 FOR PIPING DETAILS.
6. CONNECT REFRIGERANT PIPING TO NEW DX COIL IN ASU-1.
7. MAINTAIN ELECTRICAL CLEARANCES OF ELECTRICAL DISCONNECTS.
8. DEMOLISH EXISTING CHILLED WATER COOLING COIL IN ASU-1.
9. SPACE IN MECHANICAL ROOM IS LIMITED. MAINTAIN ALL CODE REQUIRED ELECTRICAL CLEARANCES AND MANDATORY CLEARANCE FROM THE MANUFACTURER. PROVIDE RECOMMENDED CLEARANCES AS ALLOWED BY SPACE LIMITATIONS.



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**OSU PHARMACY**  
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1601 SW JEFFERSON WAY  
CORVALLIS, OREGON

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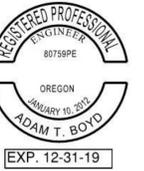
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SHEET TITLE

DEMO PLAN  
AND HVAC PLAN

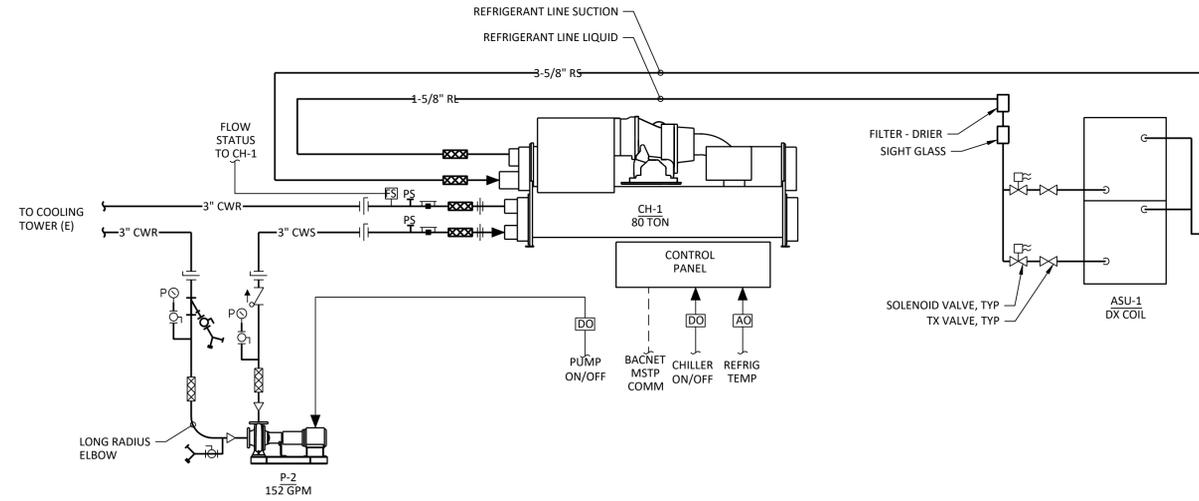
SHEET NUMBER

**M-101**



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**OSU PHARMACY**  
**CHILLER**  
1601 SW JEFFERSON WAY  
CORVALLIS, OREGON



1 CHILLER PIPING SCHEMATIC  
M-601 NTS

SEQUENCE OF OPERATIONS

1. SYSTEM DESCRIPTION: CHILLER CH-1 PROVIDES COOLING TO AIR SUPPLY UNIT ASU-1 DX COOLING COIL. PUMP P-1 CIRCULATES CONDENSER WATER TO CH-1 FROM EXISTING COOLING TOWER LOCATED ON THE ROOF. NEW EQUIPMENT SHALL BE INTEGRATED WITH EXISTING EQUIPMENT AND CONTROLS WITHOUT ALTERING THE CONTROL SEQUENCES OF THE EXISTING EQUIPMENT.
2. CONTROLS CONNECT TO EXISTING BUILDING DIRECT DIGITAL CONTROL (DDC) SYSTEM. PACKAGED CHILLER CONTROL PANEL CONTROLS THE INTERNAL SEQUENCES OF THE CHILLER. CHILLER CONTROLS SHALL BE BACNET COMPATIBLE TO INTERFACE WITH BUILDING DDC SYSTEM.
3. COOLING: UPON CALL FOR COOLING FROM ASU-1, CH-1 AND P-1 SHALL BE ENABLED. UPON RECEIVING CALL FOR COOLING AND PROOF OF CONDENSER WATER FLOW IS PROVED FROM CW FLOW SWITCH, THE CHILLER SHALL START. IN COOLING MODE, CHILLER SHALL MODULATE COMPRESSOR PER INTERNAL CONTROL SEQUENCES TO MAINTAIN COOLING REFRIGERANT TEMPERATURE TO ASU-1 COOLING COIL. CHILLER SHALL BE CONFIGURED FOR MINIMUM RUN TIME TO PREVENT SHORT CYCLING. EXISTING COOLING TOWER SHALL OPERATE ACCORDING TO EXISTING CONTROLS SEQUENCES TO MAINTAIN MAXIMUM 80 DEGREE (ADJUSTABLE) CONDENSER WATER TEMPERATURE.
4. ALARMS: ANY CHILLER CONTROLS FAILURE ALARM SHALL ALARM TO THE MAIN DDC SYSTEM.

ISSUED:	DATE:
PERMIT SET	10/03/2018

JOB NUMBER: 186.002

DRAWN BY: ATB

CHECKED BY: LJB

SHEET TITLE  
CHILLED WATER PIPING  
AND CONTROLS  
SCHEMATIC

SHEET NUMBER

**M-601**