



Oregon State University

INVITATION TO BID (ITB) #2020-001131

PHARMACY CLASSROOM 305 HVAC UPGRADE

ISSUE DATE: September 27, 2019

MANDATORY PRE-BID CONFERENCE: October 7, 2019 at
2:30 PM Pacific Time (PT) in Room 305 of the Pharmacy
Building at 1601 SW Jefferson Avenue, Corvallis, OR
97331.

BID DUE DATE/TIME: October 17, 2019 at 2:00 PM
Pacific Time (PT) at Construction Contracts
Administration (Front Office) 644 SW 13th St., Corvallis,
OR 97333

**Front Office is closed daily from noon to 1:00 PM.

PROJECT NUMBER: 2159-19

CONTRACT ADMINISTRATOR:

Matt Hausman, Construction Contracts Officer
Construction Contracts Administration
Oregon State University
644 SW 13th St.
Corvallis, OR 97333
Phone: (541) 737-3401

Email: ConstructionContracts@oregonstate.edu

AWARD DECISION APPEALS:

Hanna Emerson, Construction Contracts Manager
Construction Contracts Administration
Oregon State University
644 SW 13th St.
Corvallis, OR 97333
Phone: (541) 737-7694

Email: hanna.emerson@oregonstate.edu

OSU standards and policies govern this solicitation ([Procurement Thresholds and Methods](#), [Procurement Solicitations and Contracts](#)) unless otherwise referenced or stated.

1.0 INTRODUCTION

1.1 Background. Founded in 1868 as Oregon’s land grant institution, Oregon State University (OSU) serves the state, the nation and the world as a premier 21st-century research university. OSU is committed to exceptional research, discovery, innovation and engagement — and to integrating its research and engagement mission with the delivery of a high-quality, globally relevant and affordable education for the people of Oregon and beyond. OSU is one of only two land, sea, space and sun grant universities in the U.S. and is the only university in Oregon to have earned both Carnegie Classifications for Very High Research Activity and Community Engagement.

The university’s 570-acre main campus is located in the city of Corvallis, a vibrant college town of nearly 58,000 in the heart of Western Oregon’s Willamette Valley. Corvallis consistently ranks among the safest, most highly educated and greenest small cities in the nation.

1.2 Location. The Pharmacy Building was built in 1924 exclusively for the College of Pharmacy, its second floor originally included a model drug store. Prior to the completion of this building, Pharmacy was housed in Alpha Hall, a building that used to be on the land where Gilkey Hall now sits. Pharmacy can trace its beginnings to 1898 when chemistry and pharmacy were a single department. In 1966, an addition was completed nearly doubling the size of the building and allowing for additional research programs and a new curriculum.

1.3 Summary of Work. The Work consists of the following:

Contractor to furnish and install a new DX Air Conditioning (AC) Unit on the roof of the Pharmacy Building to provide cooling for Classroom 305. Contractor to perform all structural work, roofing, interior finishes, ductwork and electrical work.

2.0 SCHEDULE

Solicitation Issue Date	September 27, 2019
Mandatory Pre-Bid Meeting/Site Visit	October 7, 2019 at 2:30 PM Pacific Time (PT)
Question Deadline	October 11, 2019 at 5:00 PM Pacific Time (PT)
Solicitation Revision Request Deadline	October 11, 2019 at 5:00 PM Pacific Time (PT)
Final Addendum Deadline (if necessary)	October 14, 2019
Bid Due Date/Time	October 17, 2019 at 2:00 PM Pacific Time (PT)

The following dates are tentative and subject to change without notice:

Notice of Intent to Award	October 21, 2019
Estimated Contract Execution	November 4, 2019
Estimated Notice to Proceed	November 4, 2019
Estimated Substantial Completion	August 28, 2020
Estimated Final Completion	September 4, 2020

3.0 QUESTIONS, SOLICITATION REVISION REQUESTS, CHANGE OR MODIFICATION

3.1 Questions

3.1.1 If a Bidder is unclear about any information contained in this document or its exhibits (Project, scope, agreement terms, etc.), they may submit those questions for formal clarification to the **Contract Administrator** at any time prior to the Question Deadline listed in Section 2.0 of this ITB.

3.1.2 All questions and contacts with Owner regarding any information in this ITB must be addressed either in writing or email to the **Contract Administrator**, unless otherwise stated in this ITB document at the address or email listed in this document no later than the Question Deadline listed in Section 2.0 of this ITB.

3.1.3 Any clarification provided by the Owner for this ITB or the documents included as exhibits to this ITB shall be made by a duly issued Addendum. The Owner will not be responsible for any other explanation or interpretation of this ITB or the documents included as exhibits to this ITB nor for any other approval of a particular manufacturer's process or item.

3.2 Solicitation Revision Requests

3.2.1 Bidders may submit a written request for change of particular solicitation provisions and/or contract terms and conditions to Hanna Emerson, Construction Contracts Manager at the address or email listed in this document. Such requests for change shall be received no later than the Solicitation Revision Deadline listed above.

3.2.2 Such requests for change shall include the reasons for the request and any proposed changes to the solicitation provisions, specifications and/or contract terms and conditions.

3.2.3 Requests for contract terms and conditions revisions may not be considered if request(s) are not received by the Solicitation Revision Deadline.

3.3 Change or Modification

3.3.1 Any change or modification to the specifications or particular solicitation provisions will be in the form of an addendum to the ITB and will be made available to all firms. No information received in any manner different than as described herein shall serve to change the ITB in any way, regardless of the source of the information.

4.0 PUBLIC RECORD

Owner will retain this ITB and one copy of each bid received, together with copies of all documents pertaining to the award of a contract. These documents will be made a part of a file or record, which shall be open to public inspection after Owner has announced its intent to award a contract. If a bid contains any information that is considered a trade secret under ORS 192.345(2), you must mark each trade secret with the following legend: **"This data constitutes a trade secret under ORS 192.345(2), and shall not be disclosed except in accordance with the Oregon Public Records Law, ORS Chapter 192."**

The Oregon Public Records Law exempts from disclosure only bona fide trade secrets, and the exemption from disclosure applies only "unless the public interest requires disclosure in the particular instance."

Therefore, non-disclosure of documents or any portion of a document submitted as part of a proposal may depend upon official or judicial determination made pursuant to the Public Records Law.

In order to facilitate public inspection of the non-confidential portion of the proposal, material designated as confidential shall accompany the proposal, but shall be readily separable from it. Prices, makes, model or catalog numbers of items offered, scheduled delivery dates, and terms of payment shall be publicly available regardless of any designation to the contrary. Any proposal marked as a trade secret in its entirety shall be considered non-responsive and shall be rejected.

5.0 FORM OF AGREEMENT

A sample copy of the standard Reserve Supplement is included as an exhibit. The sample contract may contain certain notes or alternative provisions. Those alternative provisions will be included at the sole discretion of the Owner.

6.0 BUREAU OF LABOR AND INDUSTRIES (BOLI) PREVAILING WAGES

In compliance with Oregon Prevailing Wage Law, the following is incorporated into this ITB:

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

- 6.1** July 1, 2019 PWR Apprenticeship Rates
- 6.2** July 1, 2019 Prevailing Wage Rates for Public Works Contracts in Oregon
- 6.3** July 1, 2018 Definitions of Covered Occupations for Public Works Contracts in Oregon

These BOLI wage rates are available here: https://www.oregon.gov/boli/WHD/PWR/Pages/pwr_state.aspx.

7.0 INSTRUCTIONS TO BIDDERS

7.1 Summary of Work. The Work contemplated in this document shall be for the Owner in connection with the Project described in the Summary of Work in Section 1.0 of this document.

7.2 Pre Bid Conference and Examination of Site Conditions

7.2.1 Before submitting a Bid, if required by this ITB, the Bidder shall attend the mandatory Pre-Bid Conference, which may include a site examination. Attendance will be documented through a sign-in sheet prepared by the Owner. Prime bidders who arrive more than five (5) minutes after start time of the meeting (as stated in the ITB and by the Owner's clock) 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.

7.2.2 In any event, the Bidder shall examine the Work site to ascertain its physical condition. 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 and conditions of the Contract Documents.

7.2.3 The Bidder shall be responsible for being fully informed as to the quality, quantity and sources of supply of the materials listed within the documents included as exhibits to this ITB.

7.2.4 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.

7.2.5 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 documents included as exhibits to this ITB or an Addendum.

7.3 **Brand-Name Specification.** To establish a basis of quality, certain processes, types of machinery and equipment or kinds of materials may be specified in the documents included as exhibits to this ITB 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 name, brand or item designation is 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.

7.4 **Substitution Approval Process**

7.4.1 Prior to submitting a Bid that contains a Substitution, the Bidder must first seek approval of the Substitution from the Owner by submitting a written request to the **Contract Administrator** for approval prior to the deadline for questions as stated in this Solicitation.

7.4.2 Substitution requests shall be submitted in accordance with Division 01 requirements.

7.4.3 Only approved Substitution requests will be acknowledged via Addendum(a) to this ITB and shall become a part of the documents included as exhibits to this ITB. When approved, it is with the understanding that the substituted article or material is of equal or better value and utility than the one specified.

7.5 **Execution of the Bid Form**

7.5.1 The Bid Form is hereby defined as the OSU form furnished by Owner to be completed by Bidder.

7.5.2 The Bid Form relates to Bids on this ITB. Only the amounts and information asked for on the Bid Form 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 documents included as exhibits to this ITB. Bids that fail to address alternates set forth on the Bid Form may be considered non-responsive.

7.5.3 Each Bid Form must: 1) Be completed in accordance with these instructions; 2) Include the appropriate signatures as noted on the Bid Form; and 3) Include numbers pertaining to the Base Bid(s) stated both in writing and in figures.

7.5.4 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."

7.5.5 When Bidding on unit prices, quantities stated on the Bid Form are estimates and are included for the purpose of award of a Contract. In the event of a discrepancy between unit prices and extensions, the unit price shall govern.

7.5.6 Incomplete Bids may be rejected.

7.5.7 Bids that contain conditions not provided for on the Bid Form may be rejected.

7.5.8 Bids that contain ambiguities may be rejected.

7.5.9 With the exception of filling in the required fields on the Bid Form, no other alterations to the Bid Form shall be made.

7.6 **Submission of Bid.** Each Bid shall be sealed in an envelope, properly addressed to the **Contract Administrator**, showing on the outside of the envelope the name of the Bidder and the name of the project. Bids must be received at the time and place stated in this ITB.

7.7 **Bid Closing and Opening of Bids**

7.7.1 All Bids must be received by the Owner before the Closing Date and Time. The Owner's official clock shall prevail in any time conflict. Any Bid received after the Closing Date and Time will be rejected, and will be retained and part of the Owner's archive records in accordance with OSU Standards.

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

7.8 **Acceptance or Rejection of Bids by Owner**

7.8.1 The procedures for Contract awards shall be in compliance with the provisions of OSU standards and policies adopted by the Owner.

7.8.2 The Owner reserves the right to reject any or all Bids and to waive minor informalities.

7.8.3 Unless all Bids are rejected, the Owner will award the Contract(s) based on the lowest responsive Bid from a responsible Bidder. If that Bidder does not execute the Contract(s), the Contract(s) will be awarded to the next lowest responsive Bid from a responsible Bidder or Bidders in succession, provided this ITB is not cancelled under the provisions of OSU standards and policies adopted by the Owner.

7.8.4 The Owner reserves the right to hold the Bid of the three lowest Bidders for a period of sixty (60) Days from the time of Bid opening pending Award of the Contract.

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

7.8.5.1 When alternates are included on the Bid Form, they may be exercised at the sole discretion of the Owner within sixty (60) Days of the Effective Date of the Contract, unless extended by written mutual agreement of the Parties.

7.8.5.2 The Owner has the right to accept alternates without regard to order or sequence; but, such acceptance must not deliberately impair the selection of a low, responsible and responsive Bidder to whom the Contract would be awarded under an equitable bid procedure.

7.8.6 If Owner has not accepted a Bid within sixty (60) Days after the opening of the Bids, each of the three lowest Bidders may withdraw the Bid submitted.

7.9 Withdrawal of Bid

7.9.1 At any time prior to the Closing Date and Time a Bidder may withdraw its Bid in accordance with OSU Standards. This will not preclude the submission of another Bid by such Bidder prior to the Closing Date and Time.

7.9.2 After the Closing Date and Time, Bidders are prohibited from withdrawing their Bid, except as provided by OSU Standards.

7.10 Execution of Contract, Agreement, Performance Bond and Payment Bond

7.10.1 The Bidder shall be required to execute the Contract as provided, and, if applicable, deliver a Performance Bond and a Payment Bond from a surety company licensed to do surety business in the State of Oregon within time period contained in the Award letter. The Contract Documents shall be delivered to the Owner in the manner stated in the Award letter.

7.11 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 Bid as non-responsive.

7.12 Equity Contracting. Owner will require the successful Contractor to comply with OSU Standards, policies, rules and procedures requiring good faith efforts in subcontracting with minority, women, emerging small business or service-disabled veteran owned business enterprises.

8.0 SUPPLEMENTAL INSTRUCTIONS TO BIDDERS - RESERVED

9.0 EXHIBITS

Exhibit A – Bid Form

Exhibit B – Sample OSU Public Improvement Contract

Exhibit C – General Conditions for Public Improvement Contracts

Exhibit D – Supplemental General Conditions for Public Improvement Contracts

Exhibit E – Performance Bond, Payment Bond

Exhibit F – MWESB Project Contract Report Instructions and Report

Exhibit G – Specifications dated 9/9/2019

Exhibit H – Drawings, stamped by ColeBreit Engineering, dated 9/9/2019

Exhibit I – Asbestos Report

Exhibit J – Addenda (if and when applicable)

End of ITB

EXHIBIT A



Oregon State University

BID FORM

ITB NUMBER & NAME: ITB 2020-001131 – PHARMACY CLASSROOM 305 HVAC UPGRADE

BID DUE DATE AND TIME: _____
(fill in)

FROM: _____
(Name of Contractor)

TO: Oregon State University (“Owner”)
Construction Contracts Administration
644 SW 13th St.
Corvallis, Oregon 97333

1. The Undersigned 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 Base Bid as follows:

_____ Dollars (\$ _____)

and the Undersigned agrees to be bound by the documents either contained in or incorporated by reference in the Invitation to Bid and ADDENDA numbered ____ through____, inclusive. (fill in blanks)

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 Bid security furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

4. 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 wages.

5. Contractor's CCB license number is _____. As a condition to submitting a Bid, Contractor must be licensed with the Oregon Construction Contractors Board in accordance with ORS 701.021 to 701.128, and disclose the license number. Failure to be licensed and disclose the number will render the Bid unresponsive and it will be rejected, unless contrary to federal law.

6. The Bidder hereby certifies that all subcontractors who perform construction work as described in ORS 701.005(5) are licensed with the Construction Contractors Board in accordance with ORS 701.021 to 701.128 at the time the Bid is submitted.

7. Contractor’s Project Manager for this project is: _____

Email: _____ Cell Phone: _____.

8. The Undersigned agrees, if awarded the Contract, to deliver to Owner, 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: _____

SIGNATURE: _____

Authorized Signature

Printed Name

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

EXHIBIT B

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. Minimum Wage Rates

Prevailing Wage Rates requirements apply to this Project. Contractor and all subcontractors shall comply with the provisions of ORS 279C.800 through 279C.870, relative to Prevailing Wage Rates and the required public works bond, as outlined in Sections C.1, C.2 and G.2.3 of the General Conditions. The Bureau of

Labor and Industries (BOLI) wage rates and requirements set forth in the following BOLI booklet (and any listed amendments to that booklet), which are incorporated herein by reference, apply to the Work authorized under this Supplement:

PREVAILING WAGE RATES for Public Works Contracts in Oregon, July 1, 2019, which can be downloaded at the following web address:

[\[http://www.boli.state.or.us/BOLI/WHD/PWR/pwr_book.shtml\]](http://www.boli.state.or.us/BOLI/WHD/PWR/pwr_book.shtml)

The Work will take place in Benton County, Oregon.

5. 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

EXHIBIT C

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.

- 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

ORS 671.560.

- 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)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.

EXHIBIT D

OREGON STATE UNIVERSITY

SUPPLEMENTAL GENERAL CONDITIONS

To The

PUBLIC IMPROVEMENT GENERAL CONDITIONS

Project Name: PHARMACY CLASSROOM 305 HVAC UPGRADE

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."

EXHIBIT E

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

EXHIBIT F

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.

EXHIBIT G

SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY OF WORK

- A. The Work Contract consists of the following:

Contractor to furnish and install a new DX Air Conditioning (AC) Unit on the roof of the Pharmacy Building to provide cooling for Classroom 305. Contractor to perform all structural work, roofing, interior finishes, ductwork and electrical work.

- B. Work shall be started within ten (10) calendar days 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 substantially complete by August 28, 2020.

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 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 (see below), 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. 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.
- C. Submit one (1) copy of forms requesting payment to the Owner.
- D. Payments will be made on protected materials on hand at the job site properly stored,

protected, and insured.

- E. 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: University Financial Services
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: _____

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 _____

For use by Design Consultant:

Accepted Accepted as noted

Not Accepted Received too late

By _____

Date _____

Remarks _____

Attachments:

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

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

CWT	ceramic wall tile	EXH	exhaust
CY	cubic yard	EXP	exposed
		EXT	exterior
D	depth	FA	fire alarm
DEMO	demolish, demolition	FAF	fluid applied flooring
DEP	depressed	FARF	fluid applied resilient floor
DF	drinking fountain	FAS	fasten, fastener
DIA	diameter	FBD	fiberboard
DIAG	diagonal	FBT	finished blowing temperature
DIM	dimension	FD	floor drain, fire damper
DISP	dispenser	FE	fire extinguisher
DIV	division	FEC	fire extinguisher cabinet
DL	dead load	FF	factory finish
DMT	demountable	FGL	fiberglass
DN	down	FHMS	flathead machine screw
DP	dampproofing	FHWS	flathead wood screw
DR	door	FIN	finish(ed)
DS	downspout	FLCO	floor cleanout
DT	drain tile	FLR	floor(ing)
DTL	detail	FLUR	fluorescent
DW	dumbwaiter	FND	foundation
DWG	drawing(s)	FOC	face of concrete
DWR	drawer	FOIC	furnished by owner/installed by contractor
EA	each	FOIO	furnished by owner/installed by owner
EB	expansion bolt	FOM	face of masonry
EF	each face	FP	fireproofing, flash point
EJ	expansion joint	FPHB	freeze-proof hose bib
EL	elevation	FR	fire resistive, fire rated
ELEC	electric(al)	FRM	frame(d), (ing)
EMBED	embedment	FS	full size
EMER	emergency	FSS	finished structural slab
ENCL	enclose(ure)	FT	foot
EP	electrical panel board	FTG	footing
EQ	equal	FTS	finished topping slab
EQUIP	equipment		
EST	estimate	GA	gage, gauge
EVT	equiviscious temperature	GALV	galvanized
EW	each way	GB	grab bar or gypsum board
EWC	electric water cooler		
EX.EXIT	existing		

GC	general contractor	LAM	laminated
GI	galvanized iron	LAV	lavatory
GL	glass, glazing	LBS	pounds
GLS	glass resin wall surfacing		
GP	gypsum	LH	left hand
		LL	live load
HB	hose bib	LONGIT	longitudinal
HBD	hardboard	LP	low point
HC	hollow core	LW	lightweight
HD	heavy duty		
HDR	header	MAX	maximum
HDW	hardware	MB	machine bolt
HM	hollow metal	M. MECH	mechanic(al)
HOR	horizontal	MFR	manufacture(r)
HP	high point	MH	manhole
HR	hour	Min	minimum, minute
HT	height	MISC	miscellaneous
HTG	heating	MO	masonry opening
HVAC	heating, ventilating, air conditioning	MO#	model number
		MOD	modular
HWD	hardwood	MPH	miles per hour
HWH	hot water heater	MS	machine screw
		MTL	metal
ID	inside diameter, identification	MULL	mullion
IN	inch	MWP	membrane waterproofing
INCIN	incinerator		
INCL	include(d), ion	NAT	natural, natural finish
INT	interior	NIC	not in contract
INV	invert	NO	number
		NOM	nominal
JB	junction box	NTS	not to scale
JC	janitor's closet		
JT	joint	OA	overall
		OBS	obscure
KD	kiln dried	OC	on center(s)
KCP	Keene's cement plaster	OD	outside diameter
KO	knockout	OF	overflow
KP	kick plate	OFCI	owner furnished contractor installed
		OFOI	owner furnished owner installed
LAB	laboratory	OHMS	ovalhead machine screw

OHWS	ovalhead wood screw		
OPG	opening	SC	solid core
OPP	opposite	SCHEM	schedule
OZ	ounce(s)	SEC	section
		SF	square feet (foot)
P	paint(ed)	SHT	sheet
PB	push button	SHTHG	sheathing
PCF	pounds per cubic foot	SIM	similar
PCP	putting coat plaster	SL	sleeve
PERF	perforate(d)	SOG	slab on grade
PL	plate, property line	SPEC	specification(s)
PLAM	plastic laminate	SQ	square
PLAS	plaster	SS	storm sewer
PNL	panel	S4S	finished 4 sides
PP	push plate	SD	storm drain
PR	pair	ST	steel, street
PREP	prepare	ST ST	stainless steel
PSF	pounds per square foot	STD	standard
PSI	pounds per square inch	STR	structural
PT	point, pressure treated	SUPP	supplement
PTN	partition	SUPT	support
PVC	polyvinyl chloride	SUSP	suspended
PWD	plywood	SV	sheet vinyl
QT	quarry tile	T	tread
		TBM	top bench mark
R	rise	T&G	tongue and groove
RA	return air	TB	towel bar
RAD	radius	TC	top of curb
RCP	reflected ceiling plan	TEL	telephone
RD	roof drain	TEMP	tempered
REF	reference	THK	thickness
REFR	refrigerator	TKBD	tackboard
REINF	reinforce(ing)	TO	top of
REQ	required	TP	top of paving
RET'G	retaining	TRANS	transverse
REV	revision(s), revised	TS	top of slab
RH	right had	TV	television
RM	room	TW	top of wall
RO	rough opening	TYP	typical
RSF	resilient sheet flooring		

UNO	unless noted otherwise	W/	with
VAT	vinyl asbestos tile	W/O	without
VB	vapor barrier	WC	water closet
VCT	Vinyl Composition Tile	WD	wood, wood finish
VERT	vertical	WP	waterproof(ing)
VG	vertical grain	WNS	wainscot
VIF	verify in field	WR	water resistant
VWC	vinyl wall covering	WS	waterstop
W	width, wide, water	WW	window wall
		WWC	wood wall covering
		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
λ	angle
@	at
ι	diameter, round
"	inches
:	is, shall b
'	feet
ζ	perpendicular
/	per
%	percent
#	pound, number
X	by (as in 2 by 4)

END OF SECTION

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

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

NFPA	National Fire Protection Association WWW.NFPA.ORG
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 http://www.bcd.oregon.gov/programs/online_codes.html
ORS	Oregon Revised Statutes LANDRU.LEG.STATE.OR.US/ORS/
OSHA	Occupational Safety and Health Administration WWW.OSHA.GOV
OSSC	Oregon Structural Specialty Code http://www.bcd.oregon.gov/programs/online_codes.html
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
UPC	Uniform Plumbing Code WWW.UBC.COM
WHL	Warnock Hersey Laboratories WWW.INTEK.COM/MARKS/WH/
WCLIB	West Coast Lumber Inspection Bureau WWW.WCLIB.ORG
WWPA	Western Wood Products Association WWW.WWPA.ORG

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

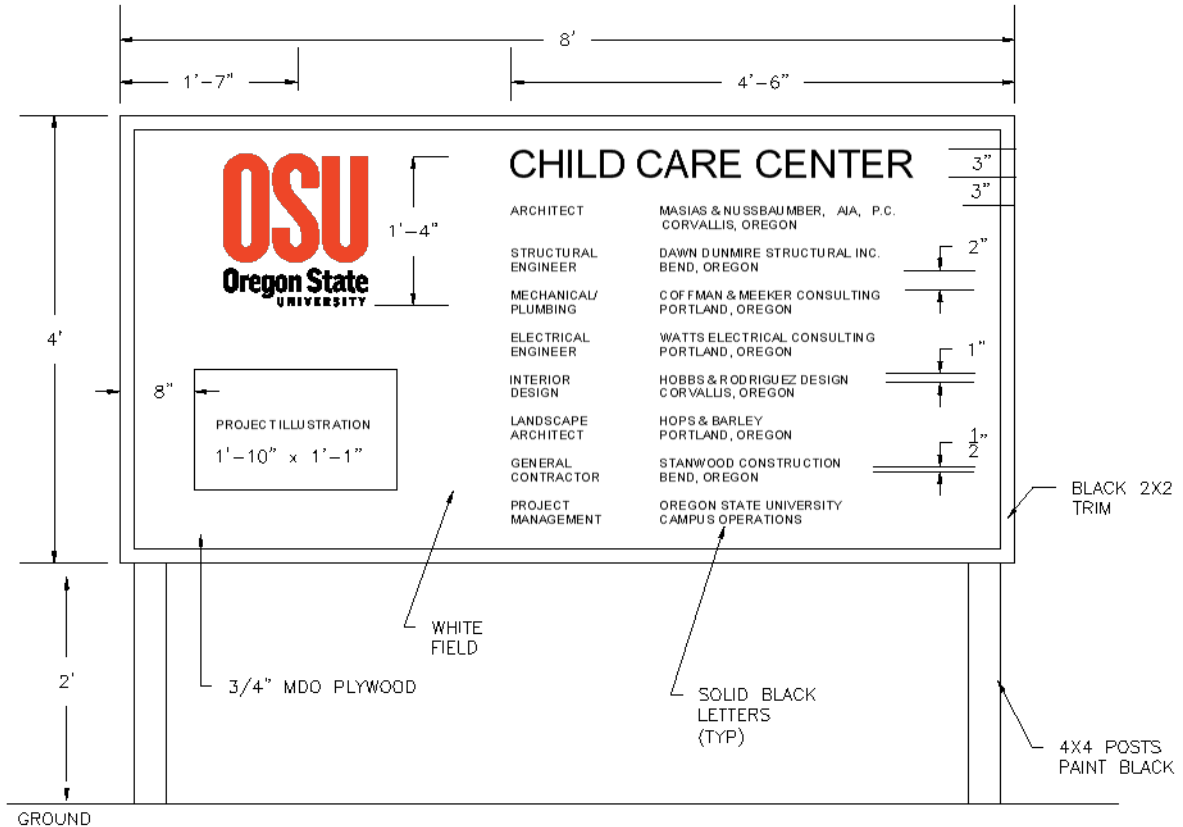
- A. Water Control:
 1. Maintain excavations free of water.
 2. Provide, operate, and maintain necessary pumping equipment.

- 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

Y	N	For This Project	If YES, then:
		1 Will any confined spaces be accessed?	Describe location of entry Specify location of permit Notify EH&S prior to entry See SAF 209
		2 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
		3 Any products brought to campus?	Provide MSDS on site prior to first use; Make available to OSU on request
		4 Will lead paint be impacted?	Describe plan to limit contamination
		5 Will asbestos-containing-material be impacted?	Coordinate with OSU asbestos manager
		6 Will <u>any</u> materials (construction debris, soil, water, etc) be removed from campus?	Describe in detail identity and disposition of material (how, where)
		7 Any open trenches or holes?	Describe isolation procedures (see Page 1)
		8 Will a crane be used?	Describe crane safety plan (include plan to prevent loads above occupied areas)
		9 Is this project building a new facility, a major remodel?	Provide Site Safety plan Describe isolation procedures (see Page 1)
		10 Is this a minor remodeling project?	Provide, or fill out model Site Safety Plan form (see Page 3) Describe isolation procedures (see Page 1)
		11 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)
		12 Will there be noise > 85 dB?	Describe noise minimization plan
		13 Will this project use a scaffold or an external chute?	Describe isolation, dust control, installation
		14 Will this project involve a working surface >6' above a lower level	Describe fall protection
		15 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

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. Draft 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**1.01 SECTION INCLUDES**

- A. Testing, adjustment, and balancing of air systems.

1.02 REFERENCE STANDARDS**1.03 SUBMITTALS**

- A. 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.
- B. 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****3.01 GENERAL REQUIREMENTS**

- A. Perform total system balance in accordance with one of the following:
- 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.

3.02 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. Final filters are clean and in place. If required, install temporary media in addition to final filters.
 - 4. Duct systems are clean of debris.

3.03 **ADJUSTMENT TOLERANCES**

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

3.04 **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.

3.05 **AIR SYSTEM PROCEDURE**

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.
- B. Measure air quantities at air inlets and outlets.
- C. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.
- D. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.

3.06 **SCOPE**

- A. Test, adjust, and balance the following:
 - 1. Packaged Roof Top Heating/Cooling Units.
 - 2. Air Inlets and Outlets.

END OF SECTION

**SECTION 230713
DUCT INSULATION****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Duct insulation.
- B. Duct liner.

1.02 RELATED REQUIREMENTS

- A. Section 233100 - HVAC Ducts and Casings: Glass fiber ducts.

1.03 REFERENCE STANDARDS

- A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2017.
- B. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications 2013.
- C. ASTM C916 - Standard Specification for Adhesives for Duct Thermal Insulation 2014.
- D. ASTM C1071 - Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material) 2019.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2018b.
- F. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015.
- G. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2005 (Revised 2009).
- H. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.04 SUBMITTALS

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

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site in original factory packaging, labelled with manufacturer's identification, including product density and thickness.
- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

PART 2 PRODUCTS**2.01 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.

2.02 GLASS FIBER, FLEXIBLE

- A. Manufacturer:
 - 1. Johns Manville: Microlite
 - 2. Owens Corning Corporation: FRK
 - 3. CertainTeed Corporation: Ductwrap

- B. Insulation: ASTM C553; flexible, noncombustible blanket.
 - 1. 'K' ('Ksi') value: 0.25 at 75 degrees F (0.036 at 24 degrees C), when tested in accordance with ASTM C518.
- C. Vapor Barrier Jacket:
 - 1. Kraft paper with glass fiber yarn and bonded to aluminized film.

2.03 **DUCT LINER**

- A. Note: Choose the liner type - Elastomeric Foam or Glass Fiber.
- B. Glass Fiber Insulation: Non-corrosive, incombustible glass fiber complying with ASTM C1071; flexible blanket, rigid board and preformed round liner board; impregnated surface and edges coated with poly vinyl acetate polymer, acrylic polymer or black composite.
 - 1. Fungal Resistance: No growth when tested according to ASTM G21.
 - 2. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F (0.045 at 24 degrees C).
 - 3. Service Temperature: Up to 250 degrees F (121 degrees C).
 - 4. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm (25.4 m/s), minimum.
 - 5. Minimum Noise Reduction Coefficients:
 - a. 1 inch (25 mm) Thickness: 0.45.
- C. Adhesive: Waterproof, fire-retardant type, ASTM C916.
- D. Liner Fasteners: Galvanized steel, self-adhesive pad with integral head.

PART 3 EXECUTION

3.01 **INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Duct and Plenum Liner Application:
 - 1. Adhere insulation with adhesive for 90 percent coverage.
 - 2. Secure insulation with mechanical liner fasteners. Refer to SMACNA (DCS) for spacing.
 - 3. Seal and smooth joints. Seal and coat transverse joints.
 - 4. Seal liner surface penetrations with adhesive.
 - 5. Duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.

3.02 **SCHEDULES**

- A. Supply and Return Ducts: 2 inches thick

END OF SECTION

**SECTION 233100
HVAC DUCTS AND CASINGS**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Metal ductwork.

1.02 RELATED REQUIREMENTS

- A. Section 230713 - Duct Insulation: External insulation and duct liner.
- B. Section 233700 - Air Outlets and Inlets.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2014.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2018.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2018b.
- D. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2005 (Revised 2009).
- E. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors current edition, including all revisions.

1.04 SUBMITTALS

- A. Product Data: Provide data for duct materials.

1.05 FIELD CONDITIONS

- A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
- B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS**2.01 DUCT ASSEMBLIES**

- A. Regulatory Requirements: Construct ductwork to comply with NFPA 90A standards.
- B. Ducts: Galvanized steel, unless otherwise indicated.
- C. Low Pressure Supply (System with Cooling Coils): 2 inch w.g. (500 Pa) pressure class, galvanized steel.
- D. Return and Relief: 1 inch w.g. (250 Pa) pressure class, galvanized steel.

2.02 MATERIALS

- A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.
- B. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
 - 1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
 - 2. VOC Content: Not more than 250 g/L, excluding water.
 - 3. Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.

- C. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

2.03 DUCTWORK FABRICATION

- A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.
- B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- C. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes of perforated metal with glass fiber insulation.
- D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- E. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

2.04 MANUFACTURED DUCTWORK AND FITTINGS

- A. Spiral Ducts: Round spiral lockseam duct with galvanized steel outer wall.
 - 1. Manufacture in accordance with SMACNA (DCS).
- B. Round Ducts: Round lockseam duct with galvanized steel outer wall.
 - 1. Manufacture in accordance with SMACNA (DCS).
- C. Flexible Ducts: UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire.
 - 1. Insulation: Fiberglass insulation with polyethylene vapor barrier film.
 - 2. Pressure Rating: 10 inches WG (2.50 kPa) positive and 1.0 inches WG (250 Pa) negative.
 - 3. Maximum Velocity: 4000 fpm (20.3 m/sec).
 - 4. Temperature Range: Minus 20 degrees F to 210 degrees F (Minus 28 degrees C to 99 degrees C).
 - 5. Manufacturers:
 - a. Hart & Cooley, Inc

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install, support, and seal ducts in accordance with SMACNA (DCS).
- B. Install in accordance with manufacturer's instructions.
- C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- D. Flexible Ducts: Connect to metal ducts with adhesive.
- E. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- F. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.

- G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- H. Connect diffusers or light troffer boots to low pressure ducts directly or with 5 feet (1.5 m) maximum length of flexible duct held in place with strap or clamp.

END OF SECTION

SECTION 237413
PACKAGED OUTDOOR CENTRAL-STATION AIR-HANDLING UNITS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Packaged roof top unit.
- B. Unit controls.
- C. Roof mounting curb and base.

1.02 REFERENCE STANDARDS

AHRI 340/360 Performance Rating of Commercial and Industrial Unitary Air-conditioning and Heat Pump Equipment

1.03 SUBMITTALS

- A. Product Data: Provide capacity and dimensions of manufactured products and assemblies required for this project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.
- B. Manufacturer's Instructions: Indicate assembly, support details, connection requirements, and include start-up instructions.
- C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.
- D. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from physical damage by storing off site until roof mounting curbs are in place, ready for immediate installation of units.

1.06 WARRANTY

- A. Provide a five year warranty to include coverage for refrigeration compressors.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Trane, a brand of Ingersoll Rand
- B. Carrier, a part of UTC Building and Industrial Systems, a unit of United Technologies Corp

2.02 PERFORMANCE REQUIREMENTS

- A. As Follows:
 - 1. Cooling Capacity:
 - a. Rated Cooling Output: 12 Tons: 144 MBh Total Cooling, 131 MBh Sensible Cooling.
 - b. Air Entering Evaporator Coil: 80 degrees F DB, 62 degrees F WB.
 - c. Condenser Ambient Air: 95 degrees F.
 - d. Energy Efficiency Ratio: Minimum 12.1.
 - e. Intergrated Part Load Value: Minimum 13.5

2. Supply Air:
 - a. Air flow: 4,000 CFM.
 - b. External Static Pressure: 0.75 inch WG.
3. Ventilation Air:
 - a. 1,540 CFM max

2.03 **MANUFACTURED UNITS**

- A. General: Roof mounted unit air conditioner.
- B. Description: Self-contained, packaged, factory assembled and prewired, consisting of cabinet and frame, supply fan, exhaust fan, demand control ventilation, economizer, BACnet controls, air filters, refrigerant cooling coil and compressor, condenser coil and condenser fan.
- C. Refrigerant: R-410A.

2.04 **ELECTRICAL CHARACTERISTICS:**

- A. 208 volts, three phase, 60 Hz.
- B. MCA: 64 Amps.
- C. MOCP: 90 Amps.
- D. Disconnect Switch: Factory mount disconnect switch in control panel.
- E. 120 V Powered convenience outlet

2.05 **FABRICATION**

- A. Cabinet: Steel with baked enamel finish, including access panels with screwdriver operated flush cam type fasteners. Structural members shall be minimum 18 gage, 0.0478 inch (1.21 mm), with access doors or panels of minimum 20 gage, 0.0359 inch (0.91 mm).
- B. Heat Exchangers: Aluminized steel, of welded construction.
- C. Supply Fan: Forward curved centrifugal type, resiliently mounted with V-belt drive, adjustable variable pitch motor pulley, and rubber isolated hinge mounted high efficiency motor.
- D. Air Filters:
 1. 2 inch (50 mm) Pleated MERV 8 filters.
- E. Roof Mounting Curb: 24 inches (610 mm) high galvanized steel, channel frame with gaskets, nailer strips.

2.06 **EVAPORATOR COIL**

- A. Provide Microchannel copper tube aluminum fin coil assembly with galvanized drain pan and connection.
- B. Provide capillary tubes or thermostatic expansion valves for units of 6 tons (21 kw) capacity and less, and thermostatic expansion valves and alternate row circuiting for units 7.5 tons (26 kw) cooling capacity and larger.

2.07 **COMPRESSOR**

- A. Provide dual hermetic compressors, 3600 rpm maximum, resiliently mounted with positive lubrication, crankcase heater, high and low pressure safety controls, motor overload protection, suction and discharge service valves and gauge ports, and filter drier.

2.08 **CONDENSER COIL**

- A. Provide Microchannel copper tube aluminum fin coil assembly with subcooling rows and coil guard.
- B. Provide direct drive propeller fans, resiliently mounted with fan guard, motor overload protection, wired to operate with compressor. Provide high efficiency fan motors.

2.09 **ECONOMIZER**

- A. Full 100% Modulating economizer
- B. Powered exhaust.

2.10 **OPERATING CONTROLS**

- A. Bacnet Communications Interface, connect to existing building BMS.
- B. Provide low voltage, adjustable room thermostat with occupancy override switch.
- C. Provide room CO2 sensor for outdoor air controls.

PART 3 EXECUTION

3.01 **SYSTEM STARTUP**

- A. Prepare and start equipment. Adjust for proper operation.

3.02 **CLOSEOUT ACTIVITIES**

- A. Demonstrate operation to Owner's maintenance personnel.

END OF SECTION

SECTION 260519
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Copper building wire rated 600 V or less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 DEFINITIONS

- A. RoHS: Restriction of Hazardous Substances.
- B. VFC: Variable-frequency controller.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Product Schedule: Indicate type, use, location, and termination locations.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Retain "Field quality-control reports" Paragraph below if Contractor is responsible for field quality-control testing and inspecting.
- C. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA.
 - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

PART 2 - PRODUCTS**2.1 COPPER BUILDING WIRE**

- A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. Manufacturers:
1. Belden Wire LLC
 2. Okonite Company
 3. Southwire Company
 4. Or Approved Equal
- C. Standards:
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
 2. RoHS compliant.
 3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- D. Conductors: Copper, complying with ASTM B 3 for bare annealed copper and with ASTM B 8 for stranded conductors.
- E. Conductor Insulation:
1. Type NM: Comply with UL 83 and UL 719.
 2. Type RHH & Type RHW-2] Comply with UL 44.
 3. Type THHN and Type THWN-2: Comply with UL 83.
 4. Type THW and Type THW-2: Comply with NEMA WC-70/ICEA S-95-658 and UL 83.
 5. Type UF: Comply with UL 83 and UL 493.
 6. Type XHHW-2: Comply with UL 44.
- F. Shield:
1. Type TC-ER: Cable designed for use with VFCs, with oversized crosslinked polyethylene insulation, and sunlight- and oil-resistant outer PVC jacket.

2.2 CONNECTORS AND SPLICES

- A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- B. Manufacturers:
1. Hubbell Power Systems
 2. Ideal Industries, Inc.
 3. O-Z/Gedney
 4. Or Approved Equal
- C. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.

- D. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.
 - 1. Material: Copper.
 - 2. Type: One hole with standard barrels.
 - 3. Termination: Compression.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Feeders: Copper for feeders smaller than No. 4 AWG; copper or aluminum for feeders No. 4 AWG and larger. Conductors shall be solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- C. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- D. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- E. VFC Output Circuits Cable: Extra-flexible stranded for all sizes.
- F. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type THHN/THWN-2, single conductors in raceway.
- B. Exposed Feeders: Type THHN/THWN-2, single conductors in raceway.
- C. Feeders & Branch Circuits Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN/THWN-2, single conductors in raceway.
- D. Feeders & Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway.
- E. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.
- F. VFC Output Circuits: Type XHHW-2 in metal conduit.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material.
 - 1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack.

3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.6 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.

3.7 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- C. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

- D. Perform tests and inspections.
1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
 2. Perform each of the following visual and electrical tests:
 - a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
 - b. Test bolted connections for high resistance using one of the following:
 - 1) A low-resistance ohmmeter.
 - 2) Calibrated torque wrench.
 - 3) Thermographic survey.
 - c. Inspect compression-applied connectors for correct cable match and indentation.
 - d. Inspect for correct identification.
 - e. Inspect cable jacket and condition.
 - f. Insulation-resistance test on each conductor for ground and adjacent conductors. Apply a potential of 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable for a one-minute duration.
 - g. Continuity test on each conductor and cable.
 - h. Uniform resistance of parallel conductors.
 3. Initial Infrared Scanning: After Substantial Completion, but before Final Acceptance, perform an infrared scan of each splice in conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner. Correct deficiencies determined during the scan.
 - a. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - b. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
 4. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.
- E. Cables will be considered defective if they do not pass tests and inspections.
- F. Prepare test and inspection reports to record the following:
1. Procedures used.
 2. Results that comply with requirements.
 3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

END OF SECTION

**SECTION 260529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

PART 1 - GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
1. Steel slotted support systems.
 2. Aluminum slotted support systems.
 3. Nonmetallic slotted support systems.
 4. Conduit and cable support devices.
 5. Support for conductors in vertical conduit.
 6. Structural steel for fabricated supports and restraints.
 7. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.
 8. Fabricated metal equipment support assemblies.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Slotted support systems, hardware, and accessories.
 - b. Clamps.
 - c. Hangers.
 - d. Sockets.
 - e. Eye nuts.
 - f. Fasteners.
 - g. Anchors.
 - h. Saddles.
 - i. Brackets.
 2. Include rated capacities and furnished specialties and accessories.
- B. Shop Drawings: For fabrication and installation details for electrical hangers and support systems.
1. Hangers. Include product data for components.
 2. Slotted support systems.
 3. Equipment supports.

4. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.
- C. Delegated-Design Submittal: For hangers and supports for electrical systems.
1. Include design calculations and details of hangers.
 2. Include design calculations for seismic restraints.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Suspended ceiling components.
 2. Ductwork, piping, fittings, and supports.
 3. Structural members to which hangers and supports will be attached.
 4. Size and location of initial access modules for acoustical tile.
 5. Items penetrating finished ceiling, including the following:
 - a. Luminaires.
 - b. Air outlets and inlets.
 - c. Sprinklers.
 - d. Access panels.
- B. Seismic Qualification Data: Certificates, for hangers and supports for electrical equipment and systems, accessories, and components, from manufacturer.
1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Welding certificates.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M.
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
1. AWS D1.1/D1.1M.
 2. AWS D1.2/D1.2M.

PART 2 - PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. Seismic Performance: Hangers and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
1. The term "withstand" means "the supported equipment and systems will remain in place without separation of any parts when subjected to the seismic forces specified.
 2. For life-safety components required to function after an earthquake (such as fire-sprinkler systems, components that contain hazardous content, and storage racks in structures open to the public), the Component Importance Factor is 1.5. For other components, the Component Importance Factor is 1.0 unless the structure is in Seismic Use Group III and component is necessary for continued operation of facility or failure of component could impair continued operation of facility, in which case the Component Importance Factor is 1.5.
 3. Component Importance Factor: 1.5.
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame Rating: Class 1.
 2. Self-extinguishing according to ASTM D 635.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32-inch- (10-mm-) diameter holes at a maximum of 8 inches (200 mm) o.c. in at least one surface.
1. Manufacturers:
 - a. Allied Tube & Conduit
 - b. B-line
 - c. Thomas & Betts Corp.
 - d. Or Approved Equal
 2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
 3. Material for Channel, Fittings, and Accessories: Galvanized steel.
 4. Channel Width: Selected for applicable load criteria.
 5. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 6. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
 7. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 8. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Aluminum Slotted Support Systems: Extruded-aluminum channels and angles with minimum 13/32-inch- (10-mm-) diameter holes at a maximum of 8 inches (200 mm) o.c. in at least one surface.
1. Manufacturers:
 - a. Cooper Industries Inc.
 - b. Haydon Corp.
 - c. Thomas & Betts Corp.
 - d. Or Approved Equal

2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
 3. Channel Material: 6063-T5 aluminum alloy.
 4. Fittings and Accessories Material: 5052-H32 aluminum alloy.
 5. Channel Width: Selected for applicable load criteria .
 6. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
 7. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 8. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Nonmetallic Slotted Support Systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with minimum 13/32-inch- (10-mm-) diameter holes at a maximum of 8 inches (200 mm) o.c., in at least one surface.
1. Manufacturers:
 - a. Allied Tube & Conduit
 - b. B-line
 - c. G-Strut
 - d. Or Approved Equal
 2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
 3. Channel Width: Selected for applicable load criteria.
 4. Fittings and Accessories: Products provided by channel and angle manufacturer and designed for use with those items.
 5. Fitting and Accessory Materials: Same as those for channels and angles, except metal items may be stainless steel.
 6. Rated Strength: Selected to suit applicable load criteria.
 7. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- D. Conduit and Cable Support Devices: Steel and malleable-**iron** hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- E. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be made of malleable iron.
- F. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M steel plates, shapes, and bars; black and galvanized.
- G. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 2. Manufacturers:
 - a. Hiliti, Inc
 - b. ITW Ramset
 - c. MKT Fastening LLC
 - d. Or Approved Equal
 3. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

4. Manufacturers:
 - a. B-Line
 - b. Empire Tool and Man.
 - c. Hilti Inc.
 - d. Or Approved Equal
5. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
6. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
7. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
8. Toggle Bolts: Stainless-steel springhead type.
9. Hanger Rods: Threaded steel.

2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:
 1. NECA 1.
 2. NECA 101
 3. NECA 102.
 4. NECA 105.
 5. NECA 111.
- B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.
- C. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings that are less than those stated in NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- E. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 1. Secure raceways and cables to these supports with two-bolt conduit clamps.
- F. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings, and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT may be supported by openings through structure members, according to NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To New Concrete: Bolt to concrete inserts.
 - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 4. To Existing Concrete: Expansion anchor fasteners.
 - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
 - 6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
 - 7. To Light Steel: Sheet metal screws.
 - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate..
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

- B. Touchup: Comply with requirements for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

**SECTION 260553
IDENTIFICATION FOR ELECTRICAL SYSTEMS**

PART 1 – GENERAL**1.1 SUMMARY**

- A. Work Included:
 - 1. Nameplates and Labels
 - 2. Equipment Nameplates
 - 3. Device Labels and Conductor Markers

1.2 RELATED SECTIONS

- A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

1.3 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

1.4 SUBMITTALS

- A. Submittals as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.
- B. In addition, provide:
 - 1. Samples of Nameplates/Labels: One of each type.

1.5 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.
- B. In addition, meet the following:
 - 1. Manufacturer's Qualifications: Firms regularly engaged in manufacture of identification devices of types and sizes required.
 - 2. Codes and Standards: Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices unless otherwise indicated.

1.6 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

PART 2 – PRODUCTS**2.1 MANUFACTURERS**

- A. General: Manufacturer's standard products of categories and types required for each application as referenced in other Division 26, Electrical Sections. Where more than a single type is specified for application, provide single selection for each product category.

B. Equipment Nameplates:

1. B & I Nameplates
2. Intellicum
3. JBR Associates
4. Or approved equivalent.

C. Device Labels:

1. Kroy
2. Brady
3. Or approved equivalent.

2.2 NAMEPLATES AND LABELS

A. Nameplates: Engraving stock melamine or lamicaid plastic laminate in the size and thicknesses indicated, engraved with engraver's standard letter style of the sizes and wording indicated, black with white core (letter color), punched for mechanical fastening except where adhesive mounting is necessary because of substrate. Provide 1/8-inch thick material.

1. Letter Color: White.
2. Letter Height: 1/4 inch.
3. Background Color: Black.
4. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate the substrate.
5. Access Panel Markers: Manufacturer's standard 1/16-inch thick engraved plastic laminate access panel markers, with abbreviations and numbers corresponding to concealed valve or devices/equipment. Include center hole to allow attachment.
6. Locations:
 - a. Each electrical distribution and control equipment enclosure.
 - b. Communication cabinets.
 - c. Transformers.
 - d. Disconnect switches and starters.

2.3 EQUIPMENT NAMEPLATES

A. Engraved phenolic plastic, 1/16-inch thick with beveled edge border matching letter color. All upper case letters in engraver standard letter style. Embossed tape or dymo style labels, or similar, are not acceptable.

B. Color:

1. Normal (Utility): White letters on black background.
2. Life Safety/Critical (Emergency Systems): Black letters on orange background per WAC 296-46B-700.9.
3. Equipment Branch (Legally Required Standby Systems): Black letters on yellow background.
4. X-Ray Branch (Optional Standby Systems): Black letters on white background.

C. Letter Size:

1. Use 1/2-inch letters minimum for identifying major equipment and loads, including switchgear, switchboards, etc.
2. Use 1/4-inch letters minimum for identifying panels, breakers, etc.

3. Use 3/16-inch minimum for identifying source, voltage, current, phase, and wire configurations.
- D. The Architect, Engineer, Commissioning Agent, and Owner reserve the right to make modifications to the nameplates as necessary.
- E. Nameplates: Engraving stock melamine or lamicaid plastic laminate, Federal Specification L-P-387, in the size and thicknesses indicated, engraved with engraver's standard letter style of the sizes and wording indicated, black with white core (letter color), punched for mechanical fastening except where adhesive mounting is necessary because of substrate. Provide 1/8-inch thick material.
 1. Letter Color: White.
 2. Letter Height: 1/4-inch.
 3. Background Color: Black.
 4. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate the substrate.

2.4 DEVICE LABELS & CONDUCTOR MARKERS

- A. Extra strength, laminated, adhesive tape, with 3/16-inch black letters on clear background. Use only for identification of individual wall switches, receptacles, conductors in device outlet boxes (receptacles and switches), control device stations, etc. Indicate source panel and circuits. Wall switches with engraved buttons do not require labeling. Embossed tape style labels, or similar, are not acceptable.
- B. Label all junction boxes to show system identification, source circuit, or raceway origin. In finished areas, utilize device label. In unfinished areas or above ceilings, use of permanent ink marker is acceptable.
- C. Where labels are provided, write identical information in permanent ink marker on the backside of the cover.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Degrease and clean surfaces to receive nameplates and labels.
- B. Coordinate designations used on Drawings with equipment labels.

3.2 INSTALLATION

- A. Install nameplates and labels parallel to equipment lines.
- B. Secure nameplates to equipment front using self-tapping stainless steel screws.
- C. Secure nameplates to inside surface of door on panelboard that is recessed in finished locations.
- D. Identify underground raceways using underground warning tape. Install one continuous tape per underground raceway at 6- to 8-inches below finish grade. Where multiple underground raceways are buried in a common trench and exceeds 16-inch width, install multiple warning tapes not over 10-inches apart (edge to edge) over the entire group of underground raceways.

- E. Identify empty conduit and boxes with intended use.
- F. Provide wire markers on each conductor for power, control, signaling and communications circuits.
- G. On the back of receptacle and switch finish plates and inside the back-box, legibly write with permanent ink marker, the circuit that each device is connected to.
- H. On the front of receptacle and switch finish plates, provide label with the circuit that each device is connected to.
- I. Verify emergency system distribution equipment nameplate colors with Architect/Owner.
- J. Locations:
 - 1. Switchgear, switchboards, sub-distribution switchboards, distribution panels, and branch panels.
 - 2. Main breakers and distribution breakers in switchgear, switchboards, and distribution panels.
 - 3. Equipment including, but not limited to, motor controllers, disconnects, and VFD's.
 - 4. Low-voltage equipment enclosures including, but not limited to, fire alarm panels, access control panels, and lighting control panels.
- K. Provide master nameplate at each incoming utility service to identify the following (each on a separate line):
 - 1. Serving Utility Transformer (ex. Utility Service #1.)
 - 2. Project
 - 3. Serving Utility Company
 - 4. Consulting Engineering Firm of Record
 - 5. Month and Year of Completion
 - 6. Voltage, Phase, and Wire Configuration.
- L. Switchgear, switchboards, and panels to include name source, voltage, current phase, wire configuration and fault current rating.
- M. Provide nameplates for flush mounted branch panelboards identifying name on front door. On inside of door provide nameplate as noted above.
- N. Provide a second label at branch panelboards listing the means of identification of branch circuit conductors. This identification legend to consist of the color code used for each voltage system (208Y/120V and 480Y/277V). See specification Section 26 05 19, Low-Voltage Electrical Power Conductors and Cables, for required conductor color code for this project. Include identification of both voltage systems on each label, regardless of the voltage of the panelboard to which the label is affixed. Comply with requirements of NEC 210.5.
- O. Provide engraved nameplate similar to distribution panelboards for transformers, lighting control panels, contactors, relays, time switches, etc. identifying name, service point and circuit number.
- P. For flush mounted panelboards verify label location (inside or outside panelboard door) with Architect/Owner.
- Q. Provide typewritten branch panel schedules with protective clear transparent covers accounting for every breaker installed. Use actual room designations assigned by name or number near completion

of the work, and not the designations shown on drawings.

- R. Provide labeling where switches control remote lighting or power outlets or where multiple switches are located in the same location.
- S. Where switches control remote lighting or power outlets, or where switches or outlets in same location serve different purposes, such as light, power, intercom, etc. or different areas, such as corridor and outside, plates with 1/8-inch black letters indicating function of each switch or outlet. Also label function light switches where two or more are mounted in same locations.
- T. Provide receptacle device plates with panel and circuit designation labeled on the face, with Dymo-type label, and with circuit written in permanent marker on back of plate and back-box. Provide switch device plates with panel and circuit designation written in permanent marker on back of plate and back-box.

END OF SECTION

**SECTION 262416
PANELBOARDS****PART 1 – GENERAL****1.1 SUMMARY**

- A. Work Included:
 - 1. Panelboards

1.2 RELATED SECTIONS

- A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

1.3 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.
- B. In addition, meet the following:
 - 1. UL 67, Standards for Panelboards.

1.4 SUBMITTALS

- A. Submittals as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

1.5 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

1.6 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.

PART 2 – PRODUCTS**2.1 MANUFACTURERS**

- A. Eaton Electric
- B. GE Industries
- C. Square D
- D. Or approved equivalent.
- E. Manufacturers listed above are allowed on condition of meeting specified conditions including available space for equipment, Code required working clearances, and selective coordination can be met. Prior to submitting bid, manufacturer to provide documentation to Engineer verifying specific conditions, including those mentioned above, can be met. Remove and replace electrical equipment

installed, at no cost to the Owner, that does not meet these conditions.

- F. Basis of Design: Eaton. Manufacturers listed are allowed on condition of meeting specified conditions including available space for the equipment and Code required working clearances and selective coordination. Remove and replace electrical equipment installed that does not meet these conditions at no cost to Owner.

2.2 PANELBOARDS

- A. Description: Panelboards 400 amps or less. NEMA PB1, Type 1 as indicated on drawings, circuit breaker type. Maximum enclosure depth: 6-inches for surface mounted, 5 3/4-inches for flush mounted.
- B. Maximum Width: 20-inches.
- C. Integrated Equipment Rating: Provide fully rated integrated equipment rating greater than the available fault current. Series rated switchboards are not acceptable. Reference drawings for available fault current. If drawings do not have available fault current shown, then coordinate with serving electrical utility. Final rating based on the protective device study completed under the provisions of Division 26, Electrical Distribution System Studies.
- D. Panelboard Bus Non-Reduced: Copper, ratings as indicated on drawings. Bus bar with suitable electroplating (tin) for corrosion control at connection. Provide copper ground bus in each panelboard; provide isolated ground bus where scheduled. Provide 200 percent rated copper neutral bus where scheduled.
- E. Lugs: Mechanical type for both aluminum and copper conductors.
- F. Provide double lugs and/or feed-through lugs for feed through feeders.
- G. Molded Case Circuit Breakers: Thermal magnetic trip circuit breakers, plug-in type, with common trip handle for poles; UL listed. Pre-drill bus for bolt-on breakers.
 - 1. Type SWD for lighting circuits.
 - 2. Type HACR for air conditioning equipment circuits.
 - 3. Class A ground fault interrupter circuit breakers where scheduled.
 - 4. Class B ground fault equipment protection circuit breakers for heat trace and other circuits as required by Code. Provide shunt trip circuit breakers where scheduled; provide wiring to remote trip switch/contacts as indicated on Drawings.
 - 5. Do not use tandem circuit breakers.
 - 6. Combination AFCI Breaker: UL 1699 compliant. Integral 30mA GFCI trip. Manual test button for AFCI mechanism. Self-testing, tripping if AFCI module fails.
- H. Current Limiting Molded Case Circuit Breakers: With integral thermal and instantaneous magnetic trip in each pole, coordinated with automatically resetting current limiting elements in each pole; UL listed. Interrupting rating 100,000 symmetrical amperes, let-through current and energy level less than permitted for same size Class RK-5 fuse.
- I. Solid-State Molded Case Circuit Breakers: With electronic sensing, timing and tripping circuits for adjustable current settings; UL listed.
 - 1. Ground fault trip, ground fault sensing integral with circuit breaker.
 - 2. Instantaneous trip.
 - 3. Adjustable short time trip.
 - 4. Adjustable long time delay.

5. Adjustable short time delay.
 6. Adjustable short time pickup.
 7. Stationary mounting.
 8. Include shunt trip where indicated.
- J. Cabinet Front: Provide flush or surface mounting as shown on the schedules, drawings, or otherwise noted. Cabinet front with concealed hinged front cover door-in-door construction, metal directory frame with heavy clear plastic protector, flush lift latch and lock, two keys (CAT 70 keys) per panel all keyed alike.
- K. Provide boxes with removable blank end walls and interior mounting studs. Provide interior support bracket for ease of interior installation.
- L. Furnish surface mounted cabinet boxes without knockouts.
1. Minimum Integrated Short Circuit Rating:
 - a. Minimum rating as indicated on the Drawings or Panel Schedules.
 - b. Final rating based on the Protective Device Study.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install panelboards in accordance with NEMA PB 1.1, NECA 1 and manufacturers installation instructions.
- B. Install panelboards level and plumb. Install recessed panelboards flush with wall finishes.
- C. Height: 6-feet 6-inches to top of panelboard; install panelboards taller than 6-feet 6-inches with bottom no more than 4-inches above floor.
- D. Provide filler plates for unused spaces in panelboards.
- E. Provide typed circuit directory for each branch circuit panelboard. Include all "spaces" and "spares." Revise directory to reflect circuiting changes and as-installed conditions. Use final Owner designated room names and numbers, and not designations shown on drawings.
- F. Provide engraved plastic nameplates per Section 26 05 53, Identification for Electrical Systems.
- G. Provide 1 (qty), 1-inch spare conduits out of each recessed panelboard to an accessible location above ceiling. Identify each as SPARE.
- H. Provide permanent identification number in or on panelboard dead-front adjacent to each breaker pole position. Horizontal centerline of numbers to correspond with centerline of circuit breaker pole position.
- I. Ground and bond panelboard enclosure per NEC.
- J. Paint:
 1. Standard factory finish unless noted otherwise.
 2. Panelboards located in finished interior areas in view of building occupants: paint to match adjacent wall surface. Color and paint preparation as specified by Architect. Covers to be painted off wall, then installed over dried, painted wall surface.

- K. Provide handle guards on each circuit supplying obviously constant loads such as fire alarm, security, lighting controls, refrigerators and freezers, fire protection, etc.
- L. Provide interior wiring diagram, neutral wiring diagram, UL label, and short circuit rating on interior or in booklet format inserted in sleeve inside panel cover.
- M. Verify available recessing depth and coordinate wall framing with other divisions.
- N. Maintain fire rating of wall where panels are installed flush in fire rated walls.

3.2 FIELD QUALITY CONTROL

- A. Perform inspections and tests in accordance with manufacturer's requirements.

3.3 ADJUSTING

- A. Measure steady state load currents at each panelboard feeder; rearrange circuits in panelboard to balance phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

3.4 CLEANING

- A. Thoroughly clean exterior and interior of each panelboard in accordance with manufacturer's installation instructions.
- B. Vacuum construction dust, dirt, and debris out of each panelboard.
- C. Where enclosure finish is damaged, touch up finish with matching paint in accordance with manufacturer's specifications and installation instructions.

END OF SECTION

**SECTION 262726
WIRING DEVICES****PART 1 – GENERAL****1.1 SUMMARY**

- A. Work Included: Provision of materials, installation and testing of:
 - 1. Receptacles
 - 2. Finish Plates
 - 3. Surface Covers

1.2 RELATED SECTIONS

- A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

1.3 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.
- B. In addition, meet the following:
 - 1. UL 498, Attachment Plugs and Receptacles.

1.4 SUBMITTALS

- A. Submittals as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.
- B. In addition, provide:
 - 1. Receptacles
 - 2. Wall Plates
 - 3. In-Use Cover
- C. Submit performance test results for devices in patient care areas in conformance with NFPA 99-4.3.3.

1.5 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

1.6 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

PART 2 – PRODUCTS**2.1 MANUFACTURERS**

A. Receptacles:

1. Industrial Grade:
 - a. Cooper 5362
 - b. Hubbell HBL5362
 - c. Bryant FRY5362
 - d. Leviton 5362
 - e. Pass & Seymour 5362A
 - f. Or approved equivalent.
2. Ground Fault Circuit Interrupter (GFCI) Receptacle:
 - a. Hubbell GFR5362SB
 - b. Cooper WRVGF20
 - c. Pass & Seymour 2095TRWR
 - d. Or approved equivalent.
3. While-in-Use Weatherproof Cover:
 - a. UV Stabilized Polycarbonate Cover:
 - 1) Pass & Seymour
 - 2) Intermatic
 - 3) Hubbell
 - 4) Cooper
 - 5) Or approved equivalent.
 - b. Thermoplastic Cover:
 - 1) Leviton
 - 2) Hubbell
 - 3) Or approved equivalent.
 - c. Die Cast Cover:
 - 1) Intermatic
 - 2) Hubbell
 - 3) Cooper
 - 4) Or approved equivalent.

C. Surface Covers:

1. Aluminum with Gasket, Blanks, Single Gang:
 - a. Bell 240-ALF
 - b. Carlon
 - c. Or approved equivalent.
2. 2-Gang:
 - a. Bell 236-ALF
 - b. Carlon
 - c. Or approved equivalent.

D. Provide receptacles of common manufacturer and appearance.

2.2 RECEPTACLES

A. Duplex Receptacles Characteristics: Straight parallel blade, 125 volt, 2 pole, 3 wire grounding.

1. Commercial Grade: Riveted. Back and side wired. Brass ground contact on steel strap. Nylon face and nylon base. 20 amp.

- B. Isolated Ground Receptacle: Isolated ground "delta" on receptacle face, same finish as standard duplex receptacles, 20 amp.
- C. Ground Fault Circuit Interrupter (GFCI) Receptacle: Feed through type, back-and-side wired, tamper-resistant, weather resistant self-testing, 20 amp, 125VAC.
- D. While-in-Use Weatherproof Cover: NEMA 3R when closed over energized plug. Vertical mount for duplex receptacle. Provide continuous use cover with cover capable of closing over energized cord cap with bottom aperture for cord exit.
 - 1. UV stabilized polycarbonate cover with closed cell neoprene foam gasket.
 - 2. Thermoplastic cover with closed cell neoprene gasket.
 - 3. Die cast cover with closed cell neoprene foam gasket: Capable of being locked closed to prevent tampering or unauthorized use.
- E. Finish:
 - 1. Same exposed finish as switches.

2.3 FINISH PLATES

- A. Finish Plates: Type 302 stainless steel. Smooth satin finish.

2.4 SURFACE COVERS

- A. Material: Galvanized steel, 1/2-inch raised industrial type with openings appropriate for devices installed on surface outlets.
- B. Cast Box and Extension Adaptors: Aluminum with gasket, blanks single gang or 2-gang.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Protection:
 - 1. Devices: Upon installation of finish plates and receptacles, adhere to proper and cautious use of convenience outlets. At time of substantial completion, replace those items which have been damaged, including those burned and scored by faulty receptacles or cord caps.
 - 2. Finish Plates and Devices: Do not install items until finish painting is complete. Scratched or splattered finish plates and devices not acceptable.

3.2 INSTALLATION

- A. See Architectural elevations for location and mounting height of wiring devices. Review Architectural elevations prior to rough-in and contact Architect immediately if conflicts are found between Architectural and Electrical Drawings. Do not rough-in devices until conflicts are resolved.
- B. Install wiring devices and finish plates plumb with building lines, equipment cabinets and adjacent devices. Devices not plumb will be fixed at no additional cost to Owner.
- C. Orientation:
 - 1. Wall-Mounted Receptacles: Install with long dimension oriented vertically at centerline height shown on drawings or as specified.
 - 2. Vertical Alignment: When more than one outlet is shown on drawings in close proximity to each

- other, but at different elevations, align outlets on a common vertical center line for best appearance. Verify with Architect.
3. Horizontal Alignment: When more than one outlet is shown on Drawings to be stacked in wall vertically, align outlets on a common horizontal center line for best appearance. Verify with Architect.
- D. GFCI Outlets: One GFCI receptacle may be used to provide GFCI protection to downstream duplex receptacles on same branch circuit. If GFCI receptacle is used, the following conditions must be met:
1. Downstream receptacles are in same room as upstream GFCI duplex receptacles.
 2. Downstream duplex receptacles are labeled as being protected by an upstream GFCI receptacle in same room.

3.3 LABELING

- A. Provide labeling per Section 26 05 53, Identification for Electrical Systems.
- B. Provide receptacle device plates with panel and circuit designation labeled on the face, with Dymo-type label, and with circuit written in permanent marker on back of plate and back-box. Provide switch device plates with panel and circuit designation written in permanent marker on back of plate and back-box.

3.4 TESTING

- A. Submit report of compliance and results of receptacle and equipment tests :
- B. Test wiring devices to ensure electrical continuity of grounding connections, and after energizing circuitry, to demonstrate compliance with requirements. Test receptacles for line to neutral, line to ground and neutral to ground faults. Correct any defective wiring.

END OF SECTION

**SECTION 262813
FUSES****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Cartridge fuses rated 600 V ac and less for use in the following:
 - a. Control circuits.
 - b. Motor-control centers.
 - c. Panelboards.
 - d. Enclosed controllers.
 - e. Enclosed switches.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for spare-fuse cabinets. Include the following for each fuse type indicated:
 - 1. Ambient Temperature Adjustment Information: If ratings of fuses have been adjusted to accommodate ambient temperatures, provide list of fuses with adjusted ratings.
 - a. For each fuse having adjusted ratings, include location of fuse, original fuse rating, local ambient temperature, and adjusted fuse rating.
 - b. Provide manufacturer's technical data on which ambient temperature adjustment calculations are based.
 - 2. Dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings.
 - 3. Fuse sizes for elevator feeders and elevator disconnect switches.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For fuses to include in emergency, operation, and maintenance manuals. Include the following:
 - 1. Ambient temperature adjustment information.
 - 2. Current-limitation curves for fuses with current-limiting characteristics.
 - 3. Coordination charts and tables and related data.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.6 FIELD CONDITIONS

- A. Where ambient temperature to which fuses are directly exposed is less than 40 deg F (5 deg C) or more than 100 deg F (38 deg C), apply manufacturer's ambient temperature adjustment factors to fuse ratings.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. Manufacturers:
 - 1. Bussmann
 - 2. Edison
 - 3. Littelfuse
 - 4. Or Approved Equal.
- B. Source Limitations: Obtain fuses, for use within a specific product or circuit, from single source from single manufacturer.

2.2 CARTRIDGE FUSES

- A. Characteristics: NEMA FU 1, current-limiting, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.
 - 1. Type RK-1: 600-V, zero- to 600-A rating, 200 kAIC.
 - 2. Type RK-5: 600-V, zero- to 600-A rating, 200 kAIC.
 - 3. Type CC: 600-V, zero- to 30-A rating, 200 kAIC, fast acting.
 - 4. Type CD: 600-V, 31- to 60-A rating, 200 kAIC, fast acting.
 - 5. Type J: 600-V, zero- to 600-A rating, 200 kAIC, time delay.
 - 6. Type L: 600-V, 601- to 6000-A rating, 200 kAIC, time delay.
 - 7. Type T: 250-V, zero- to 1200-A, 600-V, zero- to 800-A rating, 200 kAIC, very fast acting, time delay.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with NEMA FU 1 for cartridge fuses.
- D. Comply with NFPA 70.
- E. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.
- B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.
- C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.
- D. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FUSE APPLICATIONS

- A. Cartridge Fuses:
 - 1. Feeders: Class L, fast acting, Class RK1, fast acting, Class RK5, fast acting, Class J, fast acting, Class J, time delay.
 - 2. Motor Branch Circuits: Class RK1 or Class RK5, Class CC, motor duty, time delay.
 - 3. Large Motor Branch (601-4000 A): Class L, time delay.
 - 4. Power Electronics Circuits: Class J, high speed or Class T, fast acting.
 - 5. Other Branch Circuits: Class RK1, time delay, Class RK5, time delay, Class J, fast acting, Class J, time delay, Class CC, fast acting.
 - 6. Control Transformer Circuits: Class CC, time delay, control transformer duty.
 - 7. Provide open-fuse indicator fuses or fuse covers with open fuse indication.

3.3 INSTALLATION

- A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

3.4 IDENTIFICATION

- A. Install labels complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems" and indicating fuse replacement information inside of door of each fused switch and adjacent to each fuse block, socket, and holder.

END OF SECTION

**SECTION 262816
ENCLOSED SWITCHES AND CIRCUIT BREAKERS**

PART 1 – GENERAL

1.1 SUMMARY

- A. Work Included:
 - 1. Toggle Type Disconnect Switches
 - 2. Manual Motor Starters
 - 3. Safety Switches
 - 4. Enclosed Circuit Breakers
 - 5. Molded Case Switches

1.2 RELATED SECTIONS

- A. Contents of Division 26, Electrical and Division 01, General Requirements apply to this Section.

1.3 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

1.4 SUBMITTALS

- A. Submittals as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

1.5 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

1.6 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 05 00, Common Work Results for Electrical and Division 01, General Requirements.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Toggle Type Disconnect Switches:
 - 1. Cooper
 - 2. Hubbell
 - 3. Leviton
 - 4. Pass & Seymour
 - 5. Slater
 - 6. Or approved equivalent.

C. Manual Motor Starters:

1. Eaton Electrical
2. General Electric
3. Square D
4. Or approved equivalent.

D. Safety Switches:

1. Eaton Electrical
2. GE Industrial
3. Square D
4. Or approved equivalent.

E. Enclosed Circuit Breakers:

1. Eaton Electrical
2. GE Industrial
3. Square D
4. Or approved equivalent.

F. Molded Case Switches:

1. Eaton Electrical
2. General Electric
3. Square D
4. Or approved equivalent.

2.2 TOGGLE TYPE DISCONNECT SWITCHES

A. Rating: 120 or 277 volt, 1 or 2 pole, 20 amp, 1 hp maximum.

B. Enclosure:

1. NEMA 1: Dry locations/Indoors.
2. NEMA 3R: Damp or wet locations/Outdoors.

C. Handle lockable in 'off' position.

2.3 MANUAL MOTOR STARTERS

A. Quick-Make, Quick-Break. Thermal overload protection. Device labeled with maximum voltage, current, and horsepower.

B. Enclosure:

1. NEMA 1: Dry locations/Indoors.
2. NEMA 3R: Damp or wet locations/Outdoors.

2.4 SAFETY SWITCHES

A. Heavy duty fusible type and non-fusible type (as indicated on drawings), dualrated, quick-make, quick-break with fuse rejection feature for use with Class R fuses only, unless other fuse type is specifically noted.

B. Clearly marked for maximum voltage, current, and horsepower.

- C. Operable handle interlocked to prevent opening front cover with switch in 'on' position.
- D. Switches rated for maximum available fault current.
- E. Handle lockable in 'off' position.
- F. Enclosure:
 - 1. NEMA 1: Dry locations/Indoors.
 - 2. NEMA 3R: Damp or wet locations/Outdoors.

2.5 ENCLOSED CIRCUIT BREAKERS

- A. Molded case circuit breakers:
 - 1. 1-, 2-, or 3-pole bolt on, single-handle common trip, 600VAC or 250VAC as indicated on drawings.
 - 2. Overcenter toggle-type mechanism, quick-make, quick-break action. Trip indication is by handle position.
 - 3. Calibrate for operation in 40C ambient temperature.
 - 4. 15 to 150 Amp Breakers: Permanent trip unit containing individual thermal and magnetic trip elements in each pole.
 - 5. 151 to 400 Amp Breakers: Variable magnetic trip elements. Provide push-to-trip button on cover of breaker for mechanical tripping.
 - 6. Provide handle mechanisms that are lockable in the open (off) position.
 - 7. Circuit breakers to have minimum symmetrical interrupting capacity as indicated on Drawings.
 - 8. Where protective devices are applied in series combination, such that the prospective available fault current exceeds the interrupting rating (AIR) of the downstream protective devices, such combinations to be UL recognized combinations. Electrical equipment using these UL recognized circuit breaker combinations to be clearly marked in accordance with NEC Section 240.86 and 110.22.
- B. Enclosure:
 - 1. NEMA 1: Dry locations/Indoors.
 - 2. NEMA 3R: Damp or wet locations/Outdoors.
- C. Removable cover, galvanized steel enclosure, powder coat painted.

2.6 MOLDED CASE SWITCHES

- A. Provide cover padlock provision.
- B. Provide trip unit with no overcurrent, overload, or low level fault protection. Trip unit to be high instantaneous magnetic fixed trip type with magnetic trip reset at factory to interrupt high fault currents at or above preset level.
- C. Enclosure:
 - 1. NEMA 1: Dry locations/Indoors.
 - 2. NEMA 3R: Damp or wet locations/Outdoors.

PART 3 – EXECUTION**3.1 COORDINATION**

- A. Obtain and review the submitted product data for equipment furnished by the Owner, and furnished under other Divisions of this contract, particularly under Divisions 22 and 23.
- B. Confirm the equipment nameplate maximum overcurrent protection (MOCP) and make accommodations and adjustments to switches, fuses and circuit breakers as necessary to coordinate with the nameplate rating

3.2 INSTALLATION

- A. Provide disconnecting means within sight of each motor controller and of each motor. Motor controller disconnecting means equipped with lock-out/tag-out padlock provisions do not require a disconnect switch at the controlled motor location. Locate disconnect means in view of and not inside of equipment, such that tools are not needed to remove covers to access the disconnecting means.
- B. Install in accordance with manufacturer's instructions.
- C. Install fuses in fusible disconnect switches. Coordinate fuse ampere rating with installed equipment. Do not provide fuses of lower ampere rating than motor starter thermal units.
- D. Provide engraved nameplates per Section 26 05 53, Identification for Electrical Systems.
- E. Provide arc flash warning labels.
- F. Apply neatly typed adhesive tag on inside door of each fusible switch indicating NEMA fuse class and size installed.

END OF SECTION

EXHIBIT H

Plans are available at the following link:

<https://oregonstate.box.com/s/8wywodz88qxt3swjjwbkv26709g3w0lj>

EXHIBIT I

ASBESTOS BUILDING INSPECTION

LOCATION:

**PHARMACY
1601 SW JEFFERSON AVENUE
CORVALLIS, OREGON 97331**

SEPTEMBER 30, 2008

FORENSIC ANALYTICAL PROJECT NO. PJ6230

PREPARED FOR:

**OREGON STATE UNIVERSITY
127 OAK CREEK BUILDING
CORVALLIS, OREGON 97331**

PREPARED BY:



Forensic Analytical Consulting Services, Inc.
Portland Office
17400 SW Upper Boones Ferry Road, Suite 245
Portland, OR 97224
503/595.1001

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1.0 INTRODUCTION

Forensic Analytical Consulting Services, Inc. (Forensic Analytical) was awarded the contract to provide asbestos survey services to the Oregon University System on March 4, 2008 (OUS RFP #2008-01). The RFP required specific field and reporting protocols which were fully integrated into the final proposal.

Forensic Analytical has entered into a Sub-Consultant agreement with G2 Consultants, Inc. (G2) of Lake Oswego, Oregon, to perform all field sampling, report writing, AutoCAD diagramming and to create electronic deliverables for all buildings scheduled to receive asbestos surveys on the Oregon State University campus. All reports and deliverables will be created using a Forensic Analytical reporting format.

This Subcontractor relationship was approved by both the Oregon University System and Oregon State University prior to the commencement of work.

G2 has subsequently performed an inspection to identify asbestos-containing building materials at the property located at 1601 SW Jefferson Avenue, Corvallis, Oregon. Dan Rouse, Noel Kraft, and Robin Sharpe conducted the field investigation on August 28, 2008 at the direction of Andrew Gray of Oregon State University.

The purpose of the inspection is to determine whether ACM is present in the structures onsite. The subject property consists of a five-story structure with a roof level penthouse totaling 48,200 sq. ft.

This report presents the results of the asbestos inspection conducted by G2 for the above referenced project. Results of the inspection are summarized in Appendix A.

Drawings depicting ACM and sample locations are presented in Appendix B. A detailed laboratory report and chain of custody forms are contained in Appendix C.

At the request of OSU, sample data from previous asbestos surveys conducted by Hall-Kimbrell are being utilized as part of Forensic Analytical's comprehensive survey. Only friable materials were sampled and analyzed in the Hall-Kimbrell survey. Any materials found to contain asbestos in the previous survey is shown on the ACM locations diagram of this report. Sample locations in the previous survey are not shown on the Forensic Analytical sample locations diagram. The previous survey can be found in Appendix F of this report.

Positive materials identified in the previous survey as well as areas of damage noted may have been abated since the time of the previous survey. It is assumed that the positive materials, such as thermal system insulation, is still present in interstitial spaces. Areas of damage observed during the Forensic Analytical fieldwork will be noted in a separate detailed report. A brief description and location of any damaged materials found in the subject property can be found in Section 3.0.

2.0 FINDINGS

The results of the samples indicate that asbestos was detected at the site. A complete table of the samples taken and materials assumed to contain asbestos can be found in Appendix A.

3.0 RECOMMENDATIONS

Materials for which sample analysis by PLM results in greater than one percent asbestos (for any one sample collected from a homogeneous material) are classified as ACM under regulations promulgated by, but not limited to, the following agencies: federal EPA and federal OSHA.

The agencies use the following definitions:

Federal EPA (Oregon DEQ): materials containing greater than one percent asbestos are ACM
Federal OSHA (OR-OSHA): materials containing greater than one percent asbestos are ACM

For detailed regulatory requirements in specific situations, Forensic Analytical should be consulted, or the applicable regulations should be examined.

All materials identified were classified by condition. Materials in "Good" condition should be maintained in place following the OR-OSHA operations and maintenance requirements. Materials in "Fair" condition should have patch and repair activities performed to address any damaged areas. Materials in "Poor" condition should be addressed through removal, repair and/or encapsulation.

4.0 METHODS

Materials suspected of containing asbestos were sampled in accordance with the federal EPA AHERA protocols. Materials determined by the inspector to be non-suspect, such as wood, metal, glass, and fiberglass insulation, were not sampled. Destructive sample techniques were not used during the inspection. Additional suspect building materials may be present in areas that were inaccessible, unsafe to inspect, or obscured from view during the inspection process.

Suspect materials were grouped and classified as homogeneous materials based on their appearance, usage, and age of the building. Representative samples of each homogeneous material were collected for laboratory analysis. Where previous sample data exists, one confirming sample was collected of materials that previously tested positive. Additionally, where multiple samples of a given homogeneous material were collected, the set was analyzed to first positive.

The unique sample description ID was developed specifically for OSU. The sample ID includes; the OSU building ID; the homogeneous material number; followed by a unique material code (FT = Floor Tile); and lastly the sample number.

Samples were collected in such a manner as to minimize release of the material into the surroundings. Material type, sample number, sample location and other pertinent information were recorded at the time of sampling. Each sample was placed in a sample container labeled with a unique sample number and submitted to Forensic Analytical's NVLAP-accredited laboratory for analysis under chain of custody documentation. Samples were analyzed in accordance with EPA Method 600/R-93-116, using PLM with dispersion staining and using visual area estimation to determine percent asbestos content. This method allows for the identification of the primary types of asbestos used in building materials. The lower limit of detection for this method is one percent. Samples containing less than one percent asbestos by PLM with visual area estimation are reported as Trace.

5.0 LIMITATIONS

G2 did not inspect subsurface areas for asbestos. ACM such as underground waterproofing coatings, asbestos-cement water pipe, electrical ducts, or other subsurface materials or equipment may be present beneath the site. G2 did not disassemble building equipment; such as fans, ducts, elevator equipment, and electrical equipment. Consequently, equipment may contain untested gaskets, internal components, overspray of building materials and the like. It is also common for carpet to be installed over previously installed floor materials. If the aforementioned materials or any other untested suspect materials are encountered during construction or maintenance activities, they should be assumed to be asbestos-containing materials and not disturbed, unless sampling and analysis of the materials proves otherwise.

Every effort was made to inspect all accessible areas of the building. During the course of the inspection, G2 utilized the keys provided, as well as the assistance of our facilities contacts. However, on occasion, areas were not accessible by either. The inaccessible areas for this building were rooms 137 and 602.

G2 has performed this asbestos sampling in accordance with generally accepted methods and practices of the profession, and consistent with that level of care and skill ordinarily exercised by reputable environmental consultants under similar conditions and circumstances. No other representation, guarantee or warranty, express or implied, is included or intended in this asbestos inspection report.

Respectfully submitted,



Dan Rouse
G2 Consultants, Inc.

Reviewed by,



Noal Kraft
G2 Consultants, Inc.

APPENDIX A

COMPLETE SAMPLE INVENTORY

SAMPLE ID #	MATERIAL DESCRIPTION	SAMPLE LOCATION	MATERIAL LOCATION	ASB. % AND TYPE	APPROX. QUANTITY	CONDITION
Phar-01-FT-1	Floor Tile, 9" x 9", Light Brown, Speckled w/ Black Mastic	H111	Throughout Building	7% Chrysotile Tile ND Mastic	15,745 sq. ft.	Good
Phar-02-FT-1	Floor Tile, 9" x 9", Tan w/ Brown and White Streaks and Yellow Mastic	H113	H113	2% Chrysotile Tile ND Mastic	120 sq. ft.	Good
Phar-03-TP-1	Tar Paper on Ceiling	101B	-	ND	-	-
Phar-04-TSI-1	Pipe Insulation Encapsulant Sealant on Fiberglass Insulated Pipe	101B	-	ND	-	-
Phar-04--TSI-2	Pipe Insulation Encapsulant Sealant on Fiberglass Insulated Pipe	101B	-	ND	-	-
Phar-04-TSI-3	Pipe Insulation Encapsulant Sealant on Fiberglass Insulated Pipe	101B	-	ND	-	-
Phar-05-CT-1	Ceiling Tile, 2' x 4', Pinholes Circle Pattern	103	1 st – 4 th Floors	2% Amosite	8,005 sq. ft.	Fair
Phar-06-CT-1	Ceiling Tile, 2' x 4', Fissured w/ Pinholes	H112	-	ND	-	-
Phar-07-SU-1	Sink Undercoating, Grey	105	-	ND	-	-
Phar-08-PL-1	Plaster	105	-	ND	-	-

ND – Non-Detected

* - This sample is part of a set in which another sample contains asbestos.

SAMPLE ID #	MATERIAL DESCRIPTION	SAMPLE LOCATION	MATERIAL LOCATION	ASB. % AND TYPE	APPROX. QUANTITY	CONDITION
Phar-08-PL-2	Plaster	H202	-	ND	-	-
Phar-08-PL-3	Plaster	H203	-	ND	-	-
Phar-08-PL-4	Plaster	H301	-	ND	-	-
Phar-08-PL-5	Plaster	307	-	ND	-	-
Phar-08-PL-6	Plaster	H111	-	ND	-	-
Phar-08-PL-7	Plaster	H301	-	ND	-	-
Phar-09-CT-1	Ceiling Tile, 2' x 4', Drywall	107A	-	ND	-	-
Phar-10-FT-1	Floor Tile, 12" x 12", Off-white w/ Brown and White Specks and Black Mastic	107	-	ND	-	-
Phar-11-CB-1	Cove Base, 4", Tan w/ Brown Adhesive	107	-	ND	-	-
Phar-12-SV-1	Sheet Vinyl, Tan Sand Pattern	109B	-	ND	-	-
Phar-13-ST-1	Stair Tread, Brown w/ Tan Streaks	S101	-	ND	-	-
Phar-14-FT-1	Floor Tile, 12" x 12", Brown w/ Dark Brown Specks and Tan Mastic	111	-	ND	-	-

ND – Non-Detected

* - This sample is part of a set in which another sample contains asbestos.

SAMPLE ID #	MATERIAL DESCRIPTION	SAMPLE LOCATION	MATERIAL LOCATION	ASB. % AND TYPE	APPROX. QUANTITY	CONDITION
Phar-15-FT-1	Floor Tile, 9" x 9", Medium Brown w/ White and Brown Streaks and Tan Mastic	115	-	ND	-	-
Phar-16-FT-1	Floor Tile, 12" x 12", Brown Specked and Black Mastic	115A	-	ND	-	-
Phar-17-FT-1	Floor Tile, 16" x 16", Tan, Non-slip and White Mastic	H111	-	ND	-	-
Phar-18-FT-1	Floor Tile, 12" x 12", Off-white w/ Tan and Grey Specks	125	-	ND	-	-
Phar-19-FT-1	Floor Tile, 12" x 12", Brown w/ Cream and Dark Brown Specks and Black Mastic	H203	2 nd Floor Corridor and Stairwells, 3 rd Floor Stairwell	Trace Chrysotile Tile	1,225 sq. ft.	Good
Phar-20-FT-1	Floor Tile, 12" x 12", Tan w/ Brown and White Specks and Tan Mastic	227	-	ND	-	-
Phar-21-SV-1	Sheet Vinyl, Grey w/ White, Blue, and Pink Specks	237	-	ND	-	-
Phar-22-SU-1	Sink Undercoating, Black	237	-	ND	-	-
Phar-23-FT-1	Floor Tile, 12" x 12", Brown w/ Off-white and Orange Specks and Black Mastic	214A	214A, 329, 313B	ND Tile 3% Chrysotile Mastic	505 sq. ft.	Good
Phar-24-FT-1	Floor Tile, 12" x 12", Pale Orange w/ Brown Specks and Black Mastic	214A	214A	ND Tile 5% Chrysotile Mastic	25 sq. ft.	Good
Phar-25-CT-1	Ceiling Tile, 12" x 12", Pinholes Circle Pattern	H202	-	ND	-	-

ND – Non-Detected

* - This sample is part of a set in which another sample contains asbestos.

SAMPLE ID #	MATERIAL DESCRIPTION	SAMPLE LOCATION	MATERIAL LOCATION	ASB. % AND TYPE	APPROX. QUANTITY	CONDITION
Phar-26-CT-1	Ceiling Tile, 12" x 12", Long Fissures	S202	-	ND	-	-
Phar-27-FT-1	Floor Tile, 12" x 12", Off-white w/ Peach Specks and Tan Mastic	301	-	ND	-	-
Phar-28-FT-1	Floor Tile, 9" x 9", Dark Brown w/ Cream and Red Streaks and Black Mastic	305	-	ND	-	-
Phar-29-FM-1	Floor Material, Yellow Pebble Pattern	H502	-	ND	-	-
Phar-30-PW-1	Pipe Wrap, Asphaltic	509	-	ND	-	-
Phar-31-RP-1	Roof Patch & Repair	Roof	-	ND	-	-
Assumed	Cement Asbestos Board Countertops	Assumed	Throughout Labs	Assumed	Not Quantified	Good
Assumed	Vent Hood Liners (Cement Asbestos Board)	Assumed	Throughout Labs	Assumed	Not Quantified	Good
Previously Sampled	Pipe Insulation	Previously Sampled	As Shown in Previous Survey	As Shown in Previous Survey	Not Quantified	Fair to Good
Previously Sampled	Pipe Fitting Insulation	Previously Sampled	As Shown in Previous Survey	As Shown in Previous Survey	Not Quantified	Fair to Good

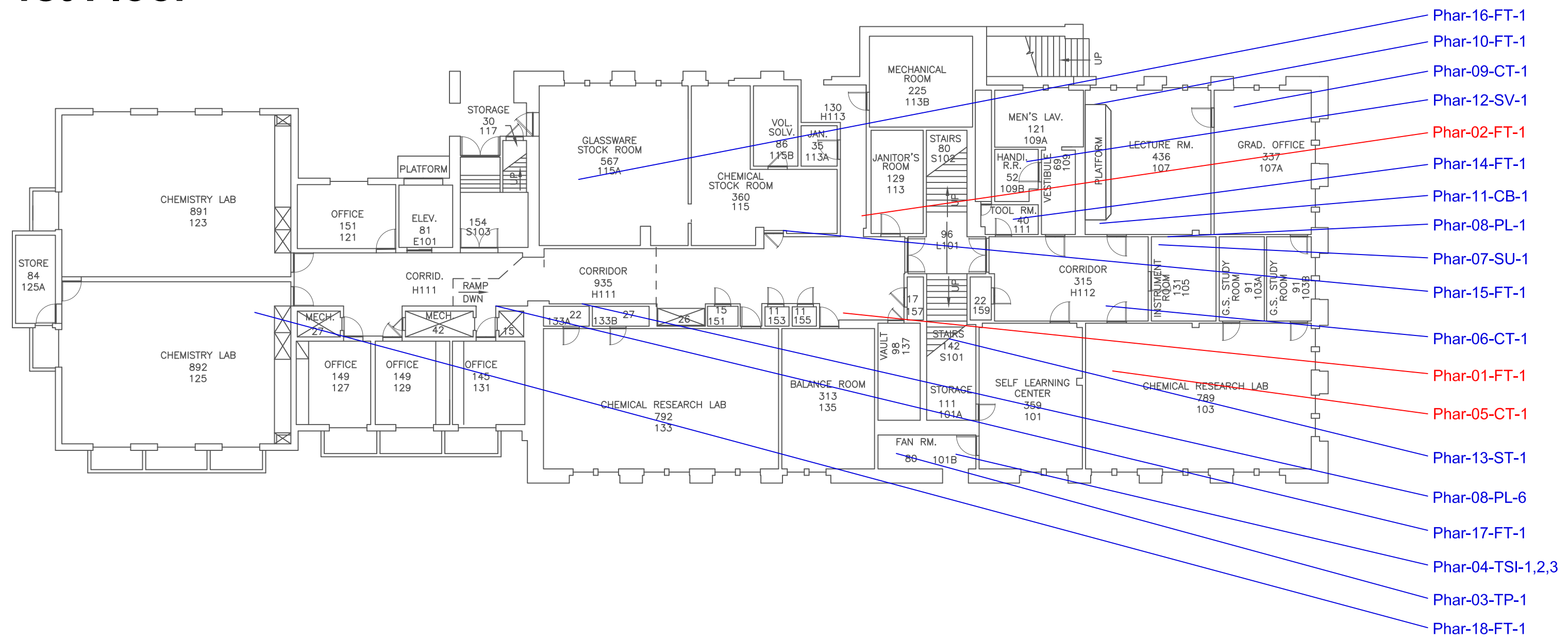
ND – Non-Detected

* - This sample is part of a set in which another sample contains asbestos.

APPENDIX B

SITE DRAWING(S)

1st Floor



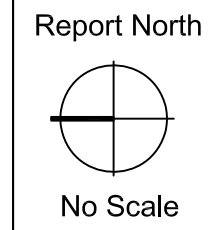
DATE: 9-30-08
 DRN. BY: RAS
 PAGE #: **SAM - 1/5**

CLIENT: OSU Pharmacy
 PROJECT: 1601 SW Jefferson Way
 LOCATION: Conavalls, Oregon 97331
 PROJECT #: P.16230

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REVISIONS

Pharmacy 1st Floor Sample Locations

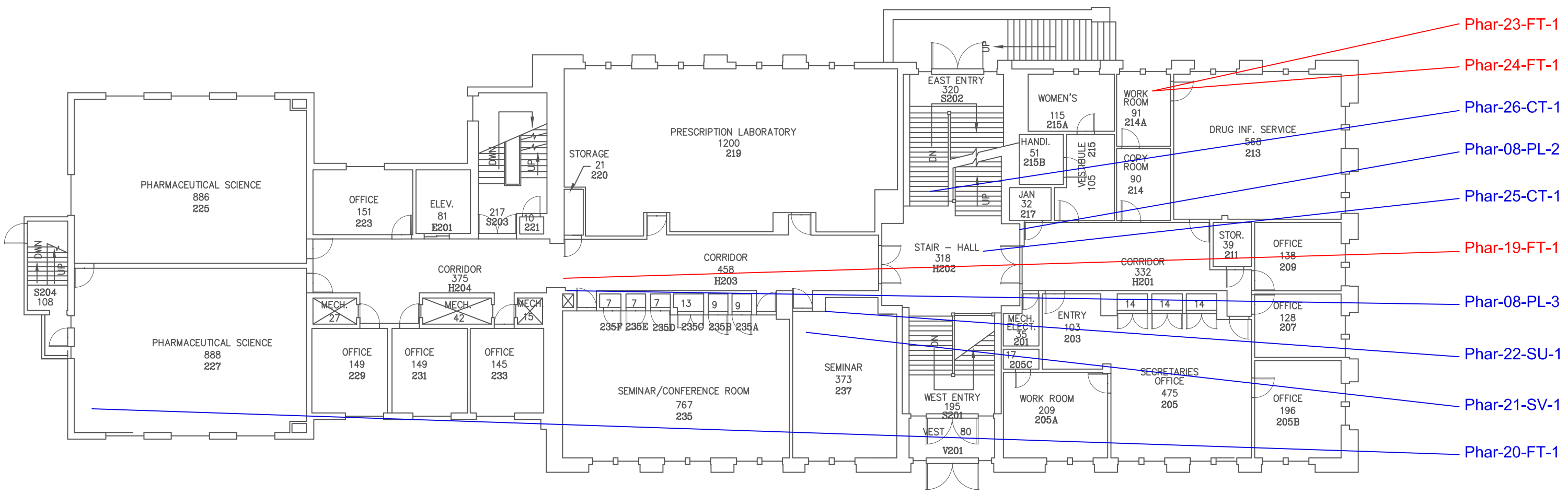


Sample ID # Key
OSU Provided Building Code
Homogeneous Material #
Material Code - Click for Details
Sample #
ACM Shown in Red
Non-ACM Shown in Blue

Forensic Analytical
 17400 SW Upper Boones Ferry Road, Suite 245
 Portland, Oregon 97224
 503/595.1001
 503/595.1006 fax
 www.forensica.com

* - This sample is part of a set in which one of the samples tested positive for asbestos.
 ** - This sample contained a trace amount of asbestos.

2nd Floor



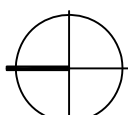
DATE: 9-30-08
 DRN. BY: RAS
 PAGE #: SAM - 2/5

CLIENT: OSU Pharmacy
 PROJECT: 1601 SW Jefferson Way
 LOCATION: Conavalls, Oregon 97331
 PROJECT #: P-16230

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REVISIONS

Pharmacy
 2nd Floor
 Sample Locations

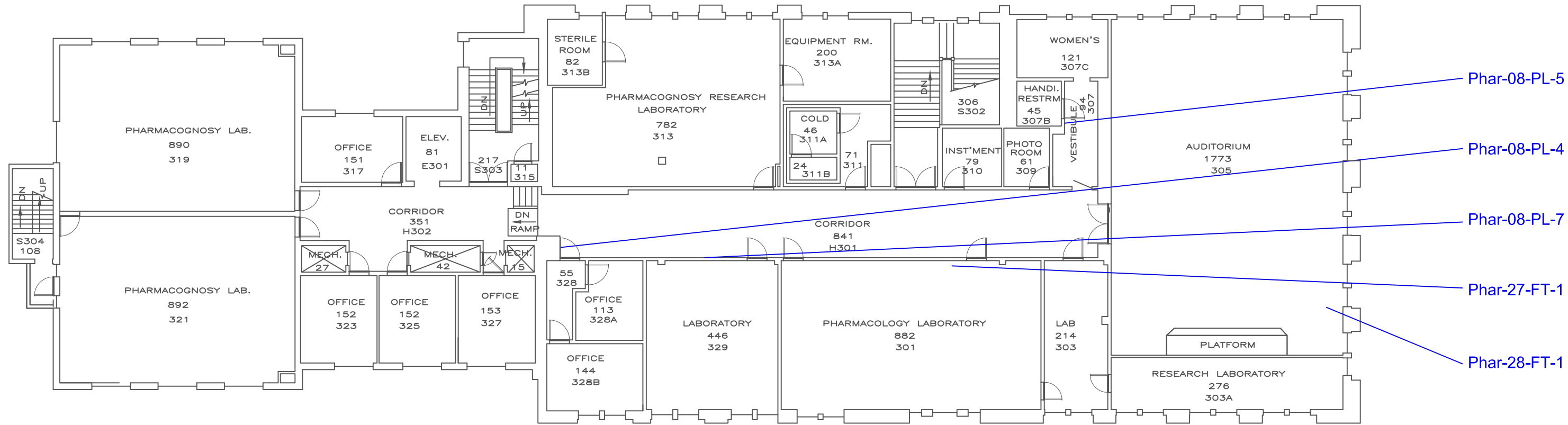
Report North

 No Scale

Sample ID # Key
OSU Provided Building Code
Homogeneous Material #
Material Code - Click for Details
Sample #
ACM Shown in Red
Non-ACM Shown in Blue

Forensic Analytical
 17400 SW Upper Boones Ferry Road, Suite 245
 Portland, Oregon 97224
 503/595.1001
 503/595.1006 fax
 www.forensica.com

* - This sample is part of a set in which one of the samples tested positive for asbestos.
 ** - This sample contained a trace amount of asbestos.

3rd Floor

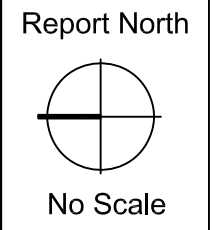


DATE: 9-30-08
 CLIENT: OSU Pharmacy
 PROJECT: 1601 SW Jefferson Way
 LOCATION: Conavills, Oregon 97331
 DRN. BY: RAS
 PAGE #: 3/5
 PROJECT #: P.16230

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REVISIONS

Pharmacy
 3rd Floor
 Sample Locations



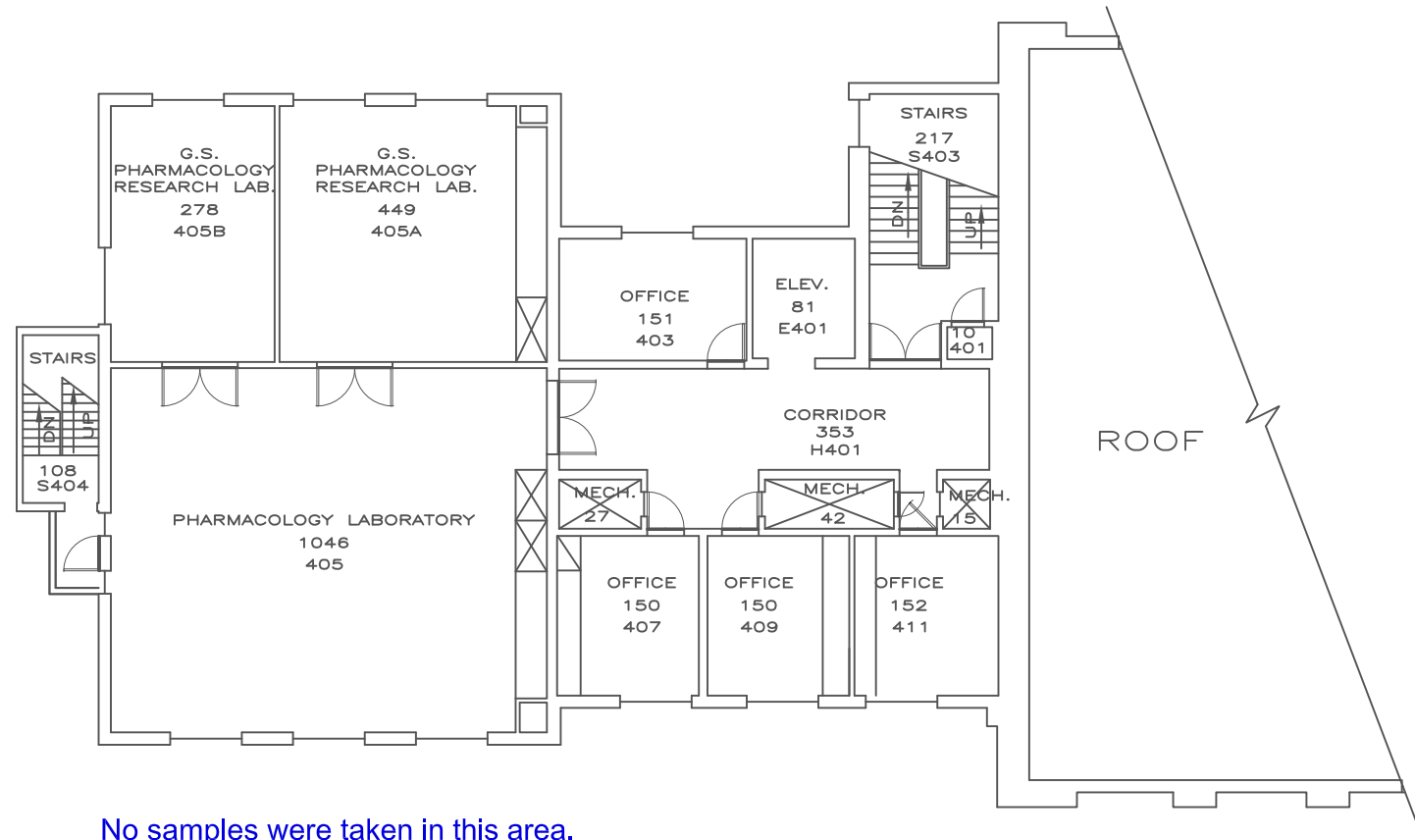
Sample ID # Key

OSU Provided Building Code	ABC-00-FT-1
Homogeneous Material #	
Material Code - Click for Details	
Sample #	
ACM Shown in Red	
Non-ACM Shown in Blue	

Forensic Analytical
 17400 SW Upper Boones Ferry Road, Suite 245
 Portland, Oregon 97224
 503/595.1001
 503/595.1006 fax
 www.forensica.com

* - This sample is part of a set in which one of the samples tested positive for asbestos.
 ** - This sample contained a trace amount of asbestos.

4th Floor



No samples were taken in this area.

DATE:	9-30-08
CLIENT:	OSU Pharmacy
PROJECT:	1601 SW Jefferson Way
LOCATION:	Corvallis, Oregon 97331
DRN. BY:	RAS
PAGE #:	SAM - 4/5
PROJECT #:	P.16230

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REVISIONS

Pharmacy 4th Floor Sample Locations

Report North

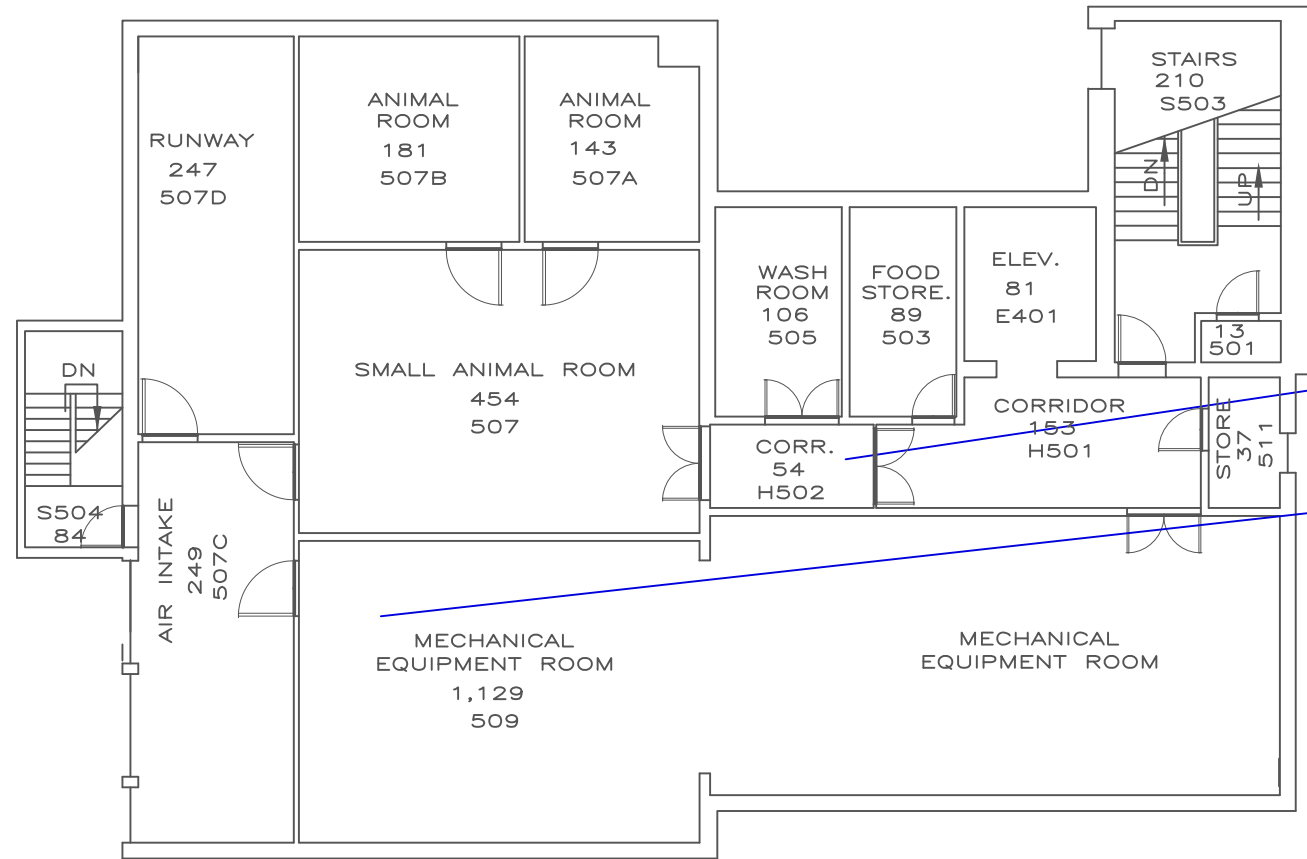
No Scale

Sample ID # Key
OSU Provided Building Code
Homogeneous Material #
Material Code - Click for Details
Sample #
ACM Shown in Red
Non-ACM Shown in Blue

Forensic Analytical
 17400 SW Upper Boones Ferry Road, Suite 245
 Portland, Oregon 97224
 503/595.1001
 503/595.1006 fax
 www.forensica.com

* - This sample is part of a set in which one of the samples tested positive for asbestos.
 ** - This sample contained a trace amount of asbestos.

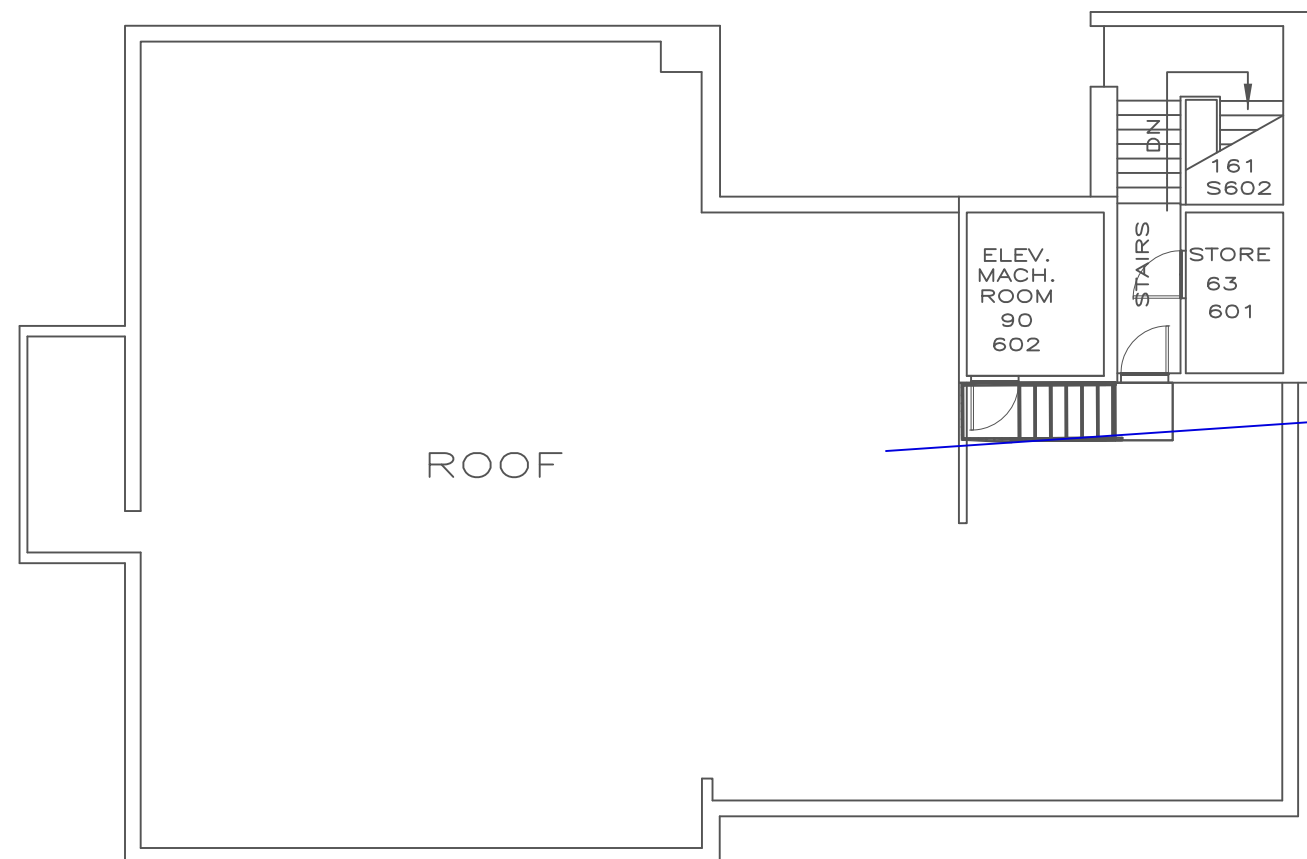
5th Floor



Phar-29-FM-1

Phar-30-PW-1

Roof



Phar-31-RP-1

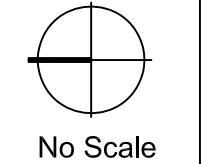
DATE:	9-30-08
DRN. BY:	RAS
PAGE #:	SAM - 5/5
CLIENT:	OSU Pharmacy
PROJECT:	1601 SW Jefferson Way
LOCATION:	Corvallis, Oregon 97331
PROJECT #:	P.16230

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REVISIONS

Pharmacy 5th Floor & Roof Sample Locations

Report North



Sample ID # Key
OSU Provided Building Code
Homogeneous Material #
Material Code - Click for Details
Sample #
ACM Shown in Red
Non-ACM Shown in Blue
ABC-00-FT-1

Forensic Analytical
 17400 SW Upper Boones Ferry Road, Suite 245
 Portland, Oregon 97224
 503/595.1001
 503/595.1006 fax
 www.forensica.com

* - This sample is part of a set in which one of the samples tested positive for asbestos.
 ** - This sample contained a trace amount of asbestos.

APPENDIX C

**LABORATORY ANALYSIS REPORTS
AND CHAIN OF CUSTODY RECORDS**



Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Forensic Analytical Consulting Svcs
 Richard Carlin
 17400 SW Upper Boones Ferry Rd
 Suite 245
 Durham, OR 97224

Client ID: PE21
Report Number: B116503
Date Received: 08/28/08
Date Analyzed: 09/03/08
Date Printed: 09/03/08
First Reported: 09/03/08

Job ID/Site: PJ6230 - Pharmacy Oregon State University - 1601 SW Jefferson Ave - Asbestos Survey - Corvallis, OR
Date(s) Collected: 08/27/2008

FASI Job ID: PE21
Total Samples Submitted: 39
Total Samples Analyzed: 39

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
Phar-01-FT-1	10792669						
Layer: Brown Tile		Chrysotile	7 %				
Layer: Black Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (7%)					
Cellulose (Trace)							
Phar-02-FT-1	10792670						
Layer: Brown Tile		Chrysotile	2 %				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (2%)					
Cellulose (Trace)							
Phar-03-TP-1	10792671						
Layer: Black Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (95 %)							
Phar-04-TSI-1	10792672						
Layer: Yellow Fibrous Material			ND				
Layer: Foil			ND				
Layer: Off-White Fibrous Material			ND				
Layer: Off-White Non-Fibrous Coating			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %) Fibrous Glass (80 %)							
Phar-04-TSI-2	10792673						
Layer: Yellow Fibrous Material			ND				
Layer: Foil			ND				
Layer: Off-White Fibrous Material			ND				
Layer: Off-White Non-Fibrous Coating			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %) Fibrous Glass (80 %)							
Phar-04-TSI-3	10792674						
Layer: Foil			ND				
Layer: Off-White Fibrous Material			ND				
Layer: Off-White Non-Fibrous Coating			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (75 %) Fibrous Glass (7 %)							

Client Name: Forensic Analytical Consulting Svcs

Report Number: B116503

Date Printed: 09/03/08

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
Phar-05-CT-1	10792675						
Layer: Grey Fibrous Tile		Amosite	2 %				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (2%)					
Cellulose (2 %)	Fibrous Glass (90 %)						
Phar-06-CT-1	10792676						
Layer: Grey Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %)	Fibrous Glass (45 %)						
Phar-07-SU-1	10792677						
Layer: Grey Semi-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %)							
Phar-08-PL-1	10792678						
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-08-PL-2	10792679						
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-08-PL-3	10792680						
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-08-PL-4	10792681						
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-08-PL-5	10792682						
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Forensic Analytical Consulting Svcs

Report Number: B116503

Date Printed: 09/03/08

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
Phar-08-PL-6	10792683						
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-08-PL-7	10792684						
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-09-CT-1	10792685						
Layer: White Semi-Fibrous Material			ND				
Layer: Tan Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %) Fibrous Glass (10 %)							
Phar-10-FT-1	10792686						
Layer: Off-White Tile			ND				
Layer: Black Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-11-CB-1	10792687						
Layer: Tan Non-Fibrous Material			ND				
Layer: Brown Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-12-SV-1	10792688						
Layer: Tan Sheet Flooring			ND				
Layer: Fibrous Backing			ND				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)							
Phar-13-ST-1	10792689						
Layer: Brown Non-Fibrous Material			ND				
Layer: Brown Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-14-FT-1	10792690						
Layer: Grey Tile			ND				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Forensic Analytical Consulting Svcs

Report Number: B116503

Date Printed: 09/03/08

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
Phar-15-FT-1	10792691						
Layer: Brown Tile			ND				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-16-FT-1	10792692						
Layer: Off-White Tile			ND				
Layer: Black Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-17-FT-1	10792693						
Layer: Beige Non-Fibrous Material			ND				
Layer: Off-White Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-18-FT-1	10792694						
Layer: Off-White Tile			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-19-FT-1	10792695						
Layer: Brown Tile		Chrysotile	Trace				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							
Phar-20-FT-1	10792696						
Layer: Tan Tile			ND				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-21-SV-1	10792697						
Layer: Light Grey Sheet Flooring			ND				
Layer: Fibrous Backing			ND				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)							
Phar-22-SU-1	10792698						
Layer: Black Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-23-FT-1	10792699						
Layer: Brown Tile			ND				
Layer: Black Mastic		Chrysotile	3 %				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							

Client Name: Forensic Analytical Consulting Svcs

Report Number: B116503

Date Printed: 09/03/08

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
Phar-24-FT-1	10792700						
Layer: Brown Tile			ND				
Layer: Black Mastic		Chrysotile	5 %				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							
Phar-25-CT-1	10792701						
Layer: Grey Fibrous Tile			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (2 %) Fibrous Glass (90 %)							
Phar-26-CT-1	10792702						
Layer: Grey Fibrous Tile			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (2 %) Fibrous Glass (90 %)							
Phar-27-FT-1	10792703						
Layer: Off-White Tile			ND				
Layer: Yellow Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-28-FT-1	10792704						
Layer: Brown Tile			ND				
Layer: Black Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-29-FM-1	10792705						
Layer: Yellow Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
Phar-30-PW-1	10792706						
Layer: Black Semi-Fibrous Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %)							
Phar-31-RP-1	10792707						
Layer: Black Semi-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace) Synthetic (7 %)							

Client Name: Forensic Analytical Consulting Svcs

Report Number: B116503

Date Printed: 09/03/08

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
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James Flores, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Analytical results and reports are generated by Forensic Analytical at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by Forensic Analytical to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by Forensic Analytical. The client is solely responsible for the use and interpretation of test results and reports requested from Forensic Analytical. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government. Forensic Analytical is not able to assess the degree of hazard resulting from materials analyzed. Forensic Analytical reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.



Forensic Analytical

BULK SAMPLE REQUEST FORM

Page 1 of 4

Client: PE21 FACS Portland Oregon State University	Sampled by: DKR	PM: Richard Carlin Date: 8-27-08
Contact: Richard Carlin Phone: (503) 595-1001	Special Instructions: E-mail results to rickcarlin@forensica.com and rtracy@forensica.com	
Site: PJ6230 Pharmacy Oregon State University 1601 SW Jefferson Ave Asbestos Survey Corvallis OR	Turnaround Time: 1-Day 2-Day 3-Day <input checked="" type="checkbox"/> 5-Day Other	Due Date & Time: 9-3-08 by 4pm
Client No.: C6013:00014 FACS Job#: PJ6230	Analysis: <u>PLM Standard</u> / Point Count / Flame AA (Pb) / Other: Analyze bracketed sets to 1st positive	

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
Phar-01-FT-1	FT, 9x9, light brown speckled (black)	H111 H111	88		
02-FT-1	FT, 9x9, tan w/ brown + white streaks (tan)	H113	89		
03-TP-1	Tan paper on ceiling	101B	86		
04-TSI-1	Pipe insul. encap sealant on fib. insul. pipe	101B	87		
↓ 2	↓	101B	-		
↓ 3	↓	101B	-		
05-CT-1	CT, 2x4, pinholes (circle pattern)	103	90		
06-CT-1	CT, 2x4, f/p	H112	91		
07-SU-1	SU, gray	105	92		
↓ 08-PL-1	PL	105	93		

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
 RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture
 Shipped via: Fed Ex Airborne UPS US Mail Courier XXX Drop Off Other: Friable Cond. Yes: No Fair / Poor

Relinquished by:	Received by:
Date & Time: 8-27-08	Date & Time: 8/28/08
Condition Acceptable <input checked="" type="checkbox"/> No <input type="checkbox"/>	



Client: PE21 FACS Portland Oregon State University	Sampled by: DKR	PM: Richard Carlin Date: 8-27-08
Contact: Richard Carlin Phone: (503) 595-1001	Special Instructions: E-mail results to rickcarlin@forensica.com and rtracy@forensica.com	
Site: PJ6230 Pharmacy Oregon State University 1601 SW Jefferson Ave Asbestos Survey Corvallis OR	Turnaround Time:	1-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> 3-Day <input checked="" type="checkbox"/> 5-Day <input type="checkbox"/> Other <input type="checkbox"/> Due Date & Time:
Client No.: C6013:00014 FACS Job#: PJ6230	Analysis: <u>PLM Standard</u> / Point Count / Flame AA (Pb) / Other:	



Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
Phor-08-PL-2	Plaster	H202	—		
3		H203	—		
4		H301	—		
5		307	—		
6		H111 H111	—		
7		H301	—		
09-CT-1	CT, 12x4, DW	107A	94		
10-FT-1	FT, 12x12, off white w/ brown + white specks (black)	107	95		
11-CB-1	CB, 4" tan (brown)	107	96		
12-SV-1	SVitan sand pattern	109B	97		

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
 RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture
 Shipped via: Fed Ex Airborne US Mail Courier Drop Off Other: _____
 Friable Yes/No Cond. Fair/Poor

Relinquished by:	Received by: OK
Date & Time: 8-27-08	Date & Time: 8/28/08

107A
 Condition Acceptable Yes No



Client: PE21 FACS Portland Oregon State University	Sampled by: DKR	PM: Richard Carlin Date: 8-27-08
Contact: Richard Carlin Phone: (503) 595-1001	Special Instructions: E-mail results to rickcarlin@forensica.com and rtracy@forensica.com	
Site: PJ6230 Pharmacy Oregon State University 1601 SW Jefferson Ave Asbestos Survey Corvallis OR	Turnaround Time:	1-Day 2-Day 3-Day <input checked="" type="checkbox"/> 5-Day Other Due Date & Time:
Client No.: C6013:00014 FACS Job#: PJ6230	Analysis: <u>PLM Standard</u> / Point Count / Flame AA (Pb) / Other:	

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
Phor-13-ST-1	ST, brown w/ tan streaks	S101	98		
14-FT-1	FT, 12x12, brown w/ dark brown specks (tan)	111	99		
15-FT-1	FT, 9x9 medium brown w/ white + brown streaks (tan)	115	100		
16-FT-1	FT, 12x12, brown specked (black)	115	101		
17-FT-1	FT, 16x16, tan non-slip (white)	H111	102		
18-FT-1	FT, 12x12, white w/ tan + grey specks	125	103		
19-FT-1	FT, 12x12, brown w/ cream + dark brown specks (black)	H203	104		
20-FT-1	FT, 12x12, tan w/ brown + white specks (tan)	227	105		
21-SV-1	SV, grey w/ white + blue + pink specks	237	106		
✓ 22-SU-1	SU, black	237	107		

WB - Wallboard JC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
 RSF - Resilient Sheet Flooring CT - Ceiling Tile SAAM - Spray-Applied Acoustical Material WT - Wall Texture

Friable
 Yes / No
 Cond.
 Fair / Poor

Shipped via: Fed Ex Airborne UPS US Mail Courier XXX Drop Off Other:

Relinquished by:	Received by:
Date & Time: 8-27-08	Date & Time: 8/28/08
	Condition Acceptable <input checked="" type="checkbox"/> No



Client: PE21 FACS Portland Oregon State University		Sampled by: DKR		PM: Richard Carlin Date: 8-27-08	
Contact: Richard Carlin Phone: (503) 595-1001		Special Instructions: E-mail results to rickcarlin@forensica.com and rtracy@forensica.com			
Site: PJ6230 Pharmacy Oregon State University 1601 SW Jefferson Ave Asbestos Survey Corvallis OR		Turnaround Time:		Due Date & Time:	
Client No.: C6013:00014 FACS Job#: PJ6230		Analysis: PLM Standard		Point Count / Flame AA (Pb) / Other:	

Sample Number	Material Description	Sample Location	Friable	Cond.	Quantity
Phar-23-FT-1	FT, 12x12, off white + brown w/ off-white + orange specks (black)	214A	108		
24-FT-1	FT, 12x12, pale orange w/ brown specks (black)	214A	109		
25-CT-1	CT, 12x12, pinholes (circle pattern)	H202	110		
26-CT-1	CT, 12x12, long fissures	S202	111		
27-FT-1	FT, 12x12, off-white + peach specked (tan)	301	112		
28-FT-1	FT, 9x9, dark dark brown w/ cream + red streaks (black)	305	113		
29-FM-1	Fm, yellow pebble pattern	H502	114		
30-FM-1	Pipe wrap, asphaltic	509	115		
31-RP-1	RP + R	Roof			

WB - Wallboard IC - Joint Compound FT - Floor Tile FTM - Floor Tile Mastic BBM - Baseboard Mastic
 RSE - Resilient Sheet Flooring CT - Ceiling Tile SPM - Spray-Applied Acoustical Material WT - Wall Texture

Shipped via: Fed Ex Airborne US Mail Courier Drop Off Other: _____

Friable: Yes/No Good: Fair/Poor

Relinquished by:	Received by:
Date & Time: 8-27-08	Date & Time: 8/28/08

Condition Acceptable Yes/No

APPENDIX D

GLOSSARY OF TERMS

GLOSSARY OF TERMS

ACM - Asbestos-containing material: Any material containing more than one percent asbestos. This includes suspect and/or presumed ACM.

AHERA: Asbestos Hazard Emergency Response Act of 1986.

AHERA Building Inspector: A person who has successfully completed the training requirements for a building inspector established by EPA Asbestos Model Accreditation Plan; Interim Final Rule (40 CFR Part 763, Appendix C to Subpart E, I.B.3) and whose certification is current.

AHERA Project Designer: A person who has successfully completed the training requirements for an asbestos abatement project designer established by EPA regulations (40 CFR 763.90(g)) and whose certification is current.

Asbestos: Chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite and any of these minerals that have been chemically treated and/or altered.

Asbestos Building Inspection: A written report describing an inspection using the procedures contained in EPA regulations (40 CFR 763,86) to determine whether materials or structures to be worked on, renovated, removed, or demolished (including materials on the outside of structures) contain asbestos.

Authorized Person: Any person authorized by the employer and required by work duties to be present in regulated areas.

Chain of Custody Record: Legal documentation that follows samples from collection to the laboratory indicating who has been in possession of the samples.

Competent Person: A person capable of identifying asbestos hazards, selecting appropriate control strategies and having the authority to take prompt corrective measures. Additionally, for Class I and Class II work, one who is specially trained in a training course meeting the criteria of EPA's Model Accreditation Plan (40 CFR 763) for project designer or supervisor, or its equivalent and, for Class II work, who is trained in an operations and Maintenance O & M Course developed by EPA (40 CFR 76392 (a) (2)).

Contractor: The asbestos abatement contractor.

EPA: United States Environmental Protection Agency

Friable: Asbestos-containing material that can be crumbled, pulverized or reduced to powder when dry, by hand pressure.

HEPA - High-Efficiency Particulate Air (Filter): A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

Intact: ACM that has not crumbled, been pulverized, or otherwise deteriorated so that its no longer likely to be bound within its matrix.

LF: Linear feet

NESHAPs: National Emission Standard for Hazardous Air Pollutants, 40 CFR part 61.

NVLAP: National Voluntary Laboratory Accreditation Program

OSHA: United States Department of Labor - Occupational Safety and Health Administration.

Owner: The legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building and/or facility in which the abatement activities described in this document take place.

Owners Representative: A person authorized by the Owner to act on the Owners behalf.

PLM: Polarized Light Microscopy

PACM - Presumed Asbestos Containing Material: Thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of a material as PACM may be rebutted through PLM analysis of samples obtained by certified inspectors.

Removal: All operations where ACM and/or PACM is taken out or stripped from structures or substrate, and includes demolition operations.

Sq. Ft.: Square feet

Surfacing Material: Material that is sprayed, troweled-on or otherwise applied to surfaces.

Suspect ACBM: Material that is suspected of containing asbestos that has not been sampled and analyzed for asbestos content.

TSI - Thermal System Insulation: ACM applied to pipes, fittings, boilers, breaching, tanks, ducts or other structural components to prevent heat loss or gain.

APPENDIX E

ACCREDITATION

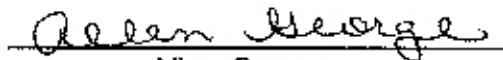
Certificate of Completion

This is to certify that

Robin Sharpe

has attended and successfully completed the requisite training for
accreditation under TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR
EPA AHERA (Asbestos Hazard Emergency Response Act),
and ASHARA Model Accreditation Program requirements for
AHERA INSPECTOR REFRESHER

as presented by
Bureau Veritas North America, Inc.



Allen George
INSTRUCTOR

Course Date: 04/29/08
Certification # 08-1061
Certificate Expiration Date: 04/29/09



**BUREAU
VERITAS**

3800 NE Sandy Boulevard, Suite 101, Portland, Oregon 97232 • (971) 244-1200 • fax (971) 244-1209

Certificate of Completion

This is to certify that

Noal C. Kraft

has satisfactorily completed
4 hours of refresher training as an
Asbestos Building Inspector

to comply with the training requirements of
TSCA Title III / 40 CFR 763 (AHERA)

Certificate Number: 1029789



Instructor

EPA Provider Cert. Number: 1085



Jun 18, 2008

Date(s) of Training

Exam Score: NA

Expiration Date: Jun 18, 2009

Argus Pacific, Inc. • 1900 W. Nickerson, Suite 315 • Seattle, Washington • 98119 • (206) 285.3373 • fax (206) 285.3927

Certificate of Completion

This is to certify that

Dan K. Rouse

has satisfactorily completed
4 hours of refresher training as an
Asbestos Building Inspector

to comply with the training requirements of
TSCA Title III / 40 CFR 763 (AHERA)

Certificate Number: 1029792



Instructor

EPA Provider Cert. Number: 1085



Jun 18, 2008

Date(s) of Training

Exam Score: NA

Expiration Date: Jun 18, 2009

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APPENDIX F

PREVIOUS HALL-KIMBRELL SURVEY

OREGON STATE UNIVERSITY

BLDG. 030 PHARMACY

Findings and Observations

Spreadsheets

Petrographic Analysis

Sample Location Drawings

Miscellaneous Materials

Photographs

PHARMACY BUILDING - 030 48,200 SQ. FT.

The Pharmacy Building is a five story brick and concrete structure with a full basement and a partial attic. It is heated by a low pressure steam system. The building is used as office, laboratories, and classrooms.

Debris located in the middle section of the attic space was determined asbestos-containing by laboratory analysis and should be removed.

Preformed block and corrugated pipe coverings with associated mudded joint packings and mudded joint packings on nonsuspect pipe covering located throughout the building were determined asbestos-containing by laboratory analysis. Other material determined asbestos-containing included tank insulation in room 509 and select drop-in ceiling panels on floors one through four. These materials were in fair to good condition. The thermal system insulation should be repaired and monitored and the ceiling panels should be removed.

Nonfriable material that was not sampled but often contains asbestos included vinyl floor tiles observed on the the first through fourth floors, linoleum in various areas of the fifth floor, and transite lined exhaust hoods, laboratory counter tops, and oven gaskets in several laboratories throughout the building.

Material that was sampled but determined nonasbestos by laboratory analysis included external duct insulation in 507, 507C, and in hallways on the fifth floor; select drop-in ceiling panels on floors one through four; acoustical ceiling tile on the second floor, and mudded joint packings on steam lines on the third floor.

ASBESTOS ASSESSMENT SURVEY
Oregon State University

Project Number: 5749032V.F
Building Number: 030
Building Name: Pharmacy Building
Address : Corvallis, OR

Page: 1
Building Type: 01, 05
Year Constructed: 1924
Date Inspected: 01/10/91
Inspector: Taylor

LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
<p>** Area 1. 1st Floor-Mechanical Room 101B AHERA Damage Code: 1 Response Action: 67 Potential for Disturbance: 2</p>												
Throughout	1	3	mjp on nonsuspect pipe cover	HPS/R	5%	6 6 in. joint	OMA	18	IV	\$232	\$136	\$368
<p>MS# Sample # %ASB</p> <p>1 - 755400 5%</p> <p>1 - 755401 5%</p> <p>1 - 755402 5%</p>												
Throughout	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 4 in. joint	OMA	18	IV	\$112	\$62	\$174
Throughout	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	6 8 in. joint	OMA	18	IV	\$289	\$170	\$459
<p>MS# Sample # %ASB</p> <p>2 - 755403 5%</p> <p>2 - 755404 5%</p> <p>2 - 755405 5%</p>												
<p>High pressure steam from the tunnel system comes into the room and converts to low pressure and goes throughout the building. The room has an access door that is 3'x5'. The room has cement floors and is about 5' wide and about 8' high and 10' to 12' long. The pipes go up the north wall and go south along the ceiling and back north.</p>										<p>AREA # 1. TOTALS \$633 \$368 \$1,001</p>		

ASBESTOS ASSESSMENT SURVEY
Oregon State University

Page: 2

Project Number: 5749032V.F
Building Number: 030
Building Name: Pharmacy Building
Address : Corvallis, OR

Building Type: 01, 05
Year Constructed: 1924
Date Inspected: 01/10/91
Inspector: Taylor

LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
** Area	2. 1st Floor		AHERA Damage Code: 1	Response Action: 7		Potential for Disturbance: 2						
Room 103	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	5 4 in. joint	OMA	25	III	\$140	\$78	\$218
Room 129	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 4 in. joint	OMA	25	III	\$112	\$62	\$174
Room 131	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 4 in. joint	OMA	25	III	\$112	\$62	\$174
Hallway H111	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	6 4 in. joint	OMA	25	III	\$169	\$94	\$263
Room 127	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 4 in. joint	OMA	25	III	\$112	\$62	\$174
Room 109	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	8 4 in. joint	OMA	25	III	\$225	\$125	\$350
Room 115A	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 4 in. joint	OMA	25	III	\$112	\$62	\$174
Room 111	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	9 4 in. joint	OMA	25	III	\$253	\$140	\$393
Room 121	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	3 4 in. joint	OMA	25	III	\$84	\$47	\$131
Room 111-back room	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	3 4 in. joint	OMA	25	III	\$84	\$47	\$131
Hallway H112	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	2 4 in. joint	OMA	25	III	\$56	\$31	\$87
Room 125	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	12 4 in. joint	OMA	25	III	\$337	\$187	\$524
Room 123	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	12 4 in. joint	OMA	25	III	\$337	\$187	\$524
Hallway H113	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	1 4 in. joint	OMA	25	III	\$28	\$16	\$44
Room 115	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	1 4 in. joint	OMA	25	III	\$28	\$16	\$44
Hallway H111	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	6 6 in. joint	OMA	25	III	\$232	\$136	\$368
Room 111	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	6 6 in. joint	OMA	25	III	\$232	\$136	\$368
Room 115A	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	1 6 in. joint	OMA	25	III	\$39	\$23	\$62
Room 109	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	1 6 in. joint	OMA	25	III	\$39	\$23	\$62

MS#	Sample #	%ASB
2	- 755403	5%
2	- 755404	5%
2	- 755405	5%

ASBESTOS ASSESSMENT SURVEY
Oregon State University

Project Number: 5749032V.F
Building Number: 030
Building Name: Pharmacy Building
Address : Corvallis, OR

Page: 3
Building Type: 01, 05
Year Constructed: 1924
Date Inspected: 01/10/91
Inspector: Taylor

LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Room 107A	3	3	pipe covering	LPS/R	15%	8 ft. 4 in. O.D.	OMA	25	III	\$71	\$45	\$116
Room 107	3	3	pipe covering	LPS/R	15%	2 ft. 8 in. O.D.	OMA	25	III	\$28	\$20	\$48
MS# Sample # %ASB												
3 - 755406 15%												
3 - 755407 15%												
3 - 755408 15%												
Room 107A	4	3	mjp on pipe covering	LPS/R	15%	3 4 in. joint	OMA	25	III	\$84	\$47	\$131
Room 107	4	3	mjp on pipe covering	LPS/R	15%	2 8 in. joint	OMA	25	III	\$96	\$57	\$153
MS# Sample # %ASB												
4 - 755409 5%												
4 - 755410 15%												
4 - 755411 5%												
Room 115A	5	3	corrugated pipe covering	LPS/R	55%	10 ft. 4 in. O.D.	OMA	38	III	\$89	\$56	\$145
Room 115	5	3	corrugated pipe covering	LPS/R	55%	6 ft. 4 in. O.D.	OMA	38	III	\$54	\$33	\$87
MS# Sample # %ASB												
5 - 755412 55%												
5 - 755413 55%												
5 - 755414 55%												

ASBESTOS ASSESSMENT SURVEY
Oregon State University

Project Number: 5749032V.F
Building Number: 030
Building Name: Pharmacy Building
Address : Corvallis, OR

Page: 4
Building Type: 01, 05
Year Constructed: 1924
Date Inspected: 01/10/91
Inspector: Taylor

LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Room 115A	6	3	mjp on corrugated pipe cover	LPS/R	15%	8 4 in. joint	OMA	25	III	\$225	\$125	\$350
Room 115	6	3	mjp on corrugated pipe cover	LPS/R	15%	6 4 in. joint	OMA	25	III	\$169	\$94	\$263
<p>MS# Sample # %ASB</p> <p>6 - 755415 15%</p> <p>6 - 755416 15%</p> <p>6 - 755417 7%</p>												
Room 115A	7	3	mjp on nonsuspect pipe cover	DW	4%	4 4 in. joint	OMA	25	III	\$112	\$62	\$174
Hallway H112	7	3	mjp on nonsuspect pipe cover	DW	4%	15 4 in. joint	OMA	25	III	\$421	\$234	\$655
Hallway L101	7	3	mjp on nonsuspect pipe cover	DW	4%	2 4 in. joint	OMA	25	III	\$56	\$31	\$87
Hallway H111	7	3	mjp on nonsuspect pipe cover	DW	4%	30 4 in. joint	OMA	25	III	\$843	\$468	\$1,311
<p>MS# Sample # %ASB</p> <p>7 - 755418 4%</p> <p>7 - 755419 4%</p> <p>7 - 755420 4%</p>												
This area includes labs and offices. The piping runs up the wall and was in fair to good condition.							AREA #	2. TOTALS		\$4,979	\$2,806	\$7,785

** Area 3. 1st Floor-Above Drop Ceiling

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 2

ASBESTOS ASSESSMENT SURVEY
Oregon State University

Project Number: 5749032V.F
Building Number: 030
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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Room 131	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	12 4 in. joint	OMA	15	IV	\$337	\$187	\$524
Room 127	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	24 4 in. joint	OMA	15	IV	\$674	\$375	\$1,049
Room 123	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	65 4 in. joint	OMA	15	IV	\$1,826	\$1,015	\$2,841
Room 101	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 4 in. joint	OMA	15	IV	\$112	\$62	\$174
Room 125	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	60 4 in. joint	OMA	15	IV	\$1,685	\$937	\$2,622
Room 135	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	20 4 in. joint	OMA	15	IV	\$562	\$312	\$874
Room 103	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	10 4 in. joint	OMA	15	IV	\$281	\$156	\$437
Room 129	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	15 4 in. joint	OMA	15	IV	\$421	\$234	\$655
Room 135	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 6 in. joint	OMA	15	IV	\$155	\$91	\$246
Room 135	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	4 8 in. joint	OMA	15	IV	\$193	\$113	\$306

MS# Sample # %ASB

2 - 755403 5%
2 - 755404 5%
2 - 755405 5%

Room 107	3	3	pipe covering	LPS/R	15%	16 ft. 4 in. O.D.	OMA	15	IV	\$143	\$89	\$232
Room 101	3	3	pipe covering	LPS/R	15%	20 ft. 4 in. O.D.	OMA	15	IV	\$178	\$112	\$290
Room 107A	3	3	pipe covering	LPS/R	15%	12 ft. 4 in. O.D.	OMA	15	IV	\$107	\$67	\$174
Room 101	3	3	pipe covering	LPS/R	15%	16 ft. 6 in. O.D.	OMA	15	IV	\$208	\$130	\$338
Room 107A	3	3	pipe covering	LPS/R	15%	35 ft. 8 in. O.D.	OMA	15	IV	\$495	\$354	\$849
Room 107	3	3	pipe covering	LPS/R	15%	20 ft. 8 in. O.D.	OMA	15	IV	\$283	\$202	\$485

MS# Sample # %ASB

3 - 755406 15%
3 - 755407 15%
3 - 755408 15%

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Room 107	4	3	mjp on pipe covering	LPS/R	15%	16 4 in. joint	OMA	15	IV	\$449	\$250	\$699
Room 107A	4	3	mjp on pipe covering	LPS/R	15%	12 4 in. joint	OMA	15	IV	\$337	\$187	\$524
Room 101	4	3	mjp on pipe covering	LPS/R	15%	15 4 in. joint	OMA	15	IV	\$421	\$234	\$655
Room 107A	4	3	mjp on pipe covering	LPS/R	15%	1 8 in. joint	OMA	15	IV	\$48	\$28	\$76
Room 107	4	3	mjp on pipe covering	LPS/R	15%	1 8 in. joint	OMA	15	IV	\$48	\$28	\$76
MS# Sample # %ASB												
4 - 755409 5%												
4 - 755410 15%												
4 - 755411 5%												
Room 103	5	3	corrugated pipe covering	LPS/R	55%	30 ft. 4 in. O.D.	OMA	23	III	\$268	\$167	\$435
Room 103B	5	3	corrugated pipe covering	LPS/R	55%	9 ft. 4 in. O.D.	OMA	23	III	\$80	\$50	\$130
Room 133	5	3	corrugated pipe covering	LPS/R	55%	24 ft. 4 in. O.D.	OMA	23	III	\$214	\$134	\$348
Room 103	5	3	corrugated pipe covering	LPS/R	55%	60 ft. 6 in. O.D.	OMA	23	III	\$779	\$487	\$1,266
Room 133	5	3	corrugated pipe covering	LPS/R	55%	65 ft. 6 in. O.D.	OMA	23	III	\$844	\$527	\$1,371
Room 103B	5	3	corrugated pipe covering	LPS/R	55%	12 ft. 6 in. O.D.	OMA	23	III	\$156	\$97	\$253
MS# Sample # %ASB												
5 - 755412 55%												
5 - 755413 55%												
5 - 755414 55%												
Room 103B	6	3	mjp on corrugated pipe cover	LPS/R	15%	9 4 in. joint	OMA	15	IV	\$253	\$140	\$393

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS		
Room 103	6	3	mjp on corrugated pipe cover	LPS/R	15%	30 4 in. joint	OMA	15	IV	\$843	\$468	\$1,311		
Room 133	6	3	mjp on corrugated pipe cover	LPS/R	15%	30 4 in. joint	OMA	15	IV	\$843	\$468	\$1,311		
Room 103	6	3	mjp on corrugated pipe cover	LPS/R	15%	4 6 in. joint	OMA	15	IV	\$155	\$91	\$246		
Room 133	6	3	mjp on corrugated pipe cover	LPS/R	15%	1 6 in. joint	OMA	15	IV	\$39	\$23	\$62		
MS# Sample # %ASB														
6 - 755415 15%														
6 - 755416 15%														
6 - 755417 7%														
Room 123	7	3	mjp on nonsuspect pipe cover	DW	4%	10 4 in. joint	OMA	15	IV	\$281	\$156	\$437		
Room 133	7	3	mjp on nonsuspect pipe cover	DW	4%	5 4 in. joint	OMA	15	IV	\$140	\$78	\$218		
Room 125	7	3	mjp on nonsuspect pipe cover	DW	4%	10 4 in. joint	OMA	15	IV	\$281	\$156	\$437		
Room 121	7	3	mjp on nonsuspect pipe cover	DW	4%	20 4 in. joint	OMA	15	IV	\$562	\$312	\$874		
Room 107A	7	3	mjp on nonsuspect pipe cover	DW	4%	5 4 in. joint	OMA	15	IV	\$140	\$78	\$218		
Room 107	7	3	mjp on nonsuspect pipe cover	DW	4%	4 4 in. joint	OMA	15	IV	\$112	\$62	\$174		
MS# Sample # %ASB														
7 - 755418 4%														
7 - 755419 4%														
7 - 755420 4%														
The pipe runs along the ceiling. The area is used for classrooms and labs.										AREA #	3. TOTALS	\$14,953	\$8,657	\$23,610

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
** Area 4. 1st Floor-Above Sheetrock												
			AHERA Damage Code: 1	Response Action: 67			Potential for Disturbance: 1					
Hallway H113	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	10 4 in. joint	OMA	15	IV	\$281	\$156	\$437
Hallway H113	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	3 6 in. joint	OMA	15	IV	\$116	\$68	\$184
MS#	Sample #	%ASB										
2	- 755403	5%										
2	- 755404	5%										
2	- 755405	5%										
Hallway H113	3	3	pipe covering	LPS/R	15%	25 ft. 6 in. O.D.	OMA	15	IV	\$325	\$203	\$528
MS#	Sample #	%ASB										
3	- 755406	15%										
3	- 755407	15%										
3	- 755408	15%										
Hallway H113	4	3	mjp on pipe covering	LPS/R	15%	2 6 in. joint	OMA	15	IV	\$77	\$45	\$122
MS#	Sample #	%ASB										
4	- 755409	5%										
4	- 755410	15%										
4	- 755411	5%										

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
There are two access holes to get to the pipes, about 15"x24". The pipes were in fair to good condition.							AREA #	4. TOTALS		\$799	\$472	\$1,271

** Area 5. 1st Floor-Pipe Chase

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 2

Room 131-south side of door	2	3	mjp on nonsuspect pipe cover	LPS/R	5%	2 4 in. joint	OMA	14	IV	\$56	\$31	\$87
MS#	Sample #	%ASB										
2	- 755403	5%										
2	- 755404	5%										
2	- 755405	5%										
Room 131-north side of door	7	3	mjp on nonsuspect pipe cover	DW	4%	5 4 in. joint	OMA	14	IV	\$140	\$78	\$218
North end of hall-by room 127	7	3	mjp on nonsuspect pipe cover	DW	4%	2 4 in. joint	OMA	14	IV	\$56	\$31	\$87
North end of hall-by room 127	7	3	mjp on nonsuspect pipe cover	DW	4%	1 6 in. joint	OMA	14	IV	\$39	\$23	\$62
Room 131-north side of door	7	3	mjp on nonsuspect pipe cover	DW	4%	3 8 in. joint	OMA	14	IV	\$144	\$85	\$229
MS#	Sample #	%ASB										
7	- 755418	4%										
7	- 755419	4%										
7	- 755420	4%										

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
There are 30"x36" access doors to the pipe tunnel. The area inside is 5'x10' and goes up through the next floors with gravel floors. The pipes were in good condition.							AREA #	5. TOTALS		\$435	\$248	\$683

** Area 6. 1st Floor-Ceiling

AHERA Damage Code: 4

Response Action: 67

Potential for Disturbance: 3

Room 121-2'x4'	8	7	drop or lay-in panel		5%	135 sq.ft.	OMG	52	II	\$759	\$275	\$1,034
Room 123-2'x4'	8	7	drop or lay-in panel		5%	815 sq.ft.	OMG	52	II	\$4,580	\$1,663	\$6,243
Room 101-2'x4'	8	7	drop or lay-in panel		5%	270 sq.ft.	OMG	52	II	\$1,517	\$551	\$2,068
Room 103-2'x4'	8	7	drop or lay-in panel		5%	790 sq.ft.	OMG	52	II	\$1,630	\$592	\$2,222
Room 103A-2'x4'	8	7	drop or lay-in panel		5%	90 sq.ft.	OMG	52	II	\$506	\$184	\$690
Room 103B-2'x4'	8	7	drop or lay-in panel		5%	90 sq.ft.	OMG	52	II	\$506	\$184	\$690
Room 105-2'x4'	8	7	drop or lay-in panel		5%	135 sq.ft.	OMG	52	II	\$759	\$275	\$1,034
Room 107A-2'x4'	8	7	drop or lay-in panel		5%	345 sq.ft.	OMG	52	II	\$1,939	\$704	\$2,643
Room 107-2'x4'	8	7	drop or lay-in panel		5%	445 sq.ft.	OMG	52	II	\$2,501	\$908	\$3,409
Room 109-front 1/2-2'x4'	8	7	drop or lay-in panel		5%	90 sq.ft.	OMG	52	II	\$506	\$184	\$690
Room 135-2'x4'	8	7	drop or lay-in panel		5%	280 sq.ft.	OMG	52	II	\$1,574	\$571	\$2,145
Room 131-2'x4'	8	7	drop or lay-in panel		5%	150 sq.ft.	OMG	52	II	\$843	\$306	\$1,149
Room 133-2'x4'	8	7	drop or lay-in panel		5%	820 sq.ft.	OMG	52	II	\$4,608	\$1,673	\$6,281
Room 129-2'x4'	8	7	drop or lay-in panel		5%	150 sq.ft.	OMG	52	II	\$843	\$306	\$1,149
Room 125-2'x4'	8	7	drop or lay-in panel		5%	815 sq.ft.	OMG	52	II	\$4,580	\$1,663	\$6,243
Room 127-2'x4'	8	7	drop or lay-in panel		5%	150 sq.ft.	OMG	52	II	\$843	\$306	\$1,149

MS# Sample # %ASB

8 - 755421 5%
8 - 755422 5%
8 - 755423 5%
8 - 755424 5%
8 - 755425 5%
8 - 755426 5%
8 - 755427 5%

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Room 101-2'x4'	9	3	drop or lay-in panel		0%	50 sq.ft.	OMG	0		\$0	\$0	\$0
Room 123-2'x4'	9	3	drop or lay-in panel		0%	75 sq.ft.	OMG	0		\$0	\$0	\$0
Room 125-2'x4'	9	3	drop or lay-in panel		0%	75 sq.ft.	OMG	0		\$0	\$0	\$0
Room 135-2'x4'	9	3	drop or lay-in panel		0%	30 sq.ft.	OMG	0		\$0	\$0	\$0

MS# Sample # %ASB
9 - 755428 0%
9 - 755429 0%
9 - 755430 0%

Room 101-2'x4'	10	3	drop or lay-in panel		2%	50 sq.ft.	OMG	52	11	\$281	\$102	\$383
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MS# Sample # %ASB
10 - 755431 2%
10 - 755432 2%
10 - 755433 2%

The ceiling panels are located in the north and south ends of the floor and on the west side. They are in classrooms and labs. They were in fair to good condition with some bad edges and broken corners.

AREA # 6. TOTALS \$28,775 \$10,447 \$39,222

** Area 7. 2nd Floor

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 2

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Room 235	11	3	pipe covering	LPS/R	20%	20 ft. 4 in. O.D. OMA	25	III		\$178	\$112	\$290
MS#	Sample #	%ASB										
11	- 755434	20%										
11	- 755435	20%										
11	- 755436	20%										
Room 235	12	3	corrugated pipe covering	LPS/R	40%	40 ft. 4 in. O.D. OMA	25	III		\$357	\$223	\$580
MS#	Sample #	%ASB										
12	- 755437	40%										
12	- 755438	40%										
12	- 755439	40%										
Room 219	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	1 4 in. joint	OMA	25	III	\$28	\$16	\$44
MS#	Sample #	%ASB										
13	- 755440	4%										
13	- 755441	3%										
13	- 755442	4%										

The materials were in fair to good condition. The pipes are in a lab and a classroom. The pipes run up and down the wall and are going to the floor above.

AREA # 7. TOTALS \$563 \$351 \$914

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS		
<p>** Area 8. 2nd Floor-In Wood Cases</p> <p style="text-align: center;">AHERA Damage Code: 1 Response Action: 67 Potential for Disturbance: 2</p>														
Room 235	11	3	pipe covering	LPS/R	20%	12 ft. 4 in. O.D. OMA	30	III		\$107	\$67	\$174		
MS#	Sample #	%ASB												
11	- 755434	20%												
11	- 755435	20%												
11	- 755436	20%												
<p>Room 235 has pipes extending up and down the wall to heaters. The heaters are built-in with book shelves around them. There is a hole in the counter top above the heater through which the pipe can be seen. The hole is about 10" to 12" long and 5" to 6" wide. There is a bad spot on the pipe insulation where the skin is damaged, about 2" long.</p>										AREA #	8. TOTALS	\$107	\$67	\$174
<p>** Area 9. 2nd Floor-Above Drop Ceiling</p> <p style="text-align: center;">AHERA Damage Code: 1 Response Action: 67 Potential for Disturbance: 2</p>														
Room 227	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	40 4 in. joint	OMA	18	IV	\$1,124	\$624	\$1,748		
Room 229	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	15 4 in. joint	OMA	18	IV	\$421	\$234	\$655		
Room 231	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	5 4 in. joint	OMA	18	IV	\$140	\$78	\$218		
Room 233	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	7 4 in. joint	OMA	18	IV	\$197	\$109	\$306		
Room 223	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	4 4 in. joint	OMA	18	IV	\$112	\$62	\$174		
Room 225	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	25 4 in. joint	OMA	18	IV	\$702	\$390	\$1,092		
Room 219	13	3	mjp on nonsuspect pipe cover	LPS/R	4%	45 4 in. joint	OMA	18	IV	\$1,264	\$702	\$1,966		

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MS# Sample # %ASB
13 - 755440 4%
13 - 755441 3%
13 - 755442 4%

The mudded joint packings were in fair to good condition.

AREA # 9. TOTALS \$3,960 \$2,199 \$6,159

** Area 10. 2nd Floor-Ceilings

AHERA Damage Code: 4

Response Action: 67

Potential for Disturbance: 3

Room 227-2'x4'	14	7	drop or lay-in panel		5%	850 sq.ft.	OMG	46	II	\$4,777	\$1,734	\$6,511
Hallway H201-2'x4'	14	7	drop or lay-in panel		5%	340 sq.ft.	OMG	46	II	\$1,911	\$694	\$2,605
Room 229-2'x4'	14	7	drop or lay-in panel		5%	150 sq.ft.	OMG	46	II	\$843	\$306	\$1,149
Room 231-2'x4'	14	7	drop or lay-in panel		5%	135 sq.ft.	OMG	46	II	\$759	\$275	\$1,034
Room 205A-2'x4'	14	7	drop or lay-in panel		5%	200 sq.ft.	OMG	46	II	\$1,124	\$408	\$1,532
Room 233-2'x4'	14	7	drop or lay-in panel		5%	165 sq.ft.	OMG	46	II	\$927	\$337	\$1,264
Room 205B-2'x4'	14	7	drop or lay-in panel		5%	190 sq.ft.	OMG	46	II	\$1,068	\$388	\$1,456
Room 223-2'x4'	14	7	drop or lay-in panel		5%	135 sq.ft.	OMG	46	II	\$759	\$275	\$1,034
Hallway H203-2'x4'	14	7	drop or lay-in panel		5%	445 sq.ft.	OMG	46	II	\$2,501	\$908	\$3,409
Room 225-2'x4'	14	7	drop or lay-in panel		5%	890 sq.ft.	OMG	46	II	\$5,002	\$1,816	\$6,818
Hallway H204-2'x4'	14	7	drop or lay-in panel		5%	315 sq.ft.	OMG	46	II	\$1,770	\$643	\$2,413
Room 205-2'x4'	14	7	drop or lay-in panel		5%	600 sq.ft.	OMG	46	II	\$3,372	\$1,224	\$4,596
Room 207-2'x4'	14	7	drop or lay-in panel		5%	140 sq.ft.	OMG	46	II	\$787	\$286	\$1,073
Room 209-2'x4'	14	7	drop or lay-in panel		5%	140 sq.ft.	OMG	46	II	\$787	\$286	\$1,073

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Room 219-2'x4'	14	7	drop or lay-in panel		5%	1115 sq.ft.	OMG	46	II	\$6,266	\$2,275	\$8,541
Room 211-2'x4'	14	7	drop or lay-in panel		5%	40 sq.ft.	OMG	46	II	\$225	\$82	\$307
Room 235-2'x4'	14	7	drop or lay-in panel		5%	775 sq.ft.	OMG	46	II	\$4,355	\$1,581	\$5,936
Room 213-2'x4'	14	7	drop or lay-in panel		5%	590 sq.ft.	OMG	46	II	\$3,316	\$1,204	\$4,520
Room 214-2'x4'	14	7	drop or lay-in panel		5%	95 sq.ft.	OMG	46	II	\$534	\$194	\$728
Room 215-2'x4'	14	7	drop or lay-in panel		5%	140 sq.ft.	OMG	46	II	\$787	\$286	\$1,073
Room 203-2'x4'	14	7	drop or lay-in panel		5%	105 sq.ft.	OMG	46	II	\$590	\$214	\$804
<p>MS# Sample # %ASB</p> <p>14 - 755443 5%</p> <p>14 - 755444 5%</p> <p>14 - 755445 5%</p> <p>14 - 755446 5%</p> <p>14 - 755447 5%</p> <p>14 - 755448 5%</p> <p>14 - 755449 5%</p>												
Room 227-2'x4'	15	3	drop or lay-in panel		0%	40 sq.ft.	OMG	0		\$0	\$0	\$0
Hallway H204-2'x4'	15	3	drop or lay-in panel		0%	25 sq.ft.	OMG	0		\$0	\$0	\$0
Room 237-2'x4'	15	3	drop or lay-in panel		0%	350 sq.ft.	OMG	0		\$0	\$0	\$0
Room 214A-2'x4'	15	3	drop or lay-in panel		0%	95 sq.ft.	OMG	0		\$0	\$0	\$0
Room 235-2'x4'	15	3	drop or lay-in panel		0%	24 sq.ft.	OMG	0		\$0	\$0	\$0
Room 231-2'x4'	15	3	drop or lay-in panel		0%	16 sq.ft.	OMG	0		\$0	\$0	\$0
Hallway H203-2'x4'	15	3	drop or lay-in panel		0%	5 sq.ft.	OMG	0		\$0	\$0	\$0
Room 223-2'x4'	15	3	drop or lay-in panel		0%	16 sq.ft.	OMG	0		\$0	\$0	\$0
Room 233-2'x4'	15	3	drop or lay-in panel		0%	4 sq.ft.	OMG	0		\$0	\$0	\$0

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Room 219-2'x4'	15	3	drop or lay-in panel		0%	104 sq.ft.	OMG	0		\$0	\$0	\$0
MS#	Sample #	%ASB										
15	- 755450	0%										
15	- 755451	0%										
15	- 755452	0%										
Hallways S202 & S201-1'x1'	16	3	acoustical tile		0%	300 sq.ft.	OMG	0		\$0	\$0	\$0
MS#	Sample #	%ASB										
16	- 755453	0%										
16	- 755454	0%										
16	- 755455	0%										
Hallway S202-1'x1'	17	3	acoustical tile		0%	230 sq.ft.	OMG	0		\$0	\$0	\$0
MS#	Sample #	%ASB										
17	- 755456	0%										
17	- 755457	0%										
17	- 755458	0%										

The materials have minor damage to the corners and edges and were in fair to good condition.

AREA # 10. TOTALS \$42,460 \$15,416 \$57,876

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
** Area		11. 3rd Floor		AHERA Damage Code: 1		Response Action: 67		Potential for Disturbance: 2				
Room 321	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	1 4 in. joint	OMA	24	III	\$28	\$16	\$44
Room 313	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	6 4 in. joint	OMA	24	III	\$169	\$94	\$263

MS# Sample # %ASB

18 - 755459 8%
18 - 755460 7%
18 - 755461 8%

The mudded joint packings were in good condition and located out in the open. The rooms are used for labs.

AREA # 11. TOTALS \$197 \$110 \$307

** Area		12. 3rd Floor-Above Drop Ceiling		AHERA Damage Code: 1		Response Action: 67		Potential for Disturbance: 2				
Room 321	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	50 4 in. joint	OMA	15	IV	\$1,404	\$781	\$2,185
Hallway H302	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	2 4 in. joint	OMA	15	IV	\$56	\$31	\$87
Room 319	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	35 4 in. joint	OMA	15	IV	\$983	\$546	\$1,529
Room 323	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	18 4 in. joint	OMA	15	IV	\$506	\$281	\$787
Room 325	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	6 4 in. joint	OMA	15	IV	\$169	\$94	\$263
Room 327	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	6 4 in. joint	OMA	15	IV	\$169	\$94	\$263

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
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MS# Sample # %ASB
18 - 755459 8%
18 - 755460 7%
18 - 755461 8%

Room 327	19	3	mjp on nonsuspect pipe cover	DW	5%	1 4 in. joint	OMA	15	IV	\$28	\$16	\$44
Room 323	19	3	mjp on nonsuspect pipe cover	DW	5%	8 4 in. joint	OMA	15	IV	\$225	\$125	\$350
Room 321	19	3	mjp on nonsuspect pipe cover	DW	5%	30 4 in. joint	OMA	15	IV	\$843	\$468	\$1,311

MS# Sample # %ASB
19 - 755462 5%
19 - 755463 5%
19 - 755464 5%

The mudded joint packings were in good condition.

AREA # 12. TOTALS \$4,383 \$2,436 \$6,819

** Area 13. 3rd Floor

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 3

Room 317	18	3	mjp on nonsuspect pipe cover	LPS/R	8%	1 4 in. joint	OMA	27	III	\$28	\$16	\$44
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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
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MS# Sample # %ASB
18 - 755459 8%
18 - 755460 7%
18 - 755461 8%

The mudded joint packing has some damage. The corner at the bottom of the packing has been opened, and this should be fixed.

AREA # 13. TOTALS \$28 \$16 \$44

** Area 14. 3rd Floor-Ceilings

AHERA Damage Code: 4

Response Action: 67

Potential for Disturbance: 3

Room 325-2'x4'	20	5	drop or lay-in panel		7%	150 sq. ft.	OMG	54	II	\$843	\$306	\$1,149
Room 313-2'x4'	20	5	drop or lay-in panel		7%	805 sq. ft.	OMG	54	II	\$4,524	\$1,642	\$6,166
Room 323-2'x4'	20	5	drop or lay-in panel		7%	140 sq. ft.	OMG	54	II	\$787	\$286	\$1,073
Room 321-2'x4'	20	5	drop or lay-in panel		7%	815 sq. ft.	OMG	54	II	\$4,580	\$1,663	\$6,243
Room 313A-2'x4'	20	5	drop or lay-in panel		7%	205 sq. ft.	OMG	54	II	\$1,152	\$418	\$1,570
Room 327-2'x4'	20	5	drop or lay-in panel		7%	155 sq. ft.	OMG	54	II	\$871	\$316	\$1,187
Room 319-2'x4'	20	5	drop or lay-in panel		7%	825 sq. ft.	OMG	54	II	\$4,636	\$1,683	\$6,319
Room 307-2'x4'	20	5	drop or lay-in panel		7%	120 sq. ft.	OMG	54	II	\$674	\$245	\$919
Room 317-2'x4'	20	5	drop or lay-in panel		7%	150 sq. ft.	OMG	54	II	\$843	\$306	\$1,149
Room 305-2'x4'	20	5	drop or lay-in panel		7%	1805 sq. ft.	OMG	54	II	\$10,144	\$3,682	\$13,826
Room 303A-2'x4'	20	5	drop or lay-in panel		7%	290 sq. ft.	OMG	54	II	\$1,630	\$592	\$2,222
Room 328-2'x4'	20	5	drop or lay-in panel		7%	55 sq. ft.	OMG	54	II	\$309	\$112	\$421
Room 328A-2'x4'	20	5	drop or lay-in panel		7%	130 sq. ft.	OMG	54	II	\$731	\$265	\$996

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Room 328B-2'x4'	20	5	drop or lay-in panel		7%	340 sq.ft.	OMG	54	II	\$1,911	\$694	\$2,605
Room 329-2'x4'	20	5	drop or lay-in panel		7%	450 sq.ft.	OMG	54	II	\$2,529	\$918	\$3,447
Room 301-2'x4'	20	5	drop or lay-in panel		7%	860 sq.ft.	OMG	54	II	\$4,833	\$1,754	\$6,587
Room 303-2'x4'	20	5	drop or lay-in panel		7%	210 sq.ft.	OMG	54	II	\$1,180	\$428	\$1,608
MS# Sample # %ASB												
20 - 755465 6%												
20 - 755466 7%												
20 - 755467 6%												
20 - 755468 7%												
20 - 755469 7%												
Hallway H302-2'x4' replacement	21	3	drop or lay-in panel		0%	32 sq.ft.	OMG	0		\$0	\$0	\$0
Room 321-2'x4' replacement	21	3	drop or lay-in panel		0%	80 sq.ft.	OMG	0		\$0	\$0	\$0
Room 319-2'x4' replacement	21	3	drop or lay-in panel		0%	64 sq.ft.	OMG	0		\$0	\$0	\$0
Room 323-2'x4' replacement	21	3	drop or lay-in panel		0%	8 sq.ft.	OMG	0		\$0	\$0	\$0
MS# Sample # %ASB												
21 - 755470 0%												
21 - 755471 0%												
21 - 755472 0%												
Hallway H302-2'x4'	22	3	drop or lay-in panel		0%	320 sq.ft.	OMG	0		\$0	\$0	\$0

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
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MS# Sample # %ASB

22 - 755473 0%
22 - 755474 0%
22 - 755475 0%

Stairwell 302-1'x1'	23	3	acoustical tile		0%	315 sq.ft.	OMG	0		\$0	\$0	\$0
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MS# Sample # %ASB

23 - 755476 0%
23 - 755477 0%
23 - 755478 0%

The 2'x4' ceiling panels are located throughout the floor. The materials have minor damage to the edges and corners.

AREA #	14. TOTALS	\$42,177	\$15,310	\$57,487
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** Area 15. 3rd Floor-Attic Space

AHERA Damage Code: 1

Response Action: 2

Potential for Disturbance: 3

North end at access	.24	3	corrugated pipe covering	LPS/R	55%	25 ft. 4 in. O.D.	OMA	104	I	\$223	\$140	\$363
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MS# Sample # %ASB

24 - 755479 55%
24 - 755480 55%
24 - 755481 55%

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
By attic hatch access	25	3	mjp on nonsuspect pipe cover	LPS/R	10%	1 4 in. joint	OMA	69	1	\$28	\$16	\$44
MS#	Sample #	%ASB										
25	- 755482	10%										
25	- 755483	10%										
25	- 755484	10%										
Middle section-W side of HVAC-7' out	27	6	debris		6%	5 sq.ft.	OMF	69	1	\$100	\$0	\$100
Middle section-W side of HVAC unit	27	6	debris		6%	3 sq.ft.	OMF	69	1	\$100	\$0	\$100
MS#	Sample #	%ASB										
27	- 755488	4%										
27	- 755489	5%										
27	- 755490	5%										
27	- 755491	0%										
27	- 755492	6%										
27	- 755493	6%										

The elbow by the attic access was damaged. In the middle section on the west side of the HVAC unit there is debris on the HVAC ductwork and on the floor. There is also some debris on the floor about 7' west of the HVAC unit. It appears that there has been some work done and the mudded joint packings have been thrown on the floor. There are some pipes that have been disconnected and left in the attic. In the southwest corner about 2' out of 25' of piping has insulation on the floor.

AREA # 15. TOTALS \$451 \$156 \$607

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
** Area 16. 3rd Floor-Attic Space												
			AHERA Damage Code: 1	Response Action: 67			Potential for Disturbance: 2					
Throughout	24	3	corrugated pipe covering	LPS/R	55%	200 ft. 4 in. O.D.	OMA	30	III	\$1,784	\$1,116	\$2,900
MS#	Sample #	%ASB										
24	- 755479	55%										
24	- 755480	55%										
24	- 755481	55%										
Throughout	25	3	mjp on corrugated pipe cover	LPS/R	10%	25 4 in. joint	OMA	20	III	\$702	\$390	\$1,092
MS#	Sample #	%ASB										
25	- 755482	10%										
25	- 755483	10%										
25	- 755484	10%										
Throughout	26	3	mjp on nonsuspect pipe cover	LPS/R	0%	25 4 in. joint	OMA	0		\$0	\$0	\$0
MS#	Sample #	%ASB										
26	- 755485	0%										
26	- 755486	0%										
26	- 755487	0%										

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
The materials were in fair to good condition. The floor has small catwalks and open rafters.						AREA #	16. TOTALS	\$2,486	\$1,506	\$3,992		

** Area 17. 4th Floor

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 2

Room 405-southeast corner	31	3	mjp on nonsuspect pipe cover	LPS/R	8%	2 4 in. joint	OMA	25	III	\$56	\$31	\$87
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MS# Sample # %ASB

31 - 755505 8%
31 - 755506 8%
31 - 755507 5%

The material was in good condition. The room is used for lab work.

AREA # 17. TOTALS \$56 \$31 \$87

** Area 18. 4th Floor-Ceiling

AHERA Damage Code: 4

Response Action: 7

Potential for Disturbance: 3

Hallway 401-2'x4'	28	3	drop or lay-in panel		0%	140 sq.ft.	OMG	0		\$0	\$0	\$0
Room 403-2'x4'	28	3	drop or lay-in panel		0%	32 sq.ft.	OMG	0		\$0	\$0	\$0
Room 411-2'x4'	28	3	drop or lay-in panel		0%	16 sq.ft.	OMG	0		\$0	\$0	\$0
Room 409-2'x4'	28	3	drop or lay-in panel		0%	56 sq.ft.	OMG	0		\$0	\$0	\$0

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
<p>MS# Sample # %ASB</p> <p>28 - 755494 0%</p> <p>28 - 755495 0%</p> <p>28 - 755496 0%</p>												
Room 405A-2'x4'	29	3	drop or lay-in panel		3%	10 sq.ft.	OMG	50	II	\$56	\$20	\$76
Room 405B-2'x4'	29	3	drop or lay-in panel		3%	64 sq.ft.	OMG	50	II	\$360	\$131	\$491
<p>MS# Sample # %ASB</p> <p>29 - 755497 0%</p> <p>29 - 755498 2%</p> <p>29 - 755499 3%</p>												
Room 405B-2'x4'	30	5	drop or lay-in panel		15%	220 sq.ft.	OMG	50	II	\$1,236	\$449	\$1,685
Room 407-2'x4'	30	5	drop or lay-in panel		15%	150 sq.ft.	OMG	50	II	\$843	\$306	\$1,149
Room 409-2'x4'	30	5	drop or lay-in panel		15%	100 sq.ft.	OMG	50	II	\$562	\$204	\$766
Room 403-2'x4'	30	5	drop or lay-in panel		15%	155 sq.ft.	OMG	50	II	\$871	\$316	\$1,187
Room 411-2'x4'	30	5	drop or lay-in panel		15%	140 sq.ft.	OMG	50	II	\$787	\$286	\$1,073
Room 405-2'x4'	30	5	drop or lay-in panel		15%	1041 sq.ft.	OMG	50	II	\$5,850	\$2,124	\$7,974
Hallway 401-2'x4'	30	5	drop or lay-in panel		15%	205 sq.ft.	OMG	50	II	\$1,152	\$418	\$1,570
Room 405A-2'x4'	30	5	drop or lay-in panel		15%	445 sq.ft.	OMG	50	II	\$2,501	\$908	\$3,409

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LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
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MS# Sample # %ASB

30 - 755500 15%
30 - 755501 15%
30 - 755502 15%
30 - 755503 15%
30 - 755504 15%

The ceiling panels are located throughout the fourth floor and were in fair condition. They have minor damage to the edges and corners.

AREA # 18. TOTALS \$14,218 \$5,162 \$19,380

** Area 19. 5th Floor-Mechanical Room 509

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 2

South end	32	3	mjp on nonsuspect pipe cover	LPS/R	80%	15 4 in. joint	OMA	26	III	\$421	\$234	\$655
North end	32	3	mjp on nonsuspect pipe cover	LPS/R	80%	30 4 in. joint	OMA	26	III	\$843	\$468	\$1,311
South end	32	3	mjp on nonsuspect pipe cover	LPS/R	80%	40 6 in. joint	OMA	26	III	\$1,547	\$909	\$2,456
North end	32	3	mjp on nonsuspect pipe cover	LPS/R	80%	15 6 in. joint	OMA	26	III	\$580	\$341	\$921

MS# Sample # %ASB

32 - 755508 8%
32 - 755509 80%
32 - 755510 10%

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South end	33	3	mjp on nonsuspect pipe cover	DW	10%	30 4 in. joint	OMA	17	IV	\$843	\$468	\$1,311		
North end	33	3	mjp on nonsuspect pipe cover	DW	10%	10 4 in. joint	OMA	17	IV	\$281	\$156	\$437		
MS# Sample # %ASB														
33 - 755511 10%														
33 - 755512 8%														
33 - 755513 8%														
South end-tank	34	3	boiler/tank insulation		70%	12 sq.ft.	OMB	26	III	\$339	\$272	\$611		
MS# Sample # %ASB														
34 - 755514 60%														
34 - 755515 65%														
34 - 755516 70%														
North end-heat exchanger	37	3	boiler/tank insulation		65%	8 sq.ft.	OMB	26	III	\$226	\$181	\$407		
MS# Sample # %ASB														
37 - 755517 60%														
37 - 755518 60%														
37 - 755519 65%														
The materials were in good condition. There is ductwork in the area that takes up most of the room. The pipes run throughout the area.										AREA #	19. TOTALS	\$5,080	\$3,029	\$8,109

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Building Number: 030
Building Name: Pharmacy Building
Address : Corvallis, OR

Page: 28
Building Type: 01, 05
Year Constructed: 1924
Date Inspected: 01/10/91
Inspector: Taylor

LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
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** Area 20. 5th Floor

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 2

Hallway H502	33	3	mjp on nonsuspect pipe cover	DW	10%	2 4 in. joint	OMA	25	III	\$56	\$31	\$87
Room 505	33	3	mjp on nonsuspect pipe cover	DW	10%	15 4 in. joint	OMA	25	III	\$421	\$234	\$655
Room 507	33	3	mjp on nonsuspect pipe cover	DW	10%	25 4 in. joint	OMA	25	III	\$702	\$390	\$1,092
Room 507A	33	3	mjp on nonsuspect pipe cover	DW	10%	25 4 in. joint	OMA	25	III	\$702	\$390	\$1,092
Room 507B	33	3	mjp on nonsuspect pipe cover	DW	10%	4 4 in. joint	OMA	25	III	\$112	\$62	\$174
Room 507CA	33	3	mjp on nonsuspect pipe cover	DW	10%	2 4 in. joint	OMA	25	III	\$56	\$31	\$87

MS# Sample # %ASB

33 - 755511 10%
33 - 755512 8%
33 - 755513 8%

The pipes run along the ceiling and go down to the sinks and faucets. The material was in good condition.

AREA # 20. TOTALS \$2,049 \$1,138 \$3,187

** Area 21. 5th Floor

AHERA Damage Code: 1

Response Action: 67

Potential for Disturbance: 2

Room 507C	35	3	exterior duct insulation		0%	13 sq.ft.	OMB	0		\$0	\$0	\$0
Room 507	35	3	exterior duct insulation		0%	100 sq.ft.	OMB	0		\$0	\$0	\$0
Hallway H502	35	3	exterior duct insulation		0%	30 sq.ft.	OMB	0		\$0	\$0	\$0

ASBESTOS ASSESSMENT SURVEY
Oregon State University

Project Number: 5749032V.F
Building Number: 030
Building Name: Pharmacy Building
Address : Corvallis, OR

Page: 29
Building Type: 01, 05
Year Constructed: 1924
Date Inspected: 01/10/91
Inspector: Taylor

LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
Hallway H501	35	3	exterior duct insulation		0%	30 sq.ft.	OMB	0		\$0	\$0	\$0
MS#	Sample #	%ASB										
35	- 755520	0%										
35	- 755521	0%										
35	- 755522	0%										
							AREA #	21. TOTALS		\$0	\$0	\$0
** Area	22. Penthouse-Mechanical Room		AHERA Damage Code: 6		Response Action: 67		Potential for Disturbance: 2					
Throughout	36	3	exterior duct insulation		0%	100 sq.ft.	OMB	0		\$0	\$0	\$0
MS#	Sample #	%ASB										
36	- 755523	0%										
36	- 755524	0%										
36	- 755525	0%										
							AREA #	22. TOTALS		\$0	\$0	\$0
							BUILDING # 030	TOTALS		\$168,789	\$69,925	\$238,714

ASBESTOS ASSESSMENT SURVEY
Oregon State University

Project Number: 5749032V.F
Building Number: 030
Building Name: Pharmacy Building
Address : Corvallis, OR

Page: 30
Building Type: 01, 05
Year Constructed: 1924
Date Inspected: 01/10/91
Inspector: Taylor

LOCATION	SAMPLE GROUP NUMBER	NUMB OF SAMPS	MATERIAL DESCRIPTION	PIPE ID	% ASB	QUANTITY	O&M CODE	EXP POT	PRIORITY LEVEL	REMOVAL COSTS	REPLACEMENT COSTS	TOTAL COSTS
REPORT TOTALS										\$168,789	\$69,925	\$238,714

HALL-KIMBRELL ENVIRONMENTAL SERVICES INC.
ASBESTOS PETROGRAPHIC ANALYSIS

CLIENT: State of Oregon
PROJECT # 5749032V.F Oregon State University

BUILDING: 030
Pharmacy Building

GROUP#	SAMPLE NUMBER	ANALYSIS	ANALYSIS				TOT ASB	A S B E S T O S					O T H E R M A T E R I A L S						
			TYPE	CONS	HOMOG	COLOR		CHRY	AMO	CRO	ANT	ACT /TRE	WOOL	CEL	MICA	PER	BIND	OTHER 1	OTHER 2
1	755400	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	2	0	0	53	10 DI	0	0
1	755401	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	0	0	0	55	10 DI	0	0
1	755402	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	0	0	0	55	10 DI	0	0
2	755403	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	0	0	0	55	10 DI	0	0
2	755404	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	0	0	0	55	10 DI	0	0
2	755405	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	2	0	0	53	10 DI	0	0
3	755406	0	PRIMARY	Y	Y	15	15	0	0	0	0	0	0	0	0	85	0	0	0
3	755407	0	PRIMARY	Y	Y	15	15	0	0	0	0	0	0	0	0	85	0	0	0
3	755408	0	PRIMARY	Y	Y	15	15	0	0	0	0	0	10	0	0	75	0	0	0
4	755409	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	0	0	0	55	10 DI	0	0
4	755410	0	PRIMARY	N	Y	15	15	0	0	0	0	0	0	0	0	85	0	0	0
4	755411	0	PRIMARY	Y	Y	5	5	0	0	0	0	30	0	0	0	55	10 DI	0	0
5	755412	0	PRIMARY	Y	Y	55	55	0	0	0	0	0	45	0	0	0	0	0	0
5	755413	0	PRIMARY	Y	Y	55	55	0	0	0	0	0	45	0	0	0	0	0	0
5	755414	0	PRIMARY	Y	Y	55	55	0	0	0	0	0	45	0	0	0	0	0	0
6	755415	0	PRIMARY	Y	Y	15	5	10	0	0	0	0	0	0	0	70	15 DI	0	0
6	755416	0	PRIMARY	Y	Y	15	5	10	0	0	0	0	0	0	0	70	15 DI	0	0
6	755417	0	PRIMARY	N	Y	7	2	5	0	0	0	0	0	0	0	65	28 GM	0	0
7	755418	0	PRIMARY	Y	Y	4	4	0	0	0	0	36	0	0	0	50	10 DI	0	0
7	755419	0	PRIMARY	Y	Y	4	4	0	0	0	0	36	0	0	0	50	10 DI	0	0
7	755420	0	PRIMARY	Y	Y	4	4	0	0	0	0	36	0	0	0	50	10 DI	0	0
8	755421	0	PRIMARY	Y	Y	5	0	5	0	0	0	85	0	0	0	10	0	0	0
8	755422	0	PRIMARY	Y	Y	5	0	5	0	0	0	85	0	0	0	10	0	0	0
8	755423	0	PRIMARY	Y	Y	5	0	5	0	0	0	85	0	0	0	10	0	0	0
8	755424	0	PRIMARY	Y	Y	5	0	5	0	0	0	85	0	0	0	10	0	0	0
8	755425	0	PRIMARY	Y	Y	5	0	5	0	0	0	85	0	0	0	10	0	0	0
8	755426	0	PRIMARY	Y	Y	5	0	5	0	0	0	85	0	0	0	10	0	0	0
8	755427	0	PRIMARY	Y	Y	5	0	5	0	0	0	85	0	0	0	10	0	0	0
9	755428	0	PRIMARY	Y	Y	0	0	0	0	0	0	25	55	0	10	10	0	0	0
9	755429	0	PRIMARY	Y	Y	0	0	0	0	0	0	25	55	0	10	10	0	0	0
9	755430	0	PRIMARY	Y	Y	0	0	0	0	0	0	25	55	0	10	10	0	0	0
10	755431	0	PRIMARY	Y	Y	2	2	0	0	0	0	83	0	0	0	15	0	0	0

Analysis: 0 = Primary Analysis (Entire Sample)
1-4 = Subanalyses

T = Trace of Asbestos

HALL-KIMBRELL ENVIRONMENTAL SERVICES INC.
ASBESTOS PETROGRAPHIC ANALYSIS

CLIENT: State of Oregon
PROJECT # 5749032V.F Oregon State University

BUILDING: 030
Pharmacy Building

PAGE: 2

GROUP#	SAMPLE NUMBER	ANALYSIS ANALYSIS	ANALYSIS TYPE	CONS	HOMOG	COLOR	TOT ASB	ASBESTOS					ACT /TRE	OTHER MATERIALS						
								CHRY	AMO	CRO	ANT	WOOL		CEL	MICA	PER	BIND	OTHER 1	OTHER 2	OTHER 3
10	755432	0	PRIMARY	Y	Y		2	2	0	0	0	0	83	0	0	0	15	0	0	0
10	755433	0	PRIMARY	Y	Y		2	2	0	0	0	0	83	0	0	0	15	0	0	0
11	755434	0	PRIMARY	Y	Y		20	10	10	0	0	0	0	0	0	0	80	0	0	0
11	755435	0	PRIMARY	Y	Y		20	10	10	0	0	0	0	0	0	0	80	0	0	0
11	755436	0	PRIMARY	Y	Y		20	10	10	0	0	0	0	0	0	0	80	0	0	0
12	755437	0	PRIMARY	Y	Y		40	40	0	0	0	0	0	60	0	0	0	0	0	0
12	755438	0	PRIMARY	Y	Y		40	40	0	0	0	0	0	60	0	0	0	0	0	0
12	755439	0	PRIMARY	Y	Y		40	40	0	0	0	0	0	60	0	0	0	0	0	0
13	755440	0	PRIMARY	Y	Y		4	4	0	0	0	0	36	0	0	0	50	10 DI	0	0
13	755441	0	PRIMARY	Y	Y		3	3	0	0	0	0	37	0	0	0	50	10 DI	0	0
13	755442	0	PRIMARY	Y	Y		4	4	0	0	0	0	36	0	0	0	50	10 DI	0	0
14	755443	0	PRIMARY	Y	Y		5	0	5	0	0	0	85	0	0	0	10	0	0	0
14	755444	0	PRIMARY	Y	Y		5	0	5	0	0	0	85	0	0	0	10	0	0	0
14	755445	0	PRIMARY	Y	Y		5	0	5	0	0	0	85	0	0	0	10	0	0	0
14	755446	0	PRIMARY	Y	Y		5	0	5	0	0	0	85	0	0	0	10	0	0	0
14	755447	0	PRIMARY	Y	Y		5	0	5	0	0	0	85	0	0	0	10	0	0	0
14	755448	0	PRIMARY	Y	Y		5	0	5	0	0	0	85	0	0	0	10	0	0	0
14	755449	0	PRIMARY	N	Y		5	2	3	0	0	0	65	15	0	0	15	0	0	0
15	755450	0	PRIMARY	Y	Y		0	0	0	0	0	0	45	45	0	0	10	0	0	0
15	755451	0	PRIMARY	Y	Y		0	0	0	0	0	0	45	45	0	0	10	0	0	0
15	755452	0	PRIMARY	N	Y		0	0	0	0	0	0	40	40	0	10	10	0	0	0
16	755453	0	PRIMARY	Y	Y		0	0	0	0	0	0	85	0	0	0	15	0	0	0
16	755454	0	PRIMARY	Y	Y		0	0	0	0	0	0	85	0	0	0	15	0	0	0
16	755455	0	PRIMARY	Y	Y		0	0	0	0	0	0	85	0	0	0	15	0	0	0
17	755456	0	PRIMARY	Y	Y		0	0	0	0	0	0	80	0	0	0	20	0	0	0
17	755457	0	PRIMARY	Y	Y		0	0	0	0	0	0	80	0	0	0	20	0	0	0
17	755458	0	PRIMARY	Y	Y		0	0	0	0	0	0	80	0	0	0	20	0	0	0
18	755459	0	PRIMARY	Y	Y		8	8	0	0	0	0	37	0	0	0	45	10 DI	0	0
18	755460	0	PRIMARY	Y	Y		7	7	0	0	0	0	38	0	0	0	45	10 DI	0	0
18	755461	0	PRIMARY	Y	Y		8	8	0	0	0	0	37	0	0	0	45	10 DI	0	0
19	755462	0	PRIMARY	Y	Y		5	5	0	0	0	0	40	0	0	0	45	10 DI	0	0
19	755463	0	PRIMARY	Y	Y		5	5	0	0	0	0	40	0	0	0	45	10 DI	0	0
19	755464	0	PRIMARY	Y	Y		5	5	0	0	0	0	40	0	0	0	45	10 DI	0	0

Analysis: 0 = Primary Analysis (Entire Sample)
1-4 = Subanalyses

T = Trace of Asbestos

HALL-KIMBRELL ENVIRONMENTAL SERVICES INC.
ASBESTOS PETROGRAPHIC ANALYSIS

CLIENT: State of Oregon
PROJECT # 5749032V.F Oregon State University

BUILDING: 030
Pharmacy Building

GROUP#	SAMPLE NUMBER	ANALYSIS ANALYSIS	ANALYSIS TYPE	CONS	HOMOG	COLOR	TOT ASB	ASBESTOS					OTHER MATERIALS							
								CHRY	AMO	CRO	ANT	ACT /TRE	WOOL	CEL	MICA	PER	BIND	OTHER 1	OTHER 2	OTHER 3
20	755465	0	PRIMARY	Y	Y		6	2	4	0	0	0	75	4	0	0	15	0	0	0
20	755466	0	PRIMARY	Y	Y		7	3	4	0	0	0	75	3	0	0	15	0	0	0
20	755467	0	PRIMARY	Y	Y		6	2	4	0	0	0	75	4	0	0	15	0	0	0
20	755468	0	PRIMARY	Y	Y		7	2	5	0	0	0	75	3	0	0	15	0	0	0
20	755469	0	PRIMARY	Y	Y		7	2	5	0	0	0	75	3	0	0	15	0	0	0
21	755470	0	PRIMARY	Y	Y		0	0	0	0	0	0	0	88	0	0	12	0	0	0
21	755471	0	PRIMARY	Y	Y		0	0	0	0	0	0	0	90	0	0	10	0	0	0
21	755472	0	PRIMARY	N	Y		0	0	0	0	0	0	40	40	0	10	10	0	0	0
22	755473	0	PRIMARY	Y	Y		0	0	0	0	0	0	25	55	0	10	10	0	0	0
22	755474	0	PRIMARY	Y	Y		0	0	0	0	0	0	25	55	0	10	10	0	0	0
22	755475	0	PRIMARY	Y	Y		0	0	0	0	0	0	25	55	0	10	10	0	0	0
23	755476	0	PRIMARY	Y	Y		0	0	0	0	0	0	70	0	0	0	30	0	0	0
23	755477	0	PRIMARY	Y	Y		0	0	0	0	0	0	70	0	0	0	30	0	0	0
23	755478	0	PRIMARY	Y	N		0	0	0	0	0	0	65	0	0	0	35	0	0	0
24	755479	0	PRIMARY	Y	Y		55	55	0	0	0	0	0	45	0	0	0	0	0	0
24	755480	0	PRIMARY	Y	Y		55	55	0	0	0	0	0	45	0	0	0	0	0	0
24	755481	0	PRIMARY	Y	Y		55	55	0	0	0	0	0	45	0	0	0	0	0	0
25	755482	0	PRIMARY	Y	Y		10	10	T	0	0	0	0	0	0	0	70	20 DI	0	0
25	755483	0	PRIMARY	Y	Y		10	10	T	0	0	0	0	0	0	0	70	20 DI	0	0
25	755484	0	PRIMARY	Y	Y		10	10	T	0	0	0	0	0	0	0	70	20 DI	0	0
26	755485	0	PRIMARY	Y	Y		0	0	0	0	0	0	35	0	0	0	55	10 GM	0	0
26	755486	0	PRIMARY	Y	Y		0	0	0	0	0	0	35	0	0	0	55	10 GM	0	0
26	755487	0	PRIMARY	Y	Y		0	0	0	0	0	0	35	0	0	0	55	10 GM	0	0
27	755488	0	PRIMARY	Y	Y		4	4	0	0	0	0	39	2	0	0	50	5 DI	0	0
27	755489	0	PRIMARY	Y	Y		5	5	0	0	0	0	35	0	0	0	50	10 DI	0	0
27	755490	0	PRIMARY	Y	Y		5	5	0	0	0	0	35	0	0	0	50	10 DI	0	0
27	755491	0	PRIMARY	N	Y		0	0	0	0	0	0	35	0	0	0	55	10 GM	0	0
27	755492	0	PRIMARY	Y	Y		6	6	0	0	0	0	35	0	0	0	49	10 DI	0	0
27	755493	0	PRIMARY	Y	Y		6	6	0	0	0	0	35	0	0	0	49	10 DI	0	0
28	755494	0	PRIMARY	Y	Y		0	0	0	0	0	0	30	45	0	15	10	0	0	0
28	755495	0	PRIMARY	Y	Y		0	0	0	0	0	0	30	45	0	15	10	0	0	0
28	755496	0	PRIMARY	Y	Y		0	0	0	0	0	0	30	45	0	15	10	0	0	0

Analysis: 0 = Primary Analysis (Entire Sample)
1-4 = Subanalyses

T = Trace of Asbestos

HALL-KIMBRELL ENVIRONMENTAL SERVICES INC.
ASBESTOS PETROGRAPHIC ANALYSIS

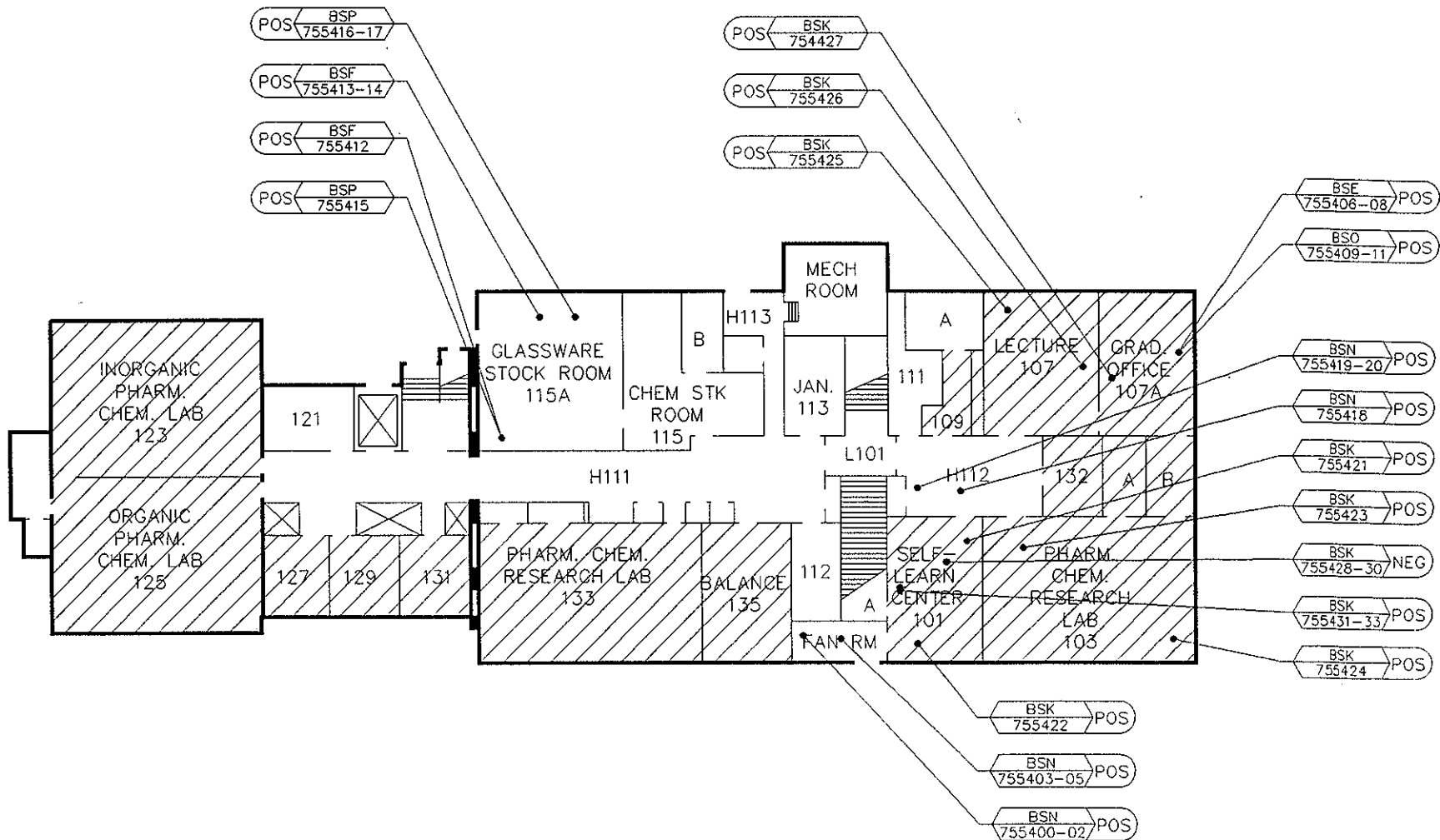
CLIENT: State of Oregon
PROJECT # 5749032V.F Oregon State University

BUILDING: 030
Pharmacy Building

GROUP#	SAMPLE NUMBER	ANALYSIS ANALYSIS	ANALYSIS TYPE	CONS	HOMOG	COLOR	TOT ASB	ASBESTOS				ACT /TRE	OTHER MATERIALS							
								CHRY	AMO	CRO	ANT		WOOL	CEL	MICA	PER	BIND	OTHER 1	OTHER 2	OTHER 3
29	755497	0	PRIMARY	N	Y		0	0	0	0	0	0	40	40	0	10	10	0	0	0
29	755498	0	PRIMARY	Y	Y		2	2	0	0	0	0	83	0	0	0	15	0	0	0
29	755499	0	PRIMARY	Y	Y		3	3	0	0	0	0	82	0	0	0	15	0	0	0
30	755500	0	PRIMARY	Y	Y		15	0	15	0	0	0	65	0	0	0	20	0	0	0
30	755501	0	PRIMARY	Y	Y		15	0	15	0	0	0	65	0	0	0	20	0	0	0
30	755502	0	PRIMARY	Y	Y		15	0	15	0	0	0	65	0	0	0	20	0	0	0
30	755503	0	PRIMARY	Y	Y		15	0	15	0	0	0	65	0	0	0	20	0	0	0
30	755504	0	PRIMARY	Y	Y		15	0	15	0	0	0	65	0	0	0	20	0	0	0
31	755505	0	PRIMARY	Y	Y		8	3	5	0	0	0	50	0	0	0	42	0	0	0
31	755506	0	PRIMARY	Y	Y		8	3	5	0	0	0	50	0	0	0	42	0	0	0
31	755507	0	PRIMARY	Y	Y		5	2	3	0	0	0	50	0	0	0	45	0	0	0
32	755508	0	PRIMARY	Y	Y		8	0	8	0	0	0	50	0	0	0	42	0	0	0
32	755509	0	PRIMARY	N	Y		80	80	0	0	0	0	0	0	0	0	20	0	0	0
32	755510	0	PRIMARY	Y	Y		10	0	10	0	0	0	50	0	0	0	40	0	0	0
33	755511	0	PRIMARY	Y	Y		10	10	0	0	0	0	50	0	0	0	40	0	0	0
33	755512	0	PRIMARY	Y	Y		8	8	0	0	0	0	50	0	0	0	42	0	0	0
33	755513	0	PRIMARY	Y	Y		8	8	0	0	0	0	50	0	0	0	42	0	0	0
34	755514	0	PRIMARY	Y	Y		60	25	35	0	0	0	0	0	0	0	40	0	0	0
34	755515	0	PRIMARY	Y	Y		65	25	40	0	0	0	0	0	0	0	35	0	0	0
34	755516	0	PRIMARY	Y	Y		70	30	40	0	0	0	0	0	0	0	30	0	0	0
35	755520	0	PRIMARY	Y	Y		0	0	0	0	0	0	75	0	0	0	10	15 CO	0	0
35	755521	0	PRIMARY	Y	Y		0	0	0	0	0	0	80	0	0	0	10	10 CO	0	0
35	755522	0	PRIMARY	Y	Y		0	0	0	0	0	0	75	0	0	0	10	15 CO	0	0
36	755523	0	PRIMARY	Y	Y		0	0	0	0	0	0	50	0	0	0	0	20 TA	30 WO	0
36	755524	0	PRIMARY	Y	Y		0	0	0	0	0	0	60	0	0	0	0	20 TA	20 WO	0
36	755525	0	PRIMARY	Y	Y		0	0	0	0	0	0	70	0	0	0	0	15 TA	15 WO	0
37	755517	0	PRIMARY	Y	Y		60	30	30	0	0	0	0	0	0	0	40	0	0	0
37	755518	0	PRIMARY	Y	Y		60	25	35	0	0	0	0	0	0	0	40	0	0	0
37	755519	0	PRIMARY	Y	Y		65	30	35	0	0	0	0	0	0	0	35	0	0	0

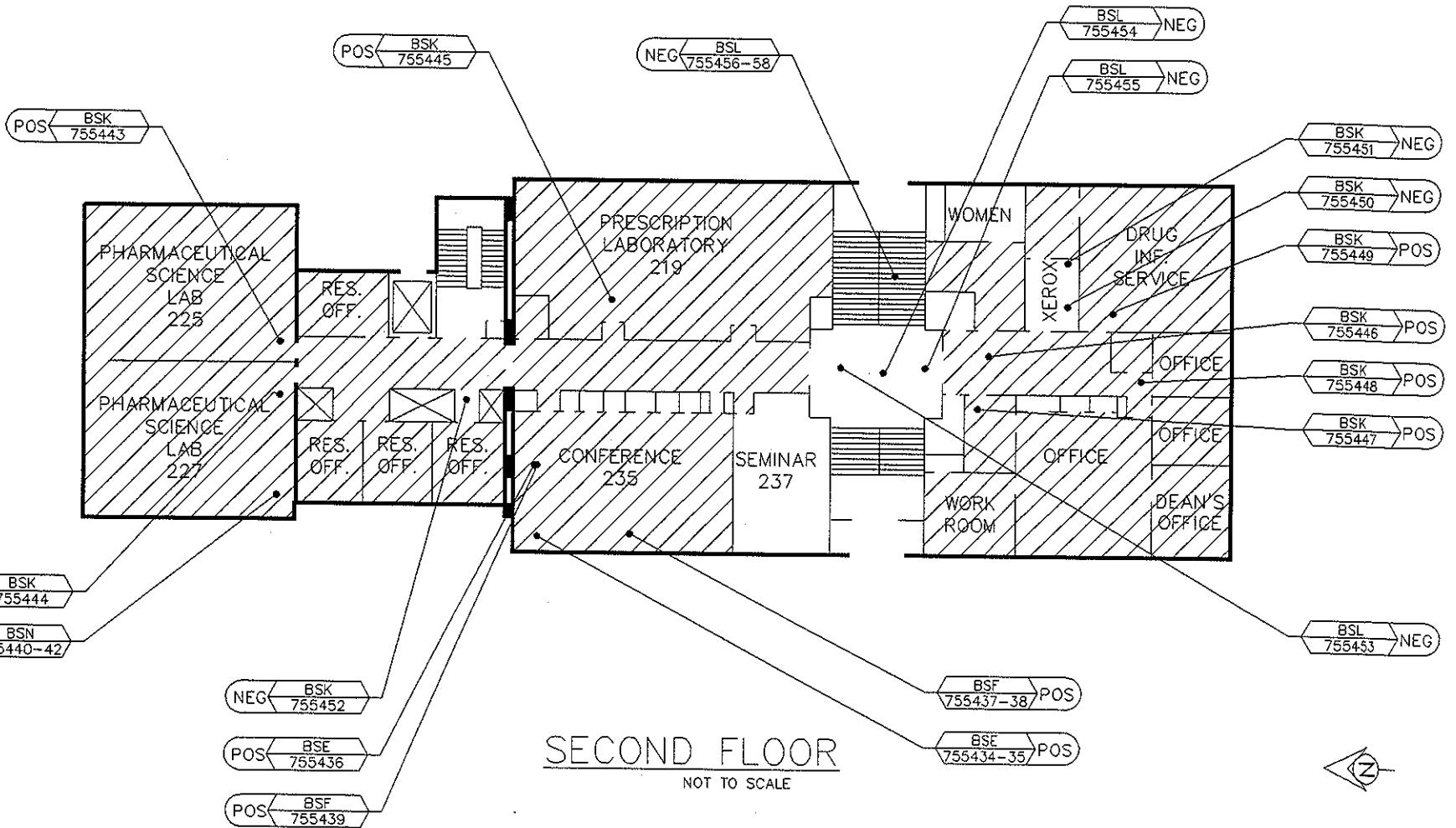
Analysis: 0 = Primary Analysis (Entire Sample)
1-4 = Subanalyses

T = Trace of Asbestos



FIRST FLOOR
NOT TO SCALE

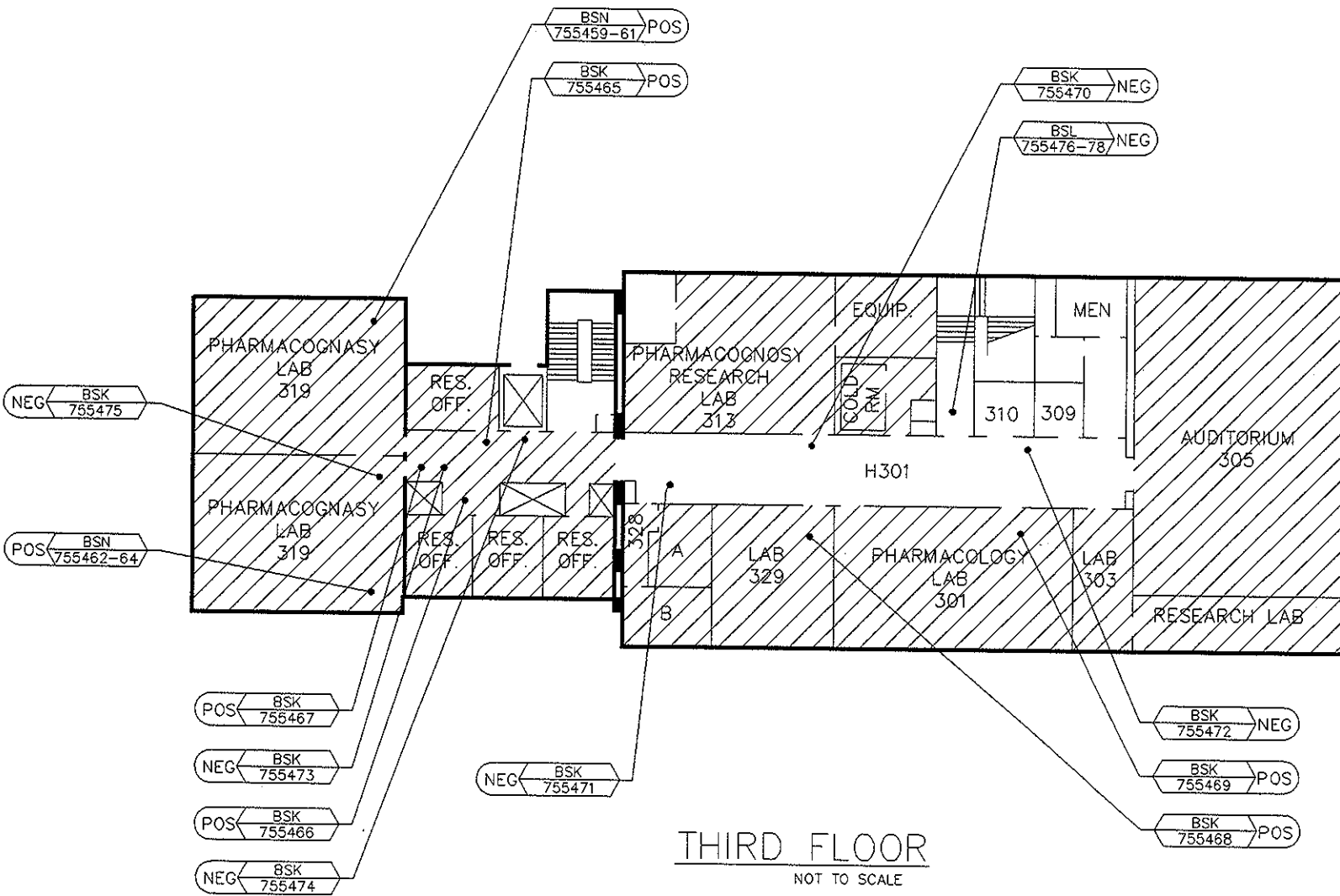
LAB ANALYSIS	POS	BSC	BULK SAMPLE CODE	DESIGNED BY:	B. TAYLOR	PROJECT NO. 574-09-032
	NEG	123456-78		SAMPLE IDENTIFICATION NUMBER	DRAWN BY:	
DROP, LAY-IN, ACOUSTICAL			SPRAY/TROWEL APPLIED MATERIAL			PSI Professional Service Industries, Inc. 4621 S.W. Kelly Avenue Portland, Oregon 97201
				CHECKED BY:	P. QUINN	
				DATE:	07-17-01	STATE OF OREGON OREGON STATE UNIVERSITY PHARMACY BUILDING BLDG 30 FIRST FLOOR



SECOND FLOOR
NOT TO SCALE



LAB ANALYSIS	POS	BSC	BULK SAMPLE CODE	DESIGNED BY:	PSI Professional Service Industries, Inc.	PROJECT NO.
	NEG	123456-78		SAMPLE IDENTIFICATION NUMBER		B. TAYLOR
				DRAWN BY:	4621 S.W. Kelly Avenue	
				B. McCULLOCH	Portland, Oregon 97201	SHEET NO.
				CHECKED BY:		32V308
				P. QUINN		
				DATE:		
				07-17-91		
	DROP, LAY-IN, ACOUSTICAL			SPRAY/TROWEL APPLIED MATERIAL		
STATE OF OREGON OREGON STATE UNIVERSITY PHARMACY BUILDING BLDG 30 SECOND FLOOR						



THIRD FLOOR
NOT TO SCALE

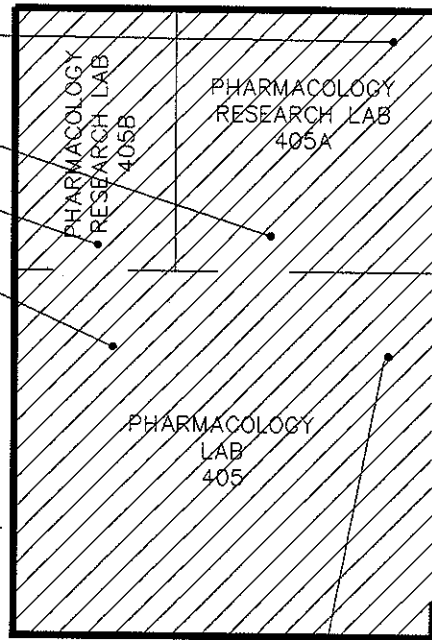
LAB ANALYSIS	POS	BSC	BULK SAMPLE CODE	DESIGNED BY:	B. TAYLOR	Professional Service Industries, Inc. 4621 S.W. Kelly Avenue Portland, Oregon 97201	PROJECT NO.	574-09-032
	NEG	123456-78		SAMPLE IDENTIFICATION NUMBER	DRAWN BY:		B. McCULLOCH	SHEET NO.
DROP, LAY-IN, ACOUSTICAL				SPRAY/TROWEL APPLIED MATERIAL		STATE OF OREGON OREGON STATE UNIVERSITY PHARMACY BUILDING BLDG 30 THIRD FLOOR		
				CHECKED BY:	P. QUINN	DATE: 07-17-91		

POS BSK
755498-99

POS BSK
755503

POS BSK
755504

POS BSK
755502



BSK 755497 NEG

BSK 755494 POS

BSK 755501 POS

BSK 755500 POS

BSK 755495 NEG

POS BSN
755505-07

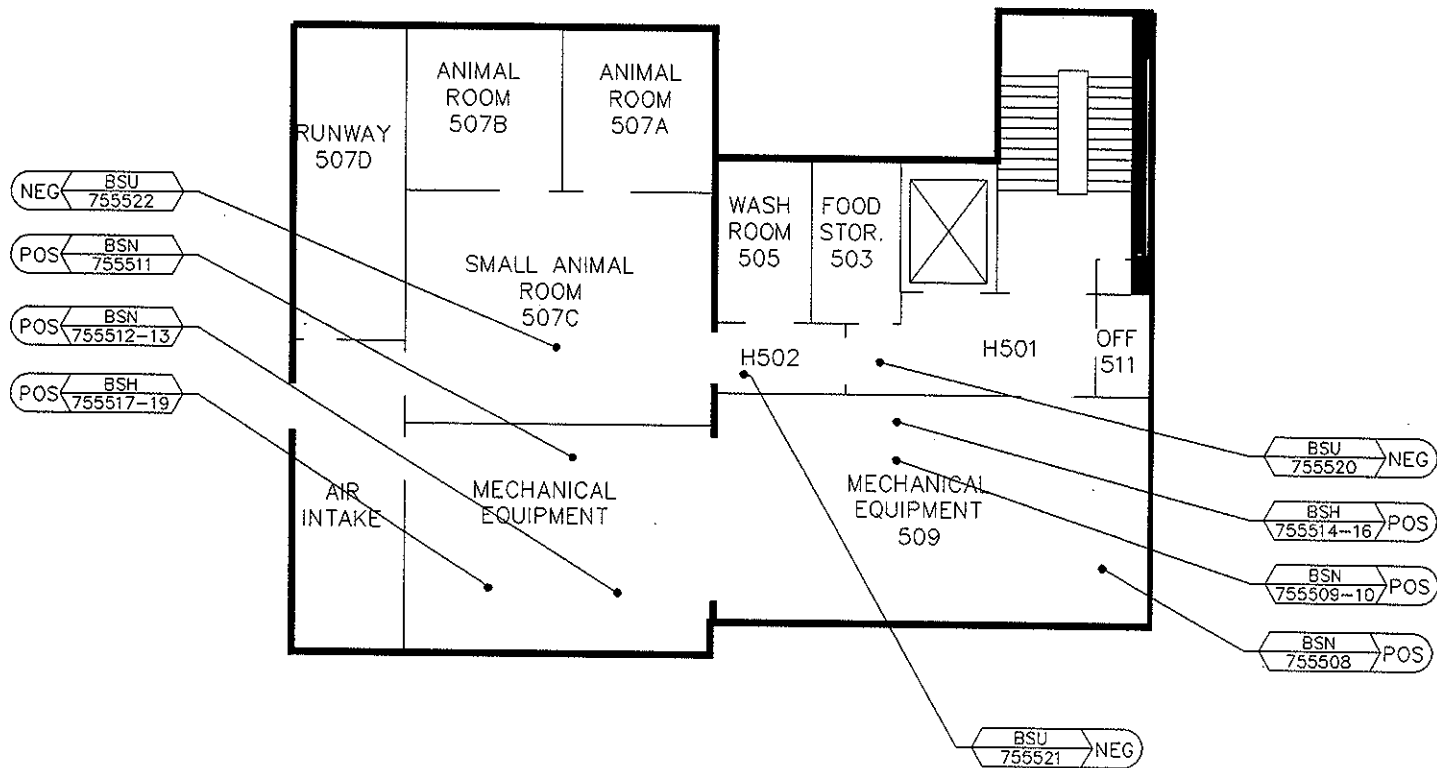
NEG BSK
755496

FOURTH FLOOR

NOT TO SCALE



LAB ANALYSIS	POS	BSC	BULK SAMPLE CODE	DESIGNED BY:	B. TAYLOR	PROJECT NO. 574-09-032
	NEG	123456-78		SAMPLE IDENTIFICATION NUMBER	DRAWN BY:	
DROP, LAY-IN, ACOUSTICAL			SPRAY/TROWEL APPLIED MATERIAL			PSI Professional Service Industries, Inc. 4621 S.W. Kelly Avenue Portland, Oregon 97201 SHEET NO. 32V300
				CHECKED BY:	P. QUINN	
				DATE:	07-17-91	



FIFTH FLOOR
NOT TO SCALE



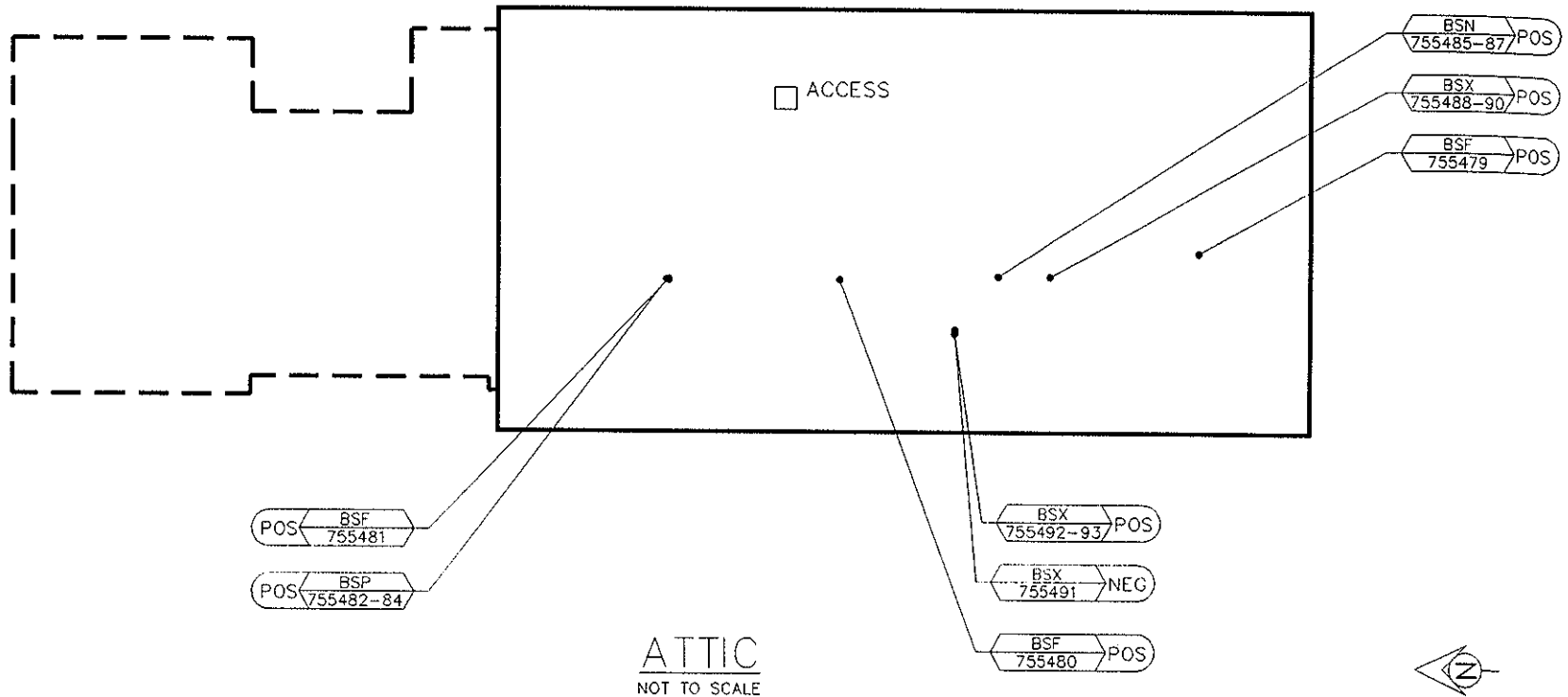
LAB ANALYSIS	POS	BSC	BULK SAMPLE CODE	DESIGNED BY:	PSI Professional Service Industries, Inc.	PROJECT NO.
	NEG	123456-78		SAMPLE IDENTIFICATION NUMBER		B. TAYLOR
				DRAWN BY:	4621 S.W. Kelly Avenue Portland, Oregon 97201	SHEET NO.
				8. McCULLOCH		32V30E
				CHECKED BY:	STATE OF OREGON OREGON STATE UNIVERSITY PHARMACY BUILDING BLDG 30 FIFTH FLOOR	
				P. QUINN		
				DATE:		
				07-17-91		



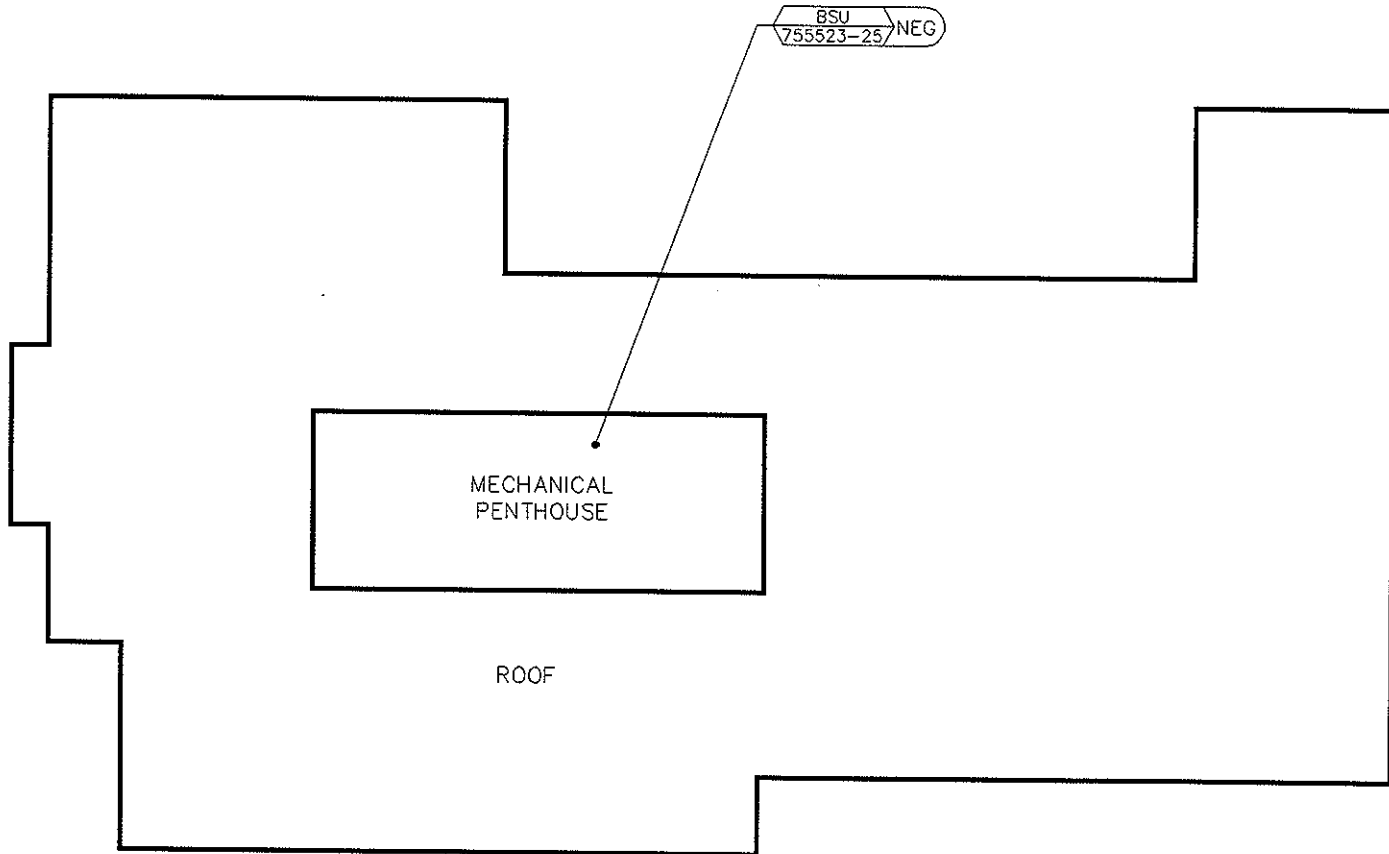
DROP,
LAY-IN,
ACOUSTICAL



SPRAY/TROWEL
APPLIED
MATERIAL



LAB ANALYSIS	POS	BSC	BULK SAMPLE CODE	DESIGNED BY:	Professional Service Industries, Inc. 4621 S.W. Kelly Avenue Portland, Oregon 97201	PROJECT NO.
	NEG	123456-78		SAMPLE IDENTIFICATION NUMBER		B. TAYLOR
				DRAWN BY:		SHEET NO.
				S. McCULLOCH		32V30F
				CHECKED BY:		
				P. QUINN		
				DATE:		
				07-17-91		
DROP LAY-IN ACOUSTICAL SPRAY/TROWEL APPLIED MATERIAL				STATE OF OREGON OREGON STATE UNIVERSITY PHARMACY BUILDING BLDG 30 ATTIC		



PENTHOUSE

NOT TO SCALE



LAB ANALYSIS	POS	BSC	BULK SAMPLE CODE	DESIGNED BY:	PSI Professional Service Industries, Inc.	PROJECT NO.
	NEG	123456-78		SAMPLE IDENTIFICATION NUMBER		B. TAYLOR
				DRAWN BY:	4821 S.W. Kelly Avenue Portland, Oregon 97201	SHEET NO.
				B. McCULLOCH		32V3DG
				CHECKED BY:	STATE OF OREGON OREGON STATE UNIVERSITY PHARMACY BUILDING BLDG 30 PENTHOUSE	
				P. QUINN		
				DATE:		
				07-25-91		



DROP,
LAY-IN,
ACOUSTICAL



SPRAY/TROWEL
APPLIED
MATERIAL

Oregon State University Suspect Miscellaneous Materials

Location	Description	Quantity
030 Pharmacy Building		
1st Floor Throughout	9"x9" & 1'x1' Floor Tiles	9800 sf.
1st Floor Rm. 103	Counter Tops	280 sf.
1st Floor Rm. 103	Fume Hood	50 sf.
1st Floor Rm. 105	Counter Tops	60 sf.
1st Floor Rm. 115A	Counter Tops	16 sf.
1st Floor Rm. 121	Counter Tops	25 sf.
1st Floor Rm. 123	Counter Tops	250 sf.
1st Floor Rm. 123	Fume Hoods	100 sf.
1st Floor Rm. 125	Counter Tops	250 sf.
1st Floor Rm. 125	Fume Hoods	100 sf.
1st Floor Rm. 127	Fume Hood	50 sf.
1st Floor Rm. 127	Counter Tops	25 sf.
1st Floor Rm. 131	Counter Tops	30 sf.
1st Floor Rm. 133	Counter Tops	240 sf.
1st Floor Rm. 133	Fume Hoods	100 sf.
1st Floor Rm. 135, On Oven	Rope Gasket	4 sf.
2nd Floor Rm. 227	Counter Tops	230 sf.
2nd Floor Rm. 227	Fume Hoods	100 sf.
2nd Floor Rm. 229	Counter Tops	25 sf.
2nd Floor Rm. 229	Fume Hood	50 sf.
2nd Floor Rm. 225	Counter Tops	230 sf.
2nd Floor Rm. 225	Fume Hoods	100 sf.

<u>Location</u>	<u>Description</u>	<u>Quantity</u>
2nd Floor Throughout	9"x9" & 1'x1' Floor Tile	9820 sf.
3rd Floor Rm. 321	Counter Tops	200 sf.
3rd Floor Rm. 321	Fume Hood	50 sf.
3rd Floor Rm. 323	Counter Tops	20 sf.
3rd Floor Rm. 325	Counter Tops	30 sf.
3rd Floor Rm. 319	Fume Hoods	100 sf.
3rd Floor Rm. 317	Counter Tops	20 sf.
3rd Floor Rm. 301	Fume Hood	100 sf.
3rd Floor Rm. 313	Counter Tops	200 sf.
3rd Floor Rm. 313	Fume Hood	50 sf.
3rd Floor Throughout	9"x9" & 1'x1' Floor Tile	9960 sf.
4th Floor Throughout	9"x9" & 1'x1' Floor Tile	3200 sf.
4th Floor Rm. 405	Counter Tops	150 sf.
4th Floor Rm. 405A	Counter Tops	60 sf.
4th Floor Rm. 405A	Fume Hood	50 sf.
4th Floor Rm. 405B	Counter Tops	45 sf.
4th Floor Rm. 407	Fume Hood	50 sf.
4th Floor Rm. 407	Counter Tops	30 sf.
4th Floor Rm. 409	Counter Tops	30 sf.
5th Floor Hall H502	Linoleum	80 sf.
5th Floor Rm. 505	Linoleum	105 sf.
5th Floor Rm. 507	Linoleum	450 sf.
5th Floor Rm. 507A	Linoleum	145 sf.
5th Floor Rm. 507B	Linoleum	180 sf.
5th Floor Rm. 507C	Linoleum	250 sf.

<u>Location</u>	<u>Description</u>	<u>Quantity</u>
5th Floor Rm. 507CA	Linoleum	250 sf.
Throughout Building- Windows	1"x6" Cementitious Panels	600 sf.



Professional Service Industries, Inc.
Hall-Kimbrell Division

OREGON STATE UNIVERSITY PHOTOGRAPH LOG

Project Name: State of Oregon

Project Number: 574-09-032V

Inspector: B. Taylor

Date: 1-9-91 Roll #: OR 117B

Photo. Num.	Bldg. Name	Bldg. Number	Area Description	Photo Location/Description
1	Pharmacy Bldg.	30	3rd Floor Attic	Pipe Insulation
2	Pharmacy Bldg.	30	3rd Floor Attic	Pipe Insulation
3	Pharmacy Bldg.	30	3rd Floor Attic	Frame Work
4	Pharmacy Bldg.	30	3rd Floor Attic	SE Corner/Pipe Insulation
5	Pharmacy Bldg.	30	5th Floor	Rm. 509 Mech. Rm./Pipe Insulation
6	Pharmacy Bldg.	30	5th Floor	Rm. 509 Mech. Rm./Pipe Insulation
7	Pharmacy Bldg.	30	5th Floor	Rm. 509 Mech. Rm./Pipe Insulation
8	Pharmacy Bldg.	30	5th Floor	Hallway/Duct Wrap
9	Pharmacy Bldg.	30	Roof	Duct Work/Wrap
10				
11				
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17				
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24				



Professional Service Industries, Inc.
Hall-Kimbrell Division

OREGON STATE UNIVERSITY PHOTOGRAPH LOG

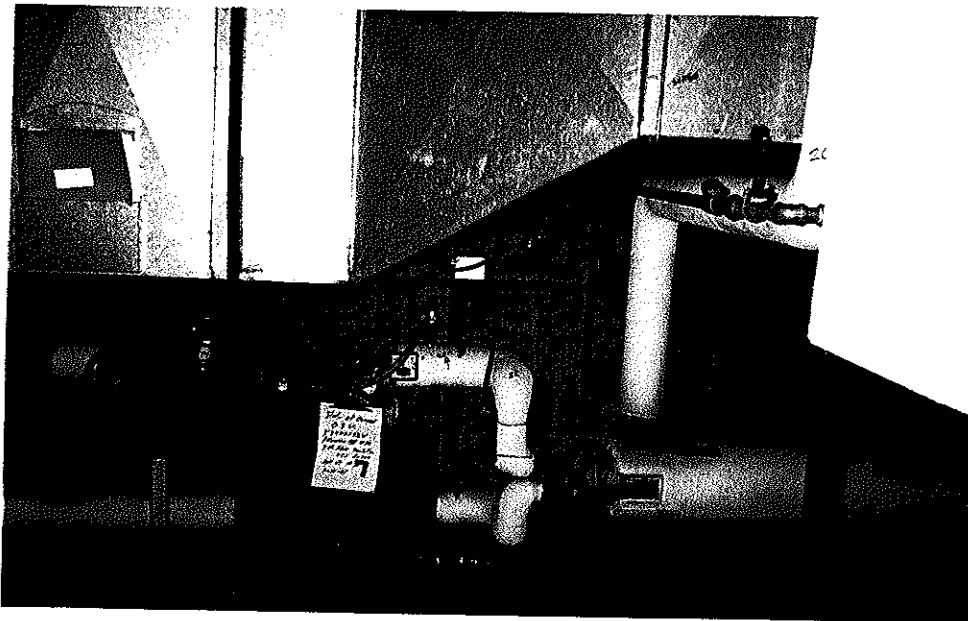
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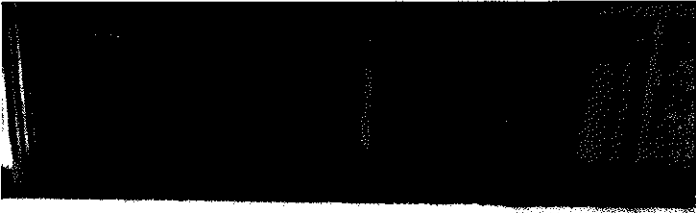
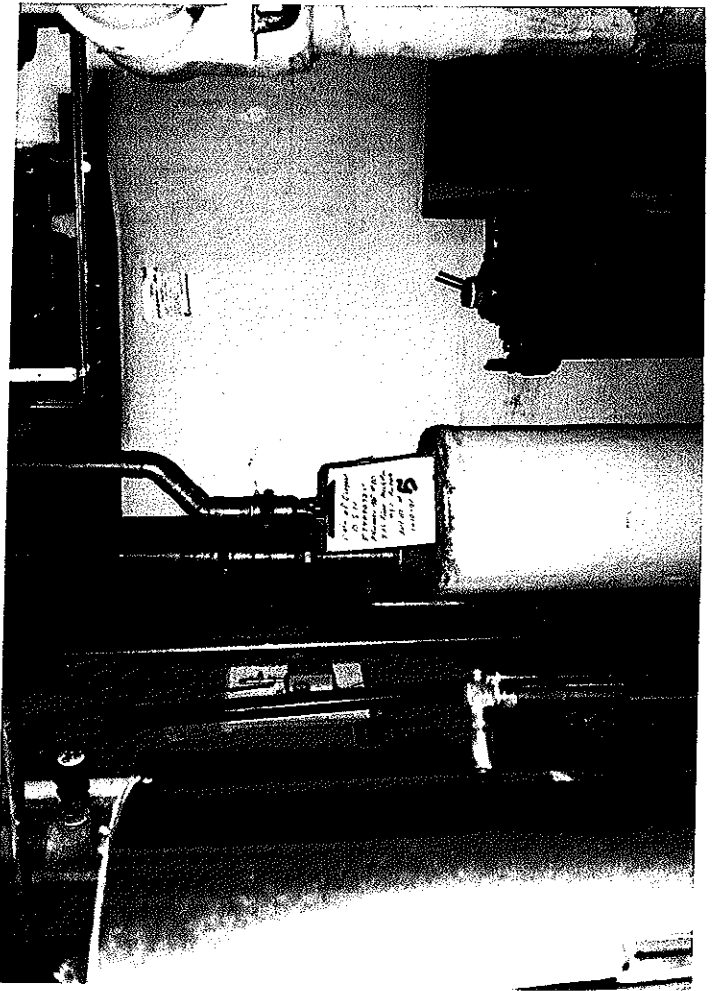
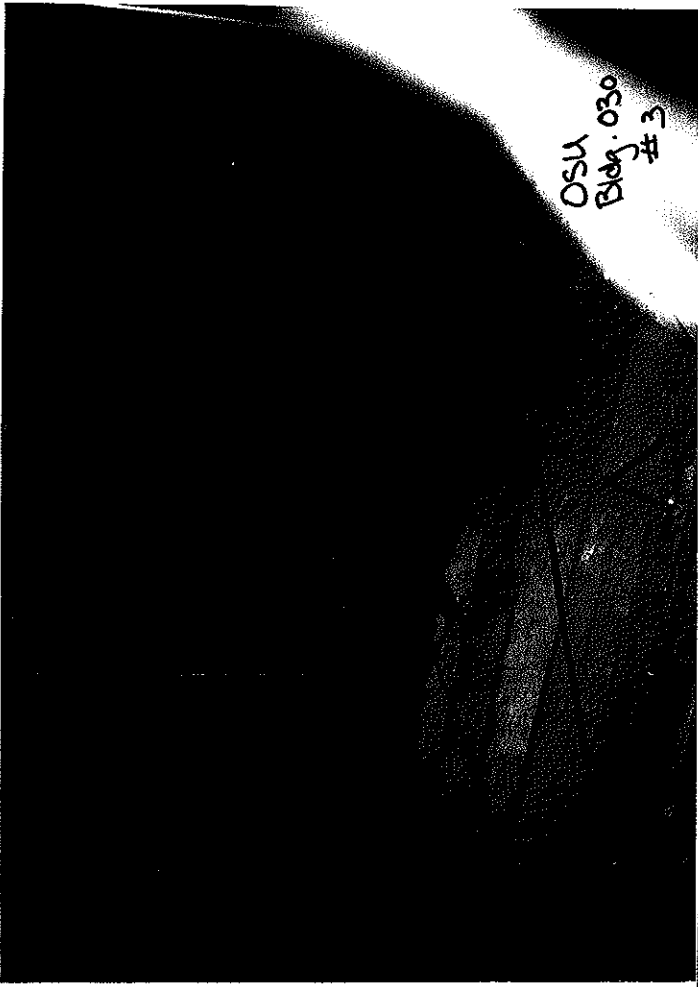
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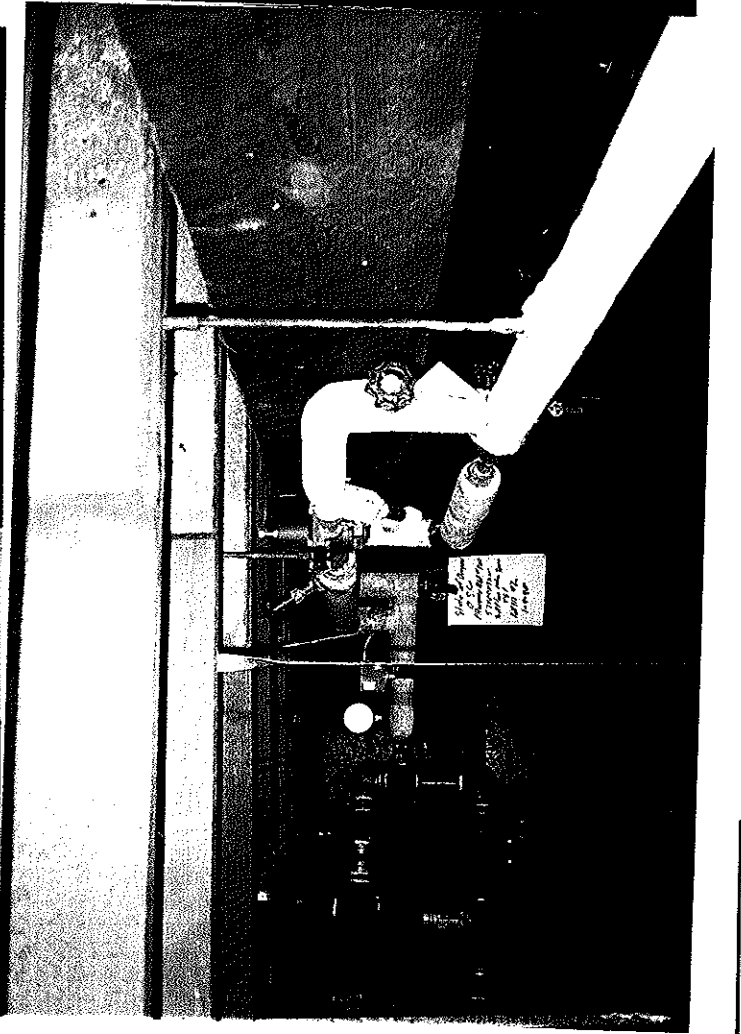
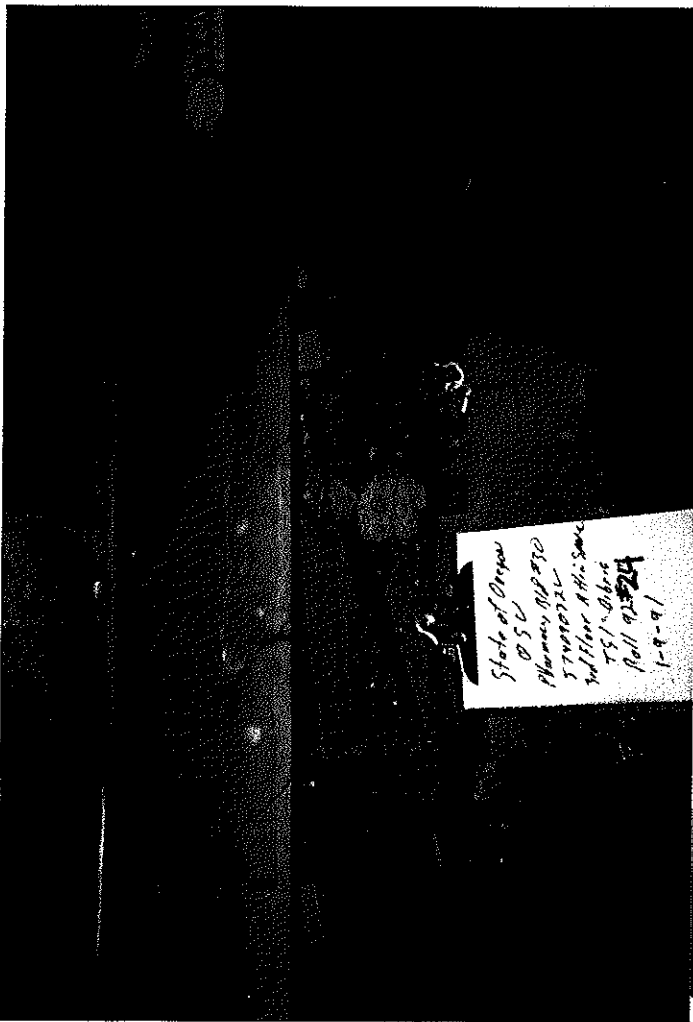
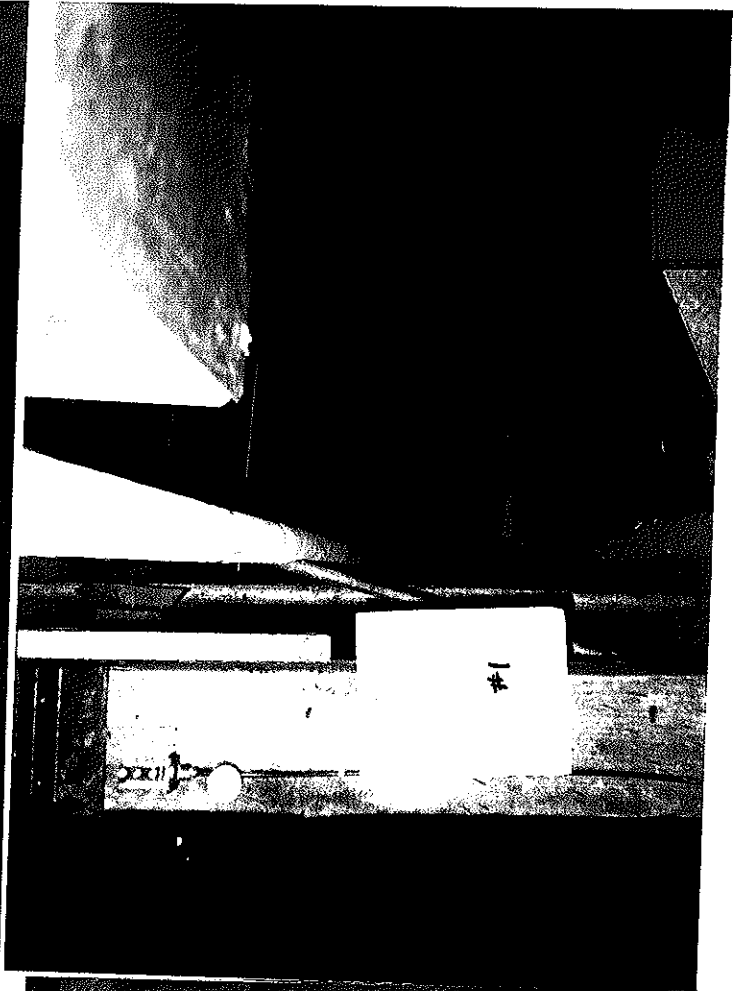
Inspector: B. Taylor

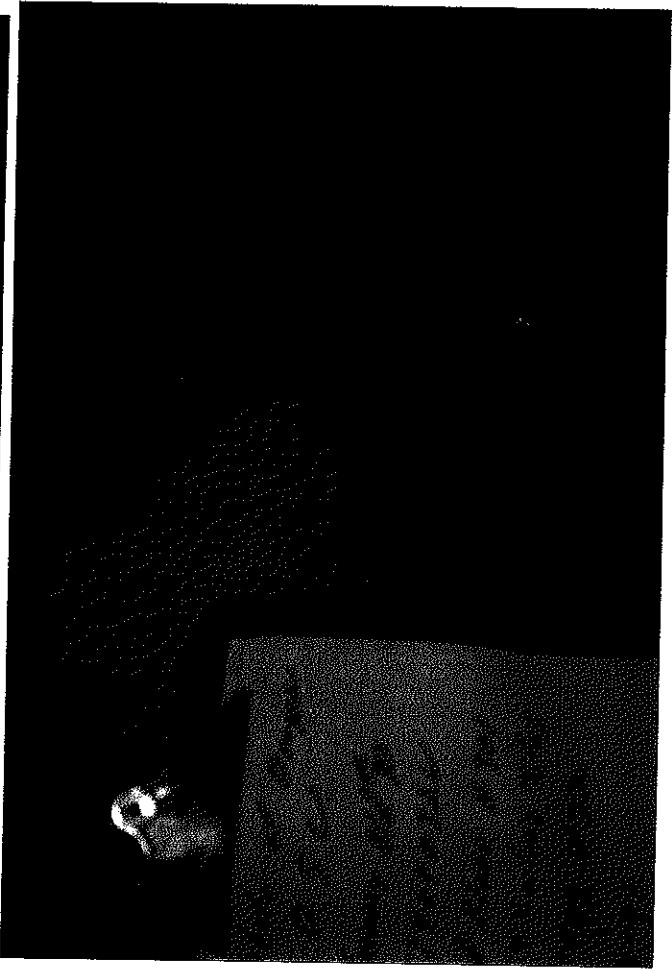
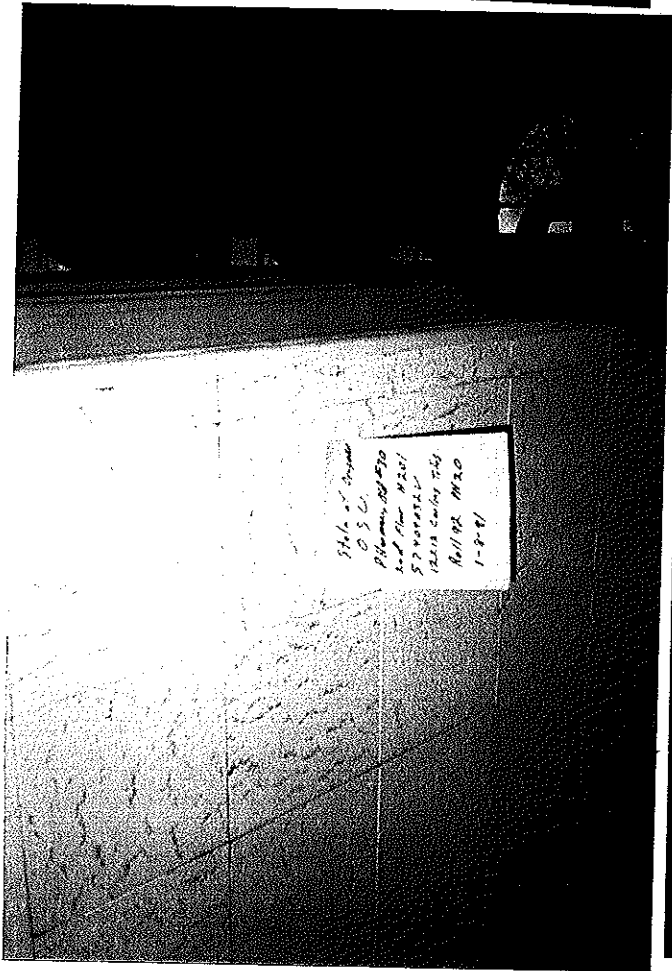
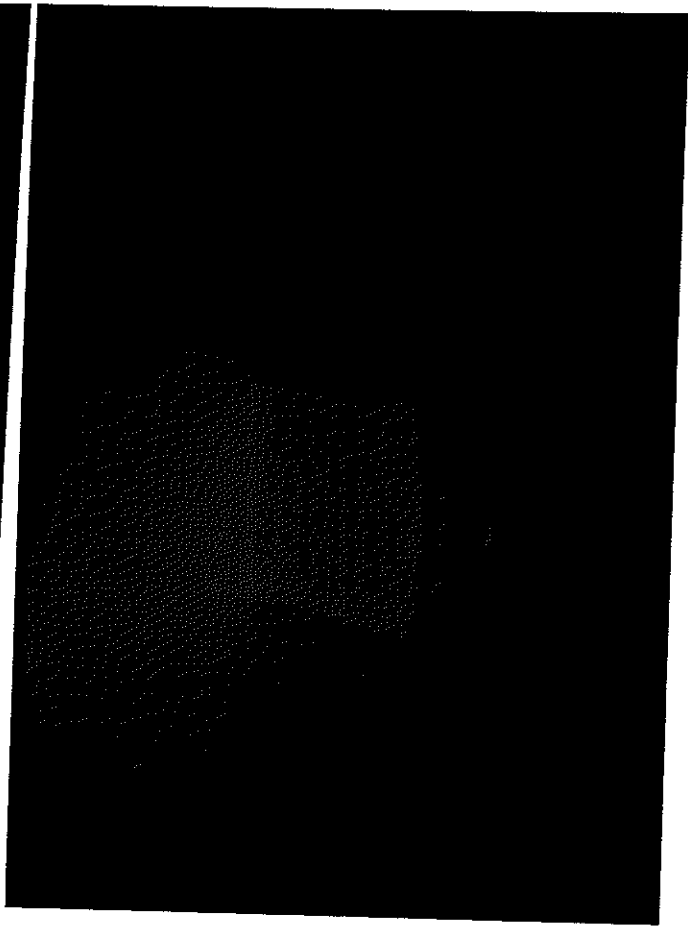
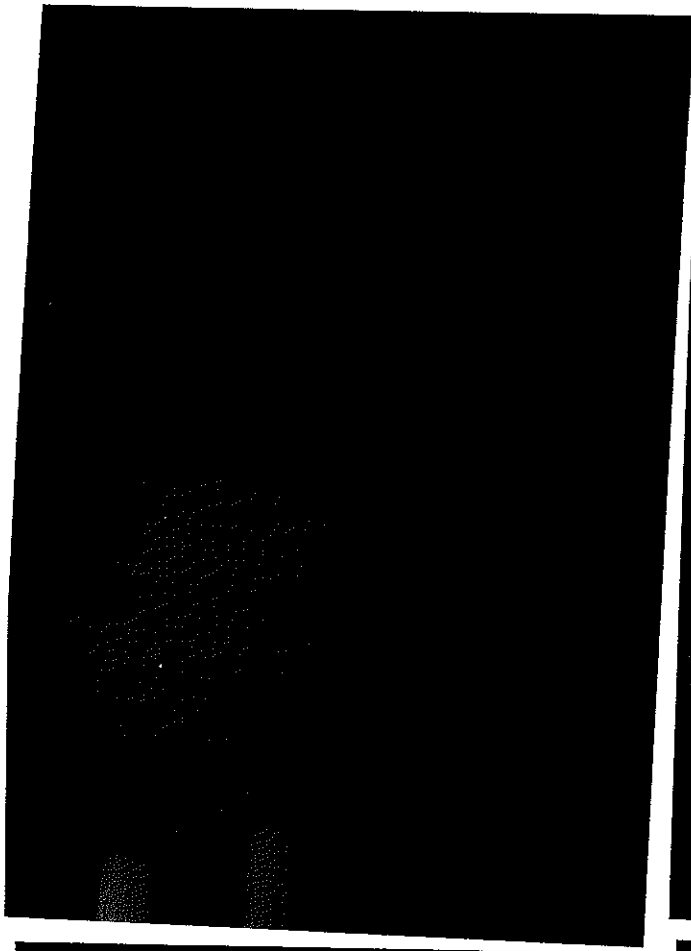
Date: 12-26-90 Roll #: 92

Photo. Num.	Bldg. Name	Bldg. Number	Area Description	Photo Location/Description
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14	Pharmacy	30	1st Floor	Rm. 101B/Pipe Insulation
15	Pharmacy	30	1st Floor	Hall 112/Pipe Insulation
16	Pharmacy	30	1st Floor	Rm. 115/Pipe Insulation
17	Pharmacy	30	1st Floor	Rm. 101/Ceiling Tile
18	Pharmacy	30	1st Floor	Rm. 101/Ceiling Tile
19				
20	Pharmacy	30	2nd Floor	Hallway #201/Ceiling Tile
21	Pharmacy	30	2nd Floor	Hallway #201/Ceiling Tile
22	Pharmacy	30	3rd Floor	Hall #301/Ceiling Tile
23	Pharmacy	30	3rd Floor Attic	Debris
24	Pharmacy	30	3rd Floor Attic	Debris









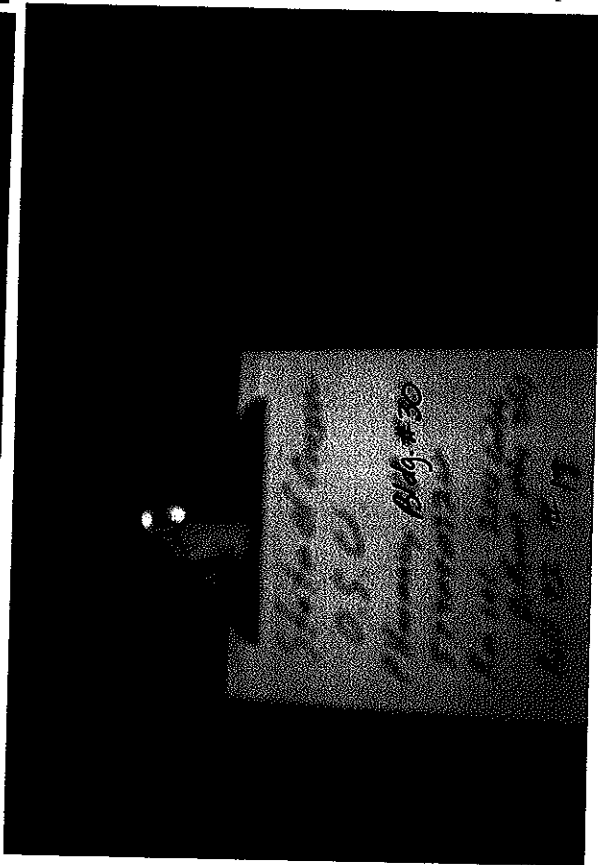
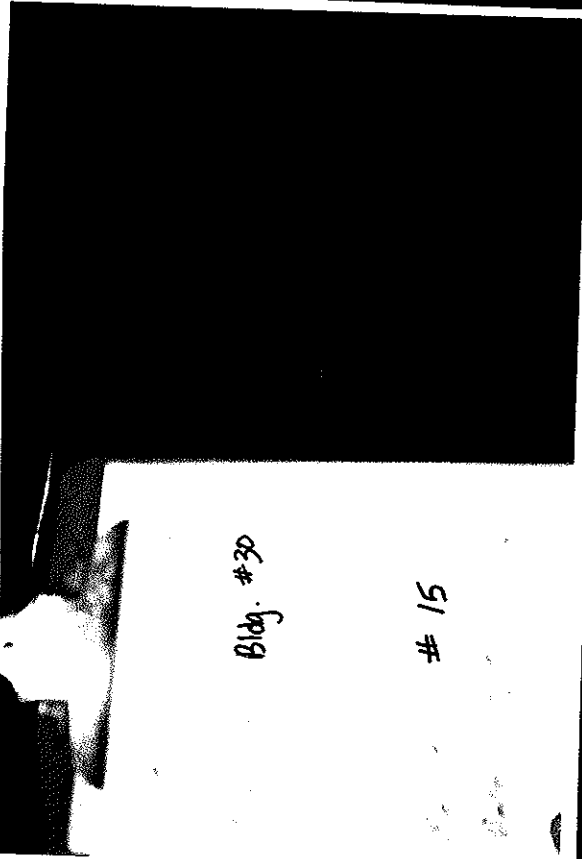
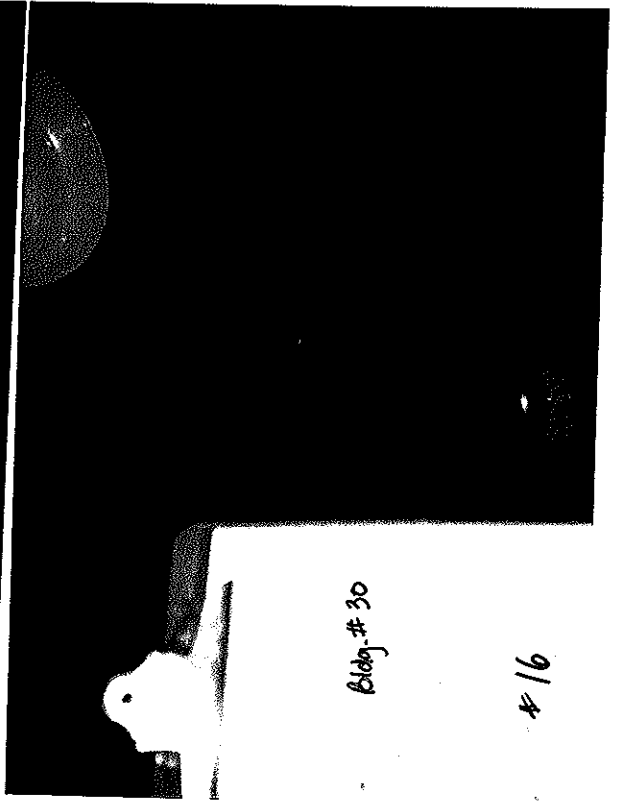
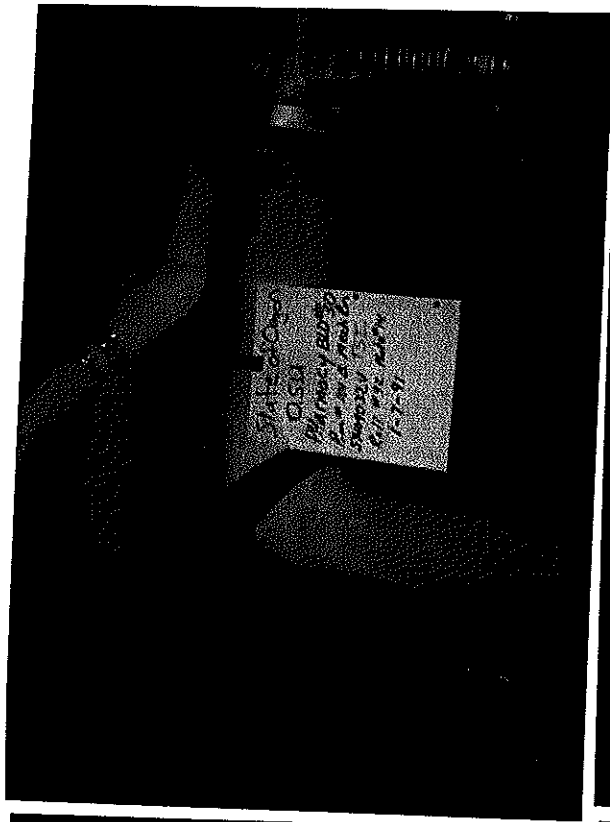


EXHIBIT J