Construction Contracts Administration, Procurement Contracts & Materials Management (PCMM)
Oregon State University
644 SW 13th Ave.
Corvallis, Oregon 97333

P 541-737-4261
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oregonstate.edu

15 November 2018

Oregon State University
Construction Contracts Administration
Valley Library Extended Campus Reconfiguration

ADDENDUM NO. 1

THIS ADDENDUM IS BEING ISSUED for clarification and/or revisions of the drawings and specifications as noted. This document is hereby made a part of the Contract Documents to the extent as though it was originally included herein.

Item 1	The Bid Opening/Closing date has been changed **from** November 27, 2018 at 2:00 PM Pacific Time **to** November 30, 2018 at 2:00 PM Pacific Time.
	The following changes shall be made to the **TECHNICAL SPECIFICATIONS:**
Item 2	DELETE the project manual in its entirety. Replace with the project manual in this addendum.
Item 3	DELETE Bid Form in its entirety. It is replaced with the Revised Bid Form attached to this addendum.
	The following changes shall be made to the **Drawings:**
Item 4	DELETE Sheet A201 in its entirety. Replace with Sheet A201 attached to this addendum.
Item 5	DELETE Sheet A501 in its entirety. Replace with Sheet A501 attached to this addendum.
Item 6	DELETE Sheet A601 in its entirety. Replace with Sheet A601 attached to this addendum.
Item 7	DELETE Sheet A700 in its entirety. Replace with Sheet A700 attached to this addendum.
Item 8	DELETE Sheet A902 in its entirety. Replace with Sheet A902 attached to this addendum.

END OF ADDENDUM NO. 1

REVISED
11/15/2018

VALLEY LIBRARY EXTENDED CAMPUS RECONFIGURATION

Oregon State University

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

PROJECT #2048-18
OCTOBER 2018

Oregon State University

Valley Library

Specifications

9 October, 2018

Division 1 - 10

Hennebery Eddy
Architects

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Prepared by Hennebery Eddy Architects Inc. dated 9-Ocoter-2018 Revision November 9, 2018 Addendum 1

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Prepared by Systems West Engineers. dated August 17, 2018

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Prepared by Systems West Engineers. dated August 17, 2018

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OREGON STATE UNIVERSITY

INSTRUCTIONS TO BIDDERS

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14.	Security to Be Furnished by Each Bidder
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INSTRUCTIONS TO BIDDERS
OSU Standard Chapter 580, Divisions 61 and 63 govern this OSU procurement process.

Article 1. Definitions

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

"Bid Form"- refers to OSU form provided by Owner to be completed by Bidder.

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

Article 2. Scope of Work

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

Article 3. Examination of Site and Conditions

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

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

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

Article 4. Substitute Materials Approval Process

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

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

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

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

Article 5. Interpretation of Project Manual

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

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

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

Article 6. Execution of the Bid Form

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

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

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

Article 7. Prohibition of Alterations to Bid

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

Article 8. Submission of Bid

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

Article 9. Bid Closing and Opening of Bids

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

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

Article 10. Acceptance or Rejection of Bids by Owner

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

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

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

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

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

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

Article 11. Withdrawal of Bid

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

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

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

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

Article 13. Recyclable Products

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

Article 14. Security to Be Furnished by Each Bidder

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

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

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

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

Article 15. Execution of Bid Bond

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

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

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

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

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

OREGON STATE UNIVERSITY

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

Project Name: Valley Library Extended Campus Reconfiguration

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

SB-1, Revise Article 4 as follows:

Delete the last sentence of sub-paragraph 4.3 and revise to read:

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

SB-2, Security to be Furnished by Each Bidder

Delete Article 14 of Instructions to Bidders in its entirety.

SB-3, Execution of Bid Bond

Delete Article 15 of Instructions to Bidders in its entirety.

OREGON STATE UNIVERSITY

BID FORM

PROJECT: VALLEY LIBRARY EXTENDED CAMPUS RECONFIGURATION

BID CLOSING: NOVEMBER 30, 2018 at 2:00 PM PACIFIC TIME

BID OPENING: NOVEMBER 30, 2018 at 2:00 PM PACIFIC TIME

FROM: _____
Name of Contractor

TO: Oregon State University ("Owner")
Construction Contracts Administration
644 SW 13th Street
Corvallis, Oregon 97333-4238

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

____a. An individual doing business under an assumed name registered under the laws of the State of _____; or

____b. A partnership registered under the laws of the State of _____; or

____c. A corporation organized under the laws of the State of _____; or

____d. A limited liability corporation/company organized under the laws of the State of _____;

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

_____ Dollars ($_____)

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

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

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

SAMPLE

3. The Undersigned certifies that: (1) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (2) The contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

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

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

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

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

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

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

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

11. Accompanying herewith is Bid Security which is equal to ten (10) percent of the total amount of the Basic Bid.

12. The Undersigned further agrees that the Bid Security accompanying the Bid is left in escrow with the Owner; that the amount thereof is the measure of liquidated damages which the Owner will sustain by the failure of the Undersigned to execute and deliver the above-named Agreement Form, Performance Bond and Payment Bond, and, that if the Undersigned defaults in either executing the Agreement Form or providing the Performance Bond and Payment Bond within twenty (20) calendar days after receiving the Contract Documents, then the Bid Security may become the property of the Owner at the Owner's option; but if the Bid is not accepted within thirty (30) calendar days of the time set for the opening of the Bids, or if the Undersigned executes and timely delivers said Agreement Form, Performance Bond and Payment Bond, the Bid Security shall be returned.

SAMPLE

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

Performance Bond and Payment Bond will be: _____.
(name of surety company - not insurance agency)

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

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

NAME OF FIRM _____

ADDRESS _____

_____

FEDERAL TAX ID _____

TELEPHONE NO _____

FAX NO _____

SIGNATURE 1) _____
Sole Individual - Signature

_____
Sole Individual - Printed Name

or 2) _____
Partner

or 3) _____
Authorized Officer of Corporation - Signature

_____
Authorized Officer of Corporation Printed Name

(SEAL)

_____
Attested: Secretary of Corporation

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

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

SAMPLE

OREGON STATE UNIVERSITY
PUBLIC IMPROVEMENT CONTRACT

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

1. Contract Price, Contract Documents and Work.

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

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

[ ] (RESERVED)

2. Representatives.

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

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

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

3. Contract Dates.

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

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

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

4. Integration

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

SAMPLE

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
Interim Vice President for Finance and Administration

SAMPLE

OREGON STATE UNIVERSITY

PERFORMANCE 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 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, and (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, and (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

SAMPLE

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

SAMPLE

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, and (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, and (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, and (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; and (5) shall promptly pay all contributions due the State Industrial Accident Fund and the State Unemployment Compensation Fund

SAMPLE

from the Principal or its subcontractors in connection with the performance of the Contract; and (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, and (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

SAMPLE

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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OREGON STATE UNIVERSITY
GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS
("Public Improvement General Conditions")

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 (vii) 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 r e p r o d u c e 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 Standard580-063-0045.

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 O w n e r 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 Contract until evidence of reinstated or replacement coverage is provided to Owner.

G.3.7 Certificate(s) of Insurance: As evidence of the insurance coverage required by this Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to execution of the Contract. The certificate(s) will specify all of the parties who are additional insureds or loss payees for this contract. Insurance coverage required under this Contract shall be obtained from insurance companies or entities acceptable to the Owner and that are eligible to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to conduct an insurance business and issue policies of insurance in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and which are subject to approval by the Owner. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self-insurance included hereunder. Any deductible, self-insured retention and/or self-insurance in excess of $50,000 shall be subject to approval by the Owner in writing and shall be a condition precedent to the effectiveness of any Contract. The Owner has the right to require the Contractor at any time during the performance of the Work to furnish to Owner copies of the Contractor's actual policies.

SECTION H
SCHEDULE OF WORK

H.1 CONTRACT PERIOD

H.1.1 Time is of the essence. The Contractor shall at all times carry on the Work diligently, without delay and punctually fulfill all requirements herein. If required by the Contract Documents, Contractor shall commence Work on the site within fifteen (15) Days of Notice to Proceed, unless directed otherwise.

H.1.2 Unless specifically extended by an Amendment or Change Order, all Work shall be complete by the date contained in the Contract Documents. The Owner shall have the right to accelerate the completion date of the Work, which may require the use of overtime. Such accelerated Work schedule shall be an acceleration in performance of Work under Section D.1.2 (f) and shall be subject to the provisions of Section D.1.

H.1.3 The Owner shall not waive any rights under the Contract by permitting the Contractor to continue or complete in whole or in part the Work after the date described in Section H.1.2 above.

H.2 SCHEDULE

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

H.3 PARTIAL OCCUPANCY OR USE

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

SECTION I
CORRECTION OF WORK

I.1 CORRECTION OF WORK BEFORE FINAL PAYMENT

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

I.2 WARRANTY WORK

I.2.1 Neither the final certificate of payment nor any provision of the Contract Documents shall relieve the Contractor from responsibility for defective Work and, unless a longer period is specified, Contractor shall correct all defects that appear in the Work within a period of one year from the date of issuance of the written notice of Substantial Completion by the Owner except for latent defects which will be remedied by the Contractor at any time they become apparent. The Owner shall give Contractor notice of defects with reasonable promptness. The Contractor shall perform the warranty Work by correcting defects within twenty-four (24) hours of notification by Owner, unless otherwise specified in the Contract Documents. Should the Contractor fail to respond within the specified response time, the Owner may, at its option, complete the necessary repairs using another contractor or its own forces. If Owner completes the repairs using Owner's own forces, Contractor shall pay Owner at the rate of one and one- half (1½) times the standard hourly rate of Owner's forces, plus related overhead and any direct non-salary costs. If Owner completes the repairs using another contractor, Contractor shall pay Owner the amount of Owner's direct costs billed by the other contractor for the work, plus the direct salary costs and related overhead and direct non-salary expenses of Owner's forces who are required to monitor that contractor's work. Work performed by Owner using Owner's own forces or those of another contractor shall not affect the Contractor's contractual duties under these provisions, including warranty provisions. In the event of warranty work consisting of emergency repairs, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand, without affecting Contractor's obligations.

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

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

I.2.4 The one-year period for correction of Work shall be extended

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

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

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

SECTION J
SUSPENSION AND/OR TERMINATION OF THE WORK

J.1 OWNER'S RIGHT TO SUSPEND THE WORK

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

(a) Failure of the Contractor to correct unsafe conditions;

(b) Failure of the Contractor to carry out any provision of the Contract;

(c) Failure of the Contractor to carry out orders;

(d) Conditions, in the opinion of the Owner, which are unsuitable for performing the Work;

(e) Time required to investigate differing site conditions;

(f) Any reason considered to be in the public interest.

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

J.2 CONTRACTOR'S RESPONSIBILITIES

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

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

J.2.3 **COMPENSATION FOR SUSPENSION**

J.2.4

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

J.4 OWNER'S RIGHT TO TERMINATE CONTRACT

J.4.1 The Owner may, without prejudice to any other right or remedy, and after giving Contractor seven (7) Days' written notice and an opportunity to cure, terminate the Contract in whole or in part under the following conditions:

(a) If Contractor should, voluntarily or involuntarily, seek protection under the United States Bankruptcy Code and Contractor as debtor-in-possession or the Trustee for the estate fails to assume the Contract within a reasonable time;

(b) If Contractor should make a general assignment for the benefit of Contractor's creditors;

(c) If a receiver should be appointed on account of Contractor's insolvency;

(d) If Contractor should repeatedly refuse or fail to supply an adequate number of skilled workers or proper materials to carry on the Work as required by the Contract Documents, or otherwise fail to perform the Work in a timely manner;

(e) If Contractor should repeatedly fail to make prompt payment to Subcontractors or for material or labor, or should disregard laws, ordinances or the instructions of the Owner; or

(f) If Contractor is otherwise in breach of any part of the Contract.

(g) If Contractor is in violation of Applicable Laws, either in the conduct of its business or in its performance of the Work.

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

J.5 TERMINATION FOR CONVENIENCE

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

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

J.6 ACTION UPON TERMINATION

J.6.1 Upon receiving a notice of termination, and except as directed otherwise by the Owner, Contractor shall immediately cease placing further subcontracts or orders for materials, services, or facilities. In addition, Contractor shall terminate all subcontracts or orders to the extent they relate to the Work terminated and, with the prior written approval of the Owner, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts and orders.

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

I.6.3 Upon Owner's notice of termination pursuant to either Section J.4 or J.5, if Owner shall so elect, Contractor shall assign the Owner such subcontracts and orders as Owner shall specify. In the event Owner elects to take assignment of any such subcontract or order, Contractor shall take such action and shall execute such documents as Owner shall reasonably require for the effectiveness of such assignment and Contractor shall ensure that no contractual arrangement between it and its subcontractors or suppliers of any tier or sub-tier shall prevent such assignment.

SECTION K
CONTRACT CLOSE OUT

K.1 RECORD DOCUMENTS

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

K.2 OPERATION AND MAINTENANCE MANUALS

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

K.3 COMPLETION NOTICES

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

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

K.4 TRAINING

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

K.5 EXTRA MATERIALS

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

K.6 ENVIRONMENTAL CLEAN-UP

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

K.7 CERTIFICATE OF OCCUPANCY

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

due to the sole fault or neglect of Owner.

K.8 OTHER CONTRACTOR RESPONSIBILITIES

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

K.9 SURVIVAL

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

OREGON STATE UNIVERSITY SUPPLEMENTAL

GENERAL CONDITIONS

To The

PUBLIC IMPROVEMENT GENERAL CONDITIONS

Project Name: **Valley Library Extended Campus Reconfiguration**

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

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

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

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

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

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

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

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

- **You must do this step first or the report will not let you add any information: In Row 1 Column B there is a drop down menu. You must select yearend (if the job has not been completed) or final (if the job is completed and you have submitted for retention). Once you choose yearend or final in the drop down menu there will be areas highlighted in light green and red. Those are the areas that you are required to fill out. If you did not use or planning to use any MWESB then the left side of the report (Light Green area) still needs to be filled out and the red area needs to remain blank.**

- **If your agency is an MWESB or if you are using/used an MWESB subcontractor then you need to fill out the information in the report that is highlighted in light green and red (see instructions in the next bullet). If you are not an MWESB or used a Subcontractor that is an MWESB then you need to fill out the left side of the form (Light Green areas) and leave the red area blank.**

- **In row 2 Column B there is another drop down menu, click the drop down menu and choose Fiscal Year 2015.**

- **In Row 4 Column B there is another drop down menu, click there and choose OSU.**

Oregon University System

MWESB Subcontractor Report

REPORT BEING SUBMITTED	

OVERALL PROJECT DATA

Reporting Period	2011
Campus	
General Contractor's Name	
Contract Number	
Project Name	
Contract Execution Date (Date Contract was Signed by the Owner)	
Date of Final Payment Application	
Initial Total Contract Value	
Total Contract Value billed within the fiscal year (July 1 - June 30)	
Final Total Contract Value	
Total Number of Subcontractors/Suppliers Used on Project	
Total Number of First-Tier Subcontractors/Suppliers Used on Project	
Number of First-Tier MWESB Subcontractors/Suppliers	

CALCULATED REPORTING DATA (Self Calculating - No Data Entry)

Number of MWESB Subcontractors/Suppliers	0
% MWESB Subcontractors/Suppliers	
% First-Tier MWESB Subcontractors/Suppliers	

CERTIFIED MWESB TOTALS

Value Awarded to MWESB Contractors/Suppliers	$0.00
% Value Awarded to MWESB Contractors/Suppliers	
Value - **minority-owned** MWESB subcontractors/suppliers	$0.00
% - **minority-owned** MWESB subcontractors/suppliers	
Value - **women-owned** MWESB subcontractors/suppliers	$0.00
% - **women-owned** MWESB subcontractors/suppliers	
Value - **emerging small business** MWESB subcontractors/suppliers	$0.00
% - **emerging small business** MWESB subcontractors/suppliers	

SELF-IDENTIFIED or OTHER CERTIFIED MWESB TOTALS

Value - **self-identified or other certified** subcontractors/suppliers	$0.00
% - **self-identified or other certified** subcontractors/suppliers	

OVERALL PROJECT CONTRACT HISTORY

% Value Awarded to MWESB Contractors/suppliers at Initial Contract	#DIV/0!
% Value Awarded to MWESB Contractors/suppliers at Final Contract	#DIV/0!

FOR OFFICIAL USE ONLY:

Date Received by the Campus	
Initials of Campus staff who checked the document	

Individual Contractor/Sub-Contractor/Supplier Data Entry Matrix

Name of MWESB General/ Subcontractor/ Supplier	State of Oregon MWESB Certification Number	Self-Identified or Other Certified	Initial Sub-Contract Value	Sub-Contract value billed within the fiscal year (July 1-June 30)	Final Sub-Contract Value	Minority-Owned	Women-Owned	Emerging Small Business

ATTACHMENT A
PREVAILING WAGE RATES

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

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

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

These BOLI wage rates are available on line at:
http://www.boli.state.or.us/BOLI/WHD/PWR/pwr_state.shtml

SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY OF WORK

A. The Work Contract consists of tenant improvements for administration portions of the 3rd and 4th floors at the Valley Library on the Oregon State University campus, Corvallis, Oregon. OSU Construction Standards are located at http://fa.oregonstate.edu/cpd-standards and are herein incorporated by this reference.

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 Contracts Administration (CCA), Oregon State University. Work shall start on or after December 3, 2018. Work shall be completed on or before June 30, 2019.

1.02 CONTRACTORS USE OF PREMISES

A. Contractor shall limit use of the Premises for work and storage to allow for:
   1. Owner occupancy, day and night.
   2. Public use, day and night.
   3. Security.
   4. Safe entry and exit for vehicles and pedestrians.
   5. Fire egress.

B. Coordinate all operations with the Owner's Authorized Representative during the construction period. A 96-hour notification is required prior to scheduled utility shutdowns or street closures, but more lead time is often required to schedule around other critical activities.

C. Limit Contractor's employee parking to locations designated at the Pre-construction Conference.

1.03 OWNER OCCUPANCY

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

B. Conduct operations in such a way to ensure the least inconvenience to the

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

1.04 ASBESTOS AND OTHER HAZARDOUS MATERIAL

A. The Owner has made a reasonable attempt to locate and identify asbestos or other hazardous material that may be encountered during the course of the Work.

B. If the Contractor observes or suspects the existence of asbestos, polychlorinated biphenyl (PCB) or other hazardous materials in the structure or components of the building, the Contractor shall immediately stop work and notify the Owner's Authorized Representative.

C. The Owner will arrange for the removal of asbestos, polychlorinated biphenyl (PCB) or other hazardous materials as required by Facilities Services personnel or by separate contract.

D. Schedule ten (10) days of slack or "down" time for the removal of hazardous materials without penalty to Owner for the delay of the Contract.

1.05 LEAD BASED PAINT

A. The Owner may have tested existing paint in the project area and if levels are found the following conditions apply.

B. Contractor shall remove paint as specified for surface preparation and capture removed material for disposal.

C. Contractor shall follow OSHA guidelines involving exposure to workers.

D. Owner will provide containers for Contractor's use at project site.

E. Contractor shall comply with the requirements of DEQ and EPA and shall submit a lead abatement plan.

F. Contractor shall separate lead contaminated material from effluent and water.

G. Owner will dispose of lead paint and effluent resulting from stripping operation.

H. Soil contaminated by stripping operations shall be replaced with topsoil.

END OF SECTION

SECTION 01 24 76

APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Work of this Section includes forms and procedures for progress payments.

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

1.02 APPLICATION FORMS

A. For applications for payment, use sample contract payment request on company letterhead, or AIA Document G702, supported by AIA Document G703, Continuation Sheet, or similar document.

B. Prepare the Schedule of Values in such a manner that each major item of Work and each subcontracted item of Work is shown as a line item broken down in terms of material and labor costs on AIA Document G703, Application Certification of Payment, Continuation Sheet or similar format. The sample continuation sheet shall be the minimum Schedule of Values breakdown.

C. The Schedule of Values shall be submitted for review by the Owner prior to the first application for payment; and may be used when, and only when, accepted in writing by the Owner.

D. Payment request is to include the Contractor's Federal Tax Identification number and return address.

1.03 PAYMENTS

A. The Owner will make progress payments on account of the Contract once monthly for the scheduled duration of the project (i.e. three (3) payments on a three-month project), based on the value of work accomplished or materials on the job site, as stated in the Schedule of Values on the Application and Certificate Payment.

B. Notwithstanding the foregoing, as this project is scheduled to takes six (6) months to complete, Owner will only make six (6) payments, plus a final retainage payment, as applicable.

C. Complete and forward Application to the Owner on or about the 15th day of each month for work performed the previous month and include certified payroll statements as specified in the OSU General Conditions.

D. Submit one (1) copy of forms requesting payment to the Owner.

E. Payments will be made on protected materials on hand at the job site properly stored, protected, and insured.

F. Estimated quantities shall be subject to the Owner's review and judgment.

1.04 EARLY PURCHASE AND PAYMENT OF MATERIALS AND EQUIPMENT

A. Order materials and equipment requiring a long lead or waiting time early so as not to delay progress of the Work.

B. The Contractor will be reimbursed for early order materials or equipment upon receipt and verification of quality and quantity against submittals and shipping documents by the Owner's Authorized Representative.

C. Receipt shall be to the job site or stored at Owner's other premises in an orderly and safe manner, secured from normal weather damage.

D. Security remains the responsibility of the Contractor.

END OF SECTION

CONTRACT PAYMENT REQUEST

DATE: _____

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

Payment Request No. _____Contract No. _____ Period from _____ to _____

Project: _____

Original Contract Amount ..... $_____

Change Orders (Net Amount) ..... $_____

Contract Total to Date ..... $_____

==========

Total Completed and Stored to Date ..... $_____

Less Retainage (5%), if applicable ..... $_____

Total Earned, Less Retainage (if applicable) ..... $_____

Less Previous Payments ..... $_____

Net Amount Due this Request ..... $_____

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

Contractor:_____

By: _____Date: _____

Federal Tax ID Number:_____

Address:_____

_____

CONTINUATION SHEET

Project Name:

Application No.:

Date:

Period To:

WRN No.:

NOTES:

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

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

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

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 five (5) calendar days before bid opening. Requests received after this date will not

be considered.

1.05 SUBSTITUTIONS DURING CONSTRUCTION

A. Substitutions will normally not be considered after date of Contract except when required due to unforeseen circumstances.

B. Within a period of thirty (30) days after date of Contract, the Owner may, at its option, consider formal written requests for substitution of products in place of those specified, when submitted in accordance with the requirements stipulated herein.

C. One or more of the following conditions must be documented in any such request:
   1. Required for compliance with final interpretation of code or insurance requirements.
   2. Required due to unavailability of a specified product.
   3. Required because of the inability of the specified product to perform properly or to fit in the designated space.
   4. Substitution would be substantially in the best interest of the Owner in terms of cost, time, or other considerations.

1.06 SUBSTITUTIONS NOT PERMITTED

A. If implied on submittals without first requesting approval thereof.

B. If acceptance will require substantial revision of the Contract Documents.

END OF SECTION

SUBSTITUTION REQUEST FORM

TO: _____

PROJECT: _____

SPECIFIED ITEM:

_____	_____	_____	_____
Section	Page	Paragraph	Description

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

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

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

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

1. The proposed substitution does not affect dimensions shown on Drawings.

2. The undersigned will pay for changes to the building design, including engineering design, detailing and construction costs caused by the requested substitution.

3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements.

4. Maintenance and service parts will be locally available for the proposed substitution.

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

Submitted by:

Signature _____

Firm _____

Address _____

_____

Date _____

Telephone _____

Attachments:

For use by Design Consultant:

☐ Accepted ☐ Accepted as noted

☐Not Accepted ☐ Received too late

By _____

Date _____

Remarks _____

SECTION 01 31 19

PROJECT MEETINGS

PART 1 GENERAL

1.01 PRE-CONSTRUCTION MEETING

A. Architect/Engineer/Designer, Contractor and Owner will meet prior to start of the Work (within seven (7) days after notice to proceed) to discuss at least the following topics and any others of mutual interest.
   1. Schedule of Values
   2. Permit Status/tree protection/erosion control
   3. List of sub-contractors
   4. Job inspections.
   5. Early purchase of, and/or lead time requirements for material and equipment/prepurchase 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

VALLEY LIBRARY EXTENDED CAMPUS RECONFIGURATION
October 2018

SECTION 01 42 13

ABBREVIATIONS AND SYMBOLS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

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

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

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

HM	hollow metal
HOR	horizontal
HP	high point
HR	hour
HT	height
HTG	heating
HVAC	heating, ventilating, air conditioning
HWD	hardwood
HWH	hot water heater
ID	inside diameter, identification
IN	inch
INCIN	incinerator
INCL	include(d), ion)
INT	interior
INV	invert
JB	junction box
JC	janitor's closet
JT	joint
KD	kiln dried
KCP	Keene's cement plaster
KO	knockout
KP	kick plate
LAB	laboratory
LAM	laminate(d)
LAV	lavatory
LBS	pounds
LH	left hand
LL	live load
LONGIT	longitudinal
LP	low point
LW	lightweight
MAX	maximum
MB	machine bolt
M. MECH	mechanic(al)
MFR	manufacture(r)
MH	manhole
Min	minimum, minute
MISC	miscellaneous
MO	masonry opening
MO#	model number
MOD	modular
MPH	miles per hour
MS	machine screw
MTL	metal
MULL	mullion
MWP	membrane waterproofing
NAT	natural, natural finish
NIC	not in contract
NO	number
NOM	nominal
NTS	not to scale
OA	overall
OBS	obscure
OC	on center(s)
OD	outside diameter
OF	overflow
OFCI	owner furnished contractor installed
OFOI	owner furnished owner installed
OHMS	ovalhead machine screw
OHWS	ovalhead wood screw
OPG	opening
OPP	opposite
OZ	ounce(s)
P	paint(ed)
PB	push button
PCF	pounds per cubic foot
PCP	putting coat plaster
PERF	perforate(d)
PL	plate, property line
PLAM	plastic laminate
PLAS	plaster
PNL	panel
PP	push plate
PR	pair
PREP	prepare

PSF	pounds per square foot
PSI	pounds per square inch
PT	point, pressure treated
PTN	partition
PVC	polyvinyl chloride
PWD	plywood
QT	quarry tile
R	rise
RA	return air
RAD	radius
RCP	reflected ceiling plan
RD	roof drain
REF	reference
REFR	refrigerator
REINF	reinforce(ing)
REQ	required
RET'G	retaining
REV	revision(s), revised
RH	right had
RM	room
RO	rough opening
RSF	resilient sheet flooring
SC	solid core
SCHED	schedule
SEC	section
SF	square feet (foot)
SHT	sheet
SHTHG	sheathing
SIM	similar
SL	sleeve
SOG	slab on grade
SPEC	specification(s)
SQ	square
SS	storm sewer
S4S	finished 4 sides
SD	storm drain
ST	steel, street
ST ST	stainless steel
STD	standard
STR	structural
SUPP	supplement
SUPT	support
SUSP	suspended
SV	sheet vinyl
T	tread
TBM	top bench mark
T&G	tongue and groove
TB	towel bar
TC	top of curb
TEL	telephone
TEMP	tempered
THK	thickness
TKBD	tackboard
TO	top of
TP	top of paving
TRANS	transverse
TS	top of slab
TV	television
TW	top of wall
TYP	typical
UNO	unless noted otherwise
VAT	vinyl asbestos tile
VB	vapor barrier
VCT	Vinyl Composition Tile
VERT	vertical
VG	vertical grain
VIF	verify in field
VWC	vinyl wall covering
W	width, wide, water
W/	with
W/O	without
WC	water closet
WD	wood, wood finish
WP	waterproof(ing)
WNS	wainscot
WR	water resistant
WS	waterstop
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 subsubcontractor 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 PUBLICECODES.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

VALLEY LIBRARY EXTENDED CAMPUS RECONFIGURATION
October 2018

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'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. 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.

B. 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.

C. 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 PREPARATION

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

1.14 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.

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 Contracts 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 Contracts 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.

<u>EH&S Review:</u> <u>Date:</u>

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 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 02 41 00

DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.2 RELATED REQUIREMENTS

A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.

B. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

C. Section 01 70 00 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Site Plan: Showing:
   1. Areas for temporary construction and field offices.

C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

D. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Section 01 32 33 - Photographic Documentation. Submit before Work begins.

E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

F. Submittals due at time of closeout:
   1. Inventory: Submit a list of items that have been removed and salvaged.
   2. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 QUALITY ASSURANCE

A. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 01 Section 01 31 00 - Project Management and Coordination. Review methods and procedures related to selective demolition including, but not limited to, the following:
   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.7 FIELD CONDITIONS

A. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
1. Hazardous materials have been removed by Owner under a separate contract.
2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

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

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

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

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 EXECUTION

3.1 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
1. Obtain required permits.
2. Provide, erect, and maintain temporary barriers and security devices.
3. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
4. Do not close or obstruct roadways or sidewalks without permit.
5. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
6. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

3.2 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as shown.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 in locations indicated on drawings.

C. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

F. Removed and Salvaged Items:
   1. Clean salvaged items.
   2. Verify that construction and utility arrangements are as shown.
   3. Pack or crate items after cleaning. Identify contents of containers.
   4. Report discrepancies to Architect before disturbing existing installation.
   5. Store items in a secure area until delivery to Owner.
   6. Transport items to Owner's storage area designated by Owner .
   7. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
   8. Protect items from damage during transport and storage.

G. Removed and Reinstalled Items:
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 - Temporary Facilities and Controls in locations indicated on drawings.
   2. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
   3. Provide sound retardant partitions of construction indicated on drawings in locations indicated on drawings.
   4. Pack or crate items after cleaning and repairing. Identify contents of containers.
   5. Protect items from damage during transport and storage.

6. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
7. See schedule at end of section for list or items to be removed and reinstalled.

3.3 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 07 21 00

THERMAL INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Acoustic Board Batt Insulation

1.2 RELATED REQUIREMENTS

A. Section 09 21 16 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.3 REFERENCE STANDARDS

A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.

D. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

E. NAIMA - Recommendations for Installation in Residential and Other Light-Frame Construction - Fiber Glass Building Insulation; North American Insulation Manufacturers Association; 1999.

1.4 DEFINITIONS

A. Glass MINERAL Wool: Interchangeable with fiber glass, but replacing the term with the intent to disassociate and differentiate Glass Mineral Wool from the potential health and safety of special purpose or reinforcement products that do not meet the bio soluble criteria of insulation made from glass.

1.5 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

PART 2 PRODUCTS

2.1 APPLICATIONS

A. INSULATION F: Insulation in Metal Framed Walls: Batt insulation with no vapor retarder.

2.2 BATT INSULATION MATERIALS

A. General Sustainability Requirements: Provide glass-fiber blanket insulation as follows:
   1. Free of Formaldehyde: Insulation manufactured with 100 percent acrylic binders and no formaldehyde.

B. INSULATION F: Glass Mineral Wool Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
   1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
   3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
   4. Facing: Unfaced.
   5. Manufacturers:

a. Knauf Insulation; www.knaufinsulation.com
b. CertainTeed Corporation: www.certainteed.com.
c. Johns Manville Corporation: www.jm.com.
d. Owens Corning Corp: www.owenscorning.com.

2.3 ACCESSORIES

A. INSULATION PIN: Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.2 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

D. Install Insulation with facing contacting ceiling system. Butt tightly together leaving no gap for acoustical leakage.

3.3 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 08 11 13

HOLLOW METAL FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Steel frames for wood doors.

B. Fire-rated steel doors and frames.

C. Steel relite frames.

1.2 RELATED REQUIREMENTS

A. Section 08 71 00 - Door Hardware.

B. Section 08 80 00 - Glazing: Glass for doors and borrowed lites.

1.3 REFERENCE STANDARDS

A. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.

B. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.

C. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.

1.4 SUBMITTALS

A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.

B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum Five years documented commercial experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented commercial experience.

C. Maintain at the project site a copy of all reference standards dealing with installation.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with NAAMM HMMA 840.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Steel Frames:
   1. Stiles; www.stilesdoors.com
   2. Steelcraft, an Ingersoll Rand brand: www.steelcraft.com.
   3. Assa Abloy Ceco, Curries, or Fleming: www.assaabloydss.com.
   4. Republic Doors: www.republicdoor.com.
   5. Or approved equal

2.2 STEEL FRAMES

A. General:
   1. Comply with the requirements of grade specified for corresponding door.
      a. ANSI A250.8 Level 3 Doors: 14 gage frames.

1) For interior use, form frames from cold- or hot-rolled steel sheet of the following thicknesses:
   (a) Openings up to 48 Inches Wide: 0.053 inch.
   (b) Openings 48 Inches and Wider: 0.067 inch.
2) Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 2
3) Frames for Sound-Rated Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 1, 16 gage

2. Spreader Bars: Provide removable spreader bar across bottom of frames, tack welded to jambs and mullions.
3. Frames Installed Back-to-Back: Reinforce with steel channels anchored to floor and overhead structure.
4. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.
5. Mullions and Transom Bars: Provide closed or tubular mullions and transom bars where indicated. Fasten mullions and transom bars at crossings and to jambs by butt welding. Reinforce joints between frame members with concealed clip angles or sleeves of same metal and thickness as frame.
   a. Provide false head member to receive lower ceiling where frames extend to finish ceilings of different heights.
6. Head Reinforcement: Provide minimum 0.093-inch- thick, steel channel or angle stiffener for opening widths more than 48 inches .

B. Interior Door Frames, Non-Fire-Rated: Fully welded type.

C. Interior Door Frames, Fire-Rated: Fully welded type.
   1. Fire Rating: Same as door, labeled.

2.3 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.4 FRAME ANCHORS

A. Jamb Anchors:
   1. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.

B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:
   1. Monolithic Concrete Slabs: Clip-type anchors, with two holes at each jamb to receive fasteners.
   2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

C. Head Anchors: Provide 2 head anchors for frames more than 42 inches wide and mounted in steel-stud walls.

2.5 ACCESSORY MATERIALS

A. Glazing: As specified in Section 08 80 00 - Glazing.

B. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

2.6 ACCESSORY MATERIALS

A. Glazing: As specified in Section 08 80 00, factory installed.

2.7 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where

practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117 [ANSI/NAAMM-HMMA 861].

C. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
   1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
   2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
   3. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
   4. Jamb Anchors: Provide number and spacing of anchors as follows:
      a. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
         1) Three anchors per jamb up to 60 inches high.
         2) Four anchors per jamb from 60 to 90 inches high.
         3) Five anchors per jamb from 90 to 96 inches high.
         4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
         5) Two anchors per head for frames above 42 inches wide and mounted in metal-stud partitions.
   5. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
      a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
      b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

D. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.

E. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
   1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8
   2. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.

F. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
   1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
   2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
   3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
   4. Provide loose stops and moldings on inside of hollow metal work.
   5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

2.8 FINISH MATERIALS

A. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.2 INSTALLATION

A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.

B. Coordinate frame anchor placement with wall construction.

C. Coordinate installation of hardware.

D. Comply with glazing installation requirements of Section 08 80 00.

E. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
    a. At fire-rated openings, install frames according to NFPA 80.
    b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    c. Install frames with removable stops located on secure side of opening.
    d. Install door silencers in frames.
    e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
    a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
4. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.

3.3 TOLERANCES

A. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

B. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

3.4 ADJUSTING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

C. Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.

D. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION

SECTION 08 14 16

FLUSH WOOD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; fire-rated and non-rated.

1.2 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Frames.

B. Section 08 71 00 - Door Hardware.

C. Section 08 80 00 - Glazing.

1.3 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

B. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.

1.4 SUBMITTALS

A. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.

C. Samples: Submit two samples of door construction, 12 by 12 inch in size cut from top corner of door.

D. Warranty, executed in Owner's name.

1.5 QUALITY ASSURANCE

A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented commercial experience.

1. Company with at least one project within the past 5 years with value of woodwork within 20 percent of cost of woodwork for this project.
2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.7 WARRANTY

A. Interior Doors: Provide manufacturer's warranty for the life of the installation.

B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Wood Veneer Faced Doors:

1. Graham Wood Doors: www.grahamdoors.com.

2. Eggers Industries: www.eggersindustries.com.
3. Haley Brothers: www.haleybros.com.
4. Marshfield DoorSystems, Inc: www.marshfielddoors.com.
5. Or approved equal

2.2 DOORS

A. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.

B. Doors: Refer to drawings for locations and additional requirements.
1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS), unless noted otherwise.
2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.

C. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
1. Provide solid core doors at each location.

2.3 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type staved lumber core (SLC), plies and faces as indicated.

B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.
1. Wood edges: 1/4 inch thick installed over full height of door.
2. Top, Middle, and Bottom rail: 5 inches high installed over full width of door.
3. Stile: 2 inches wide.
4. Lock block: 5 inches by 24 inches
5. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.4 DOOR FACINGS

A. Veneer Facing for Transparent Finish: Match Existing, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with slip match between leaves of veneer, balance match of spliced veneer leaves assembled on door or panel face.
1. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design wood veneer type.
2. Vertical Edges: Same species as face veneer.

B. Facing Adhesive: Type I - waterproof.

2.5 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

E. Provide edge clearances in accordance with the quality standard specified.

2.6 FACTORY FINISHING - WOOD VENEER DOORS

A. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:
1. Transparent Finish: Transparent conversion varnish, Premium quality.
2. Transparent:

a. System - 5, Varnish, Conversion.
b. Sheen: Match existing.
c. Manufacturer: See Section 09 91 23 - Interior painting.

B. Factory finish doors in accordance with approved sample.

C. Seal door top edge with color sealer to match door facing.

2.7 ACCESSORIES

A. Hollow Metal Door Frames: As specified in Section 08 11 13.

B. Glazing: As specified in Section 08 80 00.

C. Light Frames
1. Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads unless otherwise indicated.
a. Wood Species: Same species as door faces.
b. Profile: Flush rectangular beads.
c. At wood-core doors with 20-minute fire-protection ratings, provide wood beads and metal glazing clips approved for such use.

D. Gaskets for acoustic doors (see schedule):

E. Pemko 319 Gasket at heads and jambs

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.2 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.

D. Use machine tools to cut or drill for hardware.

E. Coordinate installation of doors with installation of frames and hardware.

3.3 TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.

B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.4 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

C. Operation: Rehang or replace doors that do not swing or operate freely.

D. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

3.5 SCHEDULE

A. Refer to Door and Frame Schedule appended to this section.

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Glass.

B. Glazing compounds and accessories.

1.2 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Frames: Glazed lites in doors and borrowed lites.

B. Section 08 14 16 - Flush Wood Doors: Glazed lites in doors.

1.3 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.

B. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2011).

C. ASTM C1036 - Standard Specification for Flat Glass; 2011.

D. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.

E. GANA (GM) - GANA Glazing Manual; 2009.

F. GANA (SM) - GANA Sealant Manual; 2008.

G. ICC (IBC) - International Building Code; 2015.

1.4 PERFORMANCE REQUIREMENTS

A. Comply with Requirements of Local Jurisdictions for glass and glazing requirements.
   1. At exterior and interior locations, where subject to human impact, provide Tempered Glass as required by IBC, unless laminated safety glass are specifically noted.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual and GANA Sealant Manual for glazing installation methods.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience and who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

C. Source Limitations for Glass: Obtain coated float glass laminated glass and insulating glass from single source from single manufacturer for each glass type.

D. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

E. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
   1. GANA Publications: GANA's "Laminated Glazing Reference Manual" and GANA's "Glazing Manual."
   2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."
   3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
   4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

PART 2 PRODUCTS

2.1 GLAZING UNITS

A. Type IG-1 - Single Vision Glazing:
   1. Application: All interior glazing unless otherwise indicated.
   2. Type: Fully tempered float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch.
   5. Glazing Method: Gasket glazing.

B. Type IG-2 - Fire-Protection-Rated Glazing:
   1. IBC Fire Protection Rating: As indicated on drawings.
   2. Safety Certification: 16 CFR 1201 Category II.
   3. Application: Provide this type of glazing in the following locations:
      a. Glazed lites in fire doors.
      b. Sidelights, borrow lites, and other glazed openings in partitions indicated as having an hourly fire rating.
   4. Thickness: 1/4 inch.
   5. Glazing Method: As required for fire rating.

2.2 GLASS MATERIALS

A. Float Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com.
   2. Guardian Industries Corp: www.sunguardglass.com.
   3. Pilkington North America Inc: www.pilkington.com/na.
   4. PPG Industries, Inc: www.ppgideascapes.com.

B. Float Glass: All glazing is to be float glass unless otherwise indicated.
   1. Annealed Type: ASTM C1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).
   2. Heat-Strengthened and Fully Tempered Types: ASTM C1048.

C. Fire-Protection-Rated Glazing: Type, thickness, and configuration as required to achieve indicated ratings.
   1. IBC Fire Protection Rating: As indicated on drawings.
   2. Provide products listed by Underwriters Laboratories or Intertek Warnock Hersey.
   3. Labeling: Provide permanent label on each piece giving the IBC rating and other information required by the applicable code.

2.3 GLAZING ACCESSORIES

A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.

C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; size as recommended by glazing installer; black color.
   1. Manufacturers:
      a. Pecora Corporation: www.pecora.com.
      b. Tremco Global Sealants: www.tremcosealants.com.
      c. Norton
      d. Or approved equal

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that openings for glazing are correctly sized and within tolerance.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.2 PREPARATION

3.3 INSTALLATION - INTERIOR DRY METHOD (GASKET GLAZING)

A. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.

B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.4 CLEANING

A. Remove glazing materials from finish surfaces.

B. Remove labels after Work is complete.

C. Clean glass and adjacent surfaces.

3.5 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.

3.6 SCHEDULE

END OF SECTION

09 00 00 INTERIOR FINISH MATERIAL SCHEDULE

FINISH	DESCRIPTION	EXISTING INFC	MANUFACTURER	SERIES	COLOR NAME/NO.	SIZE	REMARKS/LOCATION
WOOD 08 14 16							
WD	WOOD VENEER	VERIFY	MATCH EXISTING	--	--	--	WOOD DOORS
TRANSITION STRIPS 09 65 00, 09 68 13							
TS-1	RESILIENT TRANSITION	VERIFY	MATCH EXISTING	--	--	--	CARPET TO RESILIENT
CEILING 09 51 00							
ACT-1	ACOUSTIC CEILING TILE	VERIFY	MATCH EXISTING	--	--	2' X 4'	GRID TO MATCH EXISTING
ACT-2	ACOUSTIC CEILING TILE	VERIFY	ARMSTRONG	CORTEGA	895	2' X 4'	--
BASE 09 65 00							
B-1	RESILIENT BASE	VERIFY	MATCH EXISTING	--	--	--	--
RESILIENT FLOORING 09 65 00							
RF-1	VINYL COMPOSITION TILE	VERIFY	MATCH EXISTING	--	--	--	--
CARPET 09 68 13							
CPT-1	BROADLOOM CARPET	VERIFY	MATCH EXISTING	--	--	--	--
CPT-2	CARPET TILE - FIELD	NA	INTERFACE	HANNOVER	6760 LOAM, GLASBAC	50 CM x 50 CM	BRICK INSTALLATION
CPT-3a	CARPET TILE - ACCENT	NA	INTERFACE	SYNCOPATION	6483 MARITIME	50 CM x 50 CM	BRICK INSTALLATION
CPT-3b	CARPET TILE - ACCENT	NA	INTERFACE	SYNCOPATION	6481 CORAL	50 CM x 50 CM	BRICK INSTALLATION
PAINT COLORS 09 91 23							
P-1	INTERIOR PAINT - FIELD	VERIFY	MILLER PAINT	EVOLUTION	MATCH EXISTING	--	--
P-2	INTERIOR PAINT - ACCENT	NA	MILLER PAINT	EVOLUTION	TBD	--	--
ACOUSTIC WALL PANEL 09 84 00							
AWP-1	ACOUSTIC WALL PANEL	NA	JASCO	QUIET TOUCH	TBD	30" W X 72" H X 1" D	--
ABBREVIATIONS							
SEE SHEET A500 FOR LEGEND OF ABBREVIATIONS.							
SEE SHEETS A500 & A501 FOR LOCATION OF INTERIOR FINISHES ON FINISH PLANS.							
NOTES							
1. WHERE "MATCH EXISTING" IS INDICATED, MATCH THE IMMEDIATELY ADJACENT FINISH MATERIAL. MULTIPLE TYPES OF AN EXISTING FINISH MATERIAL MAY EXIST WITHIN THE PROJECT SCOPE. VERIFY ASSUMPTIONS WITH ARCHITECT.							

SECTION 09 21 16

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Metal stud wall framing.

B. Metal channel ceiling framing.

C. Gypsum wallboard.

D. Joint treatment and accessories.

1.2 RELATED REQUIREMENTS

A. Section 07 21 00 - Thermal Insulation: Acoustic insulation.

B. Section 07 90 05 - Joint Sealers: Acoustic sealant.

1.3 REFERENCE STANDARDS

A. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.

B. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2015.

C. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.

D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.

E. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.

F. GA-216 - Application and Finishing of Gypsum Board; 2013.

G. ESR 1308 - Fire and non-fire resistant rated suspended ceiling framing systems; 2006

H. ER 4071 - Seismic connection details for gypsum wallboard nonbearing partitions and suspended ceilings - 2007

I. USG Gypsum Handbook; latest edition

J. CA 0135 - Green Guard Certification.

1.4 SUBMITTALS

A. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

B. Delegated-Design Submittal: For metal framing and ceilings indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board application and finishingwith minimum of 5 years commercial experience.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

C. ANSI/ASTM C 840 Application and Finishing of Gypsum Board and recommendations and specifications of The Gypsum Association, and The Western Lath/Plaster/ Drywall Industries Association.

D. Pre-Installation Conference and Single Source Requirements: Work of Gypsum Board, Gypsum Board Shaft Wall Assembly, and Non Structural Metal Framing, shall be performed by or under direct supervision of one installer. A Pre-Installation conference is required between all

parties including installer, general contractor, and the Architect before work of these sections begins.

E. Do not mix different brands of Gypsum Board at rated assemblies.

F. Comply with details indicated and with gypsum board manufacturer's written recommendations or, if none available, with United States Gypsum's "Gypsum Construction Handbook."

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.
   1. See PART 3 for finishing requirements.

2.2 METAL WALL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. Scafco Steel Stud Company; www.scafco.com
   2. Cemco; www.cemcosteel.com
   3. Clarkwestern Dietrich Building Systems LLC: www.clarkdietrich.com.
   4. Or approved equal.

B. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
   1. Steel Studs and Runners General: ASTM C 645 and complying with the following
      a. Thickness: 0.0312 inch, except thicker gage indicated below and where required to comply with component size and spacing requirements of ASTM C 754.
         1) Provide 0.0329 inch where greater than 0.0312 inch is indicated, and for head runner, sill runner, jamb, and cripple studs at door and other openings.
         2) Provide 0.0329 inch thick where partition will support shelving, mechanical or electrical equipment, or any other wall supported items.
      b. Depth: As indicated on drawings and in schedules, and as appropriate to suit Installation conditions at gypsum drywall renovation work, but not less than that required to comply with component size and spacing requirements of ASTM C 754.
   2. Studs: "C" shaped with flat or formed webs .
   3. Runners: U shaped, sized to match studs.
   4. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
      a. Minimum Base-Metal Thickness: 0.0312 inch (0.79 mm).
   5. Sheet Metal Acoustical Closure (SHT MTL ACOUSTICAL CLOSURE): Steel sheet formed for blocking in length and width indicated.
      a. Minimum Base-Metal Thickness: 0.0312 inch (0.79 mm).
      b. Retain first paragraph and subparagraphs below for channel bridging for fixture attachment or lateral bracing. Indicate locations and details of installation on Drawings.
   6. Cold-Rolled Channel Bridging: 0.0538-inch (1.37-mm) bare-steel thickness, with minimum 1/2-inch- (12.7-mm-) wide flanges.
      a. Depth: As required but no less than 1-1/2 inches (38.1 mm).
      b. Clip Angle: Not less than 1-1/2 by 1-1/2 inches (38.1 by 38.1 mm), 0.068-inch- (1.73-mm-) thick, galvanized steel.
   7. Hat-Shaped, Rigid Furring Channels (METAL FURRING): ASTM C 645.
      a. Minimum Base Metal Thickness: 0.0312 inch (0.79 mm).
      b. Depth: As indicated on Drawings or 7/8 inch (22.2 mm).
   8. Opening Framing System:
      a. Products:
         1) Scafco Priceless Header and Kwik-Jamb System.

2) Cemco ProXHeader with vertical Jamb Studs
3) ClarkDietrich Red Header and Jamb System

b. Provide associated clips for a complete installation.
c. Follow manufacturers loading tables for selection of appropriate header selection.

2.3 METAL CEILING FRAMING MATERIALS

A. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.

B. Ceiling Channels: C shaped.

C. Hanger Attachments to existing Cast-in-Place Concrete:
1. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times, but not less than 200 lbs. plus the dead load imposed by the ceiling construction, that imposed by construction as determined by testing according to ASTM E 488 by an independent testing agency.
a. Type: Postinstalled, expansion anchor.

D. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch (4.12-mm) diameter.

E. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch (1.37 mm) and minimum 1/2-inch- (12.7-mm-) wide flanges.
1. Depth: As indicated, at least 2-1/2 inches (64 mm) .

F. Furring Channels (Furring Members):
1. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch (22.2 mm) deep.
a. Minimum Base Metal Thickness: 0.0179 inch (0.45 mm) unless otherwise indicated.

G. Grid Suspension System for Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
2. Products: Subject to compliance with requirements, provide one of the following:
a. Armstrong World Industries, Inc.; Drywall Grid Systems.
b. USG Corporation; Drywall Suspension System.
c. Or approved equal.

2.4 AUXILIARY MATERIALS FOR STEEL FRAMING

A. General: Provide auxiliary materials that comply with referenced installation standards.
1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

2.5 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
1. CertainTeed Corporation: www.certainteed.com.
2. Georgia-Pacific Gypsum: www.gpgypsum.com.
3. National Gypsum Company: www.nationalgypsum.com.
4. USG Corporation: www.usg.com.

B. Provide board materials that are CA 01350 Green Guard Certified.

C. Regional Materials: Gypsum panel products shall be manufactured within 500 miles (800 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.

D. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Thickness:

a. Vertical Surfaces: 5/8 inch.

3. Paper-Faced Products:
   a. CertainTeed Corporation; ProRoc Brand Gypsum Board.
   b. Georgia-Pacific Gypsum; ToughRock, ToughRock Fireguard, and ToughRock FireGuard C Gypsum Wallboard.
   c. National Gypsum Company; Gold Bond Brand Gypsum Wallboard.
   d. USG Corporation; Sheetrock Brand Gypsum Panels.

E. Gypsum Ceiling Board: Special sag-resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Ceilings, unless otherwise indicated.
   2. Thickness: 5/8 inch.
   3. Edges: Tapered.
   4. Products:
      a. CertainTeed Corporation; ProRoc Interior Ceiling.
      b. Georgia-Pacific Gypsum; ToughRock CD Ceiling Board.
      c. National Gypsum Company; High Strength Brand Ceiling Board.
      d. USG Corporation; Sheetrock Brand Ultra Light Interior Gypsum Ceiling Board.

2.6 PERFORMANCE CRITERIA

A. Delegated Design: Design Non-structural metal framing and ceilings, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
   1. Delegated Design Requirements: Contractor is responsible for the design and installation of non-structural metal framing and ceiling systems that comply with all Codes in effect at project location. Contractor is responsible for attaining special permits as required by the Building Official having jurisdiction over construction at project site. Provide calculations, layouts and other information required for permitting. Coordinate required inspections and attain all required approvals
   2. Meet requirements of IBC Standards and ICC Evaluation report ESR-1308 and ER 4071.

B. Tolerances:
   1. Ceiling deflection: L/360 maximum.
   2. Wall deflection with tile installation: L/360 maximum.
   3. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction, 1/16 inch in any running foot, and 1/8 inch maximum hollow in 14 inch from corner .

C. Sound Attenuation: STC 50 minimum.

2.7 ACCESSORIES

A. Acoustic Insulation: As specified in Section 07 21 00.

B. Acoustic Sealant: As specified in Section 07 90 05.

C. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
   1. Joint Tape:
      a. Interior Gypsum Wallboard: Paper.
   2. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
      a. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
      b. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping or drying-type, all-purpose compound.
         1) Use setting-type compound for installing paper-faced metal trim accessories.

c. Fill Coat: For second coat, use setting-type, sandable topping or drying-type, all-purpose compound.
d. Finish Coat: For third coat, use setting-type, sandable topping or drying-type, all-purpose compound.

3. Acoustical Sealant: As specified in Section 07 90 05 - Joint Sealants.

D. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C1002; self-piercing tapping type. fasteners at exterior applications shall be corrosion resistive.

E. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.
1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

F. Use adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.8 TRIM ACCESSORIES

A. Accessories for Interior Installation: Cornerbead, edge trim, and control joints complying with ASTM C 1047 and requirements indicated below.

B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
a. Fry Reglet Corporation. (Basis of Design)
b. Gordon Inc.
c. Or approved
2. Shapes as indicated by reference to Fig. 1 designations in ASTM C 1047:
a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
1) Fry Reglet Corp.
2) Or approved equal
b. Material: Galvanized or aluminum-coated steel sheet or rolled zinc Cornerbead on outside corners, unless otherwise indicated.
1) LC-bead with both face and back flanges; face flange formed to receive joint compound. Use LC beads for edge trim.
2) PRM Molding.
3) Control Joint: One-piece control joint formed with V-shaped slot and removable strip covering slot opening. Match existing dimensions.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.2 PREPARATION

A. Steel Door Frames:
1. Install frames and accessories according to manufacturer's installation instructions and as specified.
2. Set frames accurately in position, plumb, align, and brace securely until permanent anchors are set. Anchor to floor wherever possible. Immediately after wall construction is complete, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
3. Place frames for fire rated openings according to NFPA 80.

3.3 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Install steel studs and furring at the following spacing, but not less than required by the referenced steel framing standard to comply with maximum deflection and minimum loading requirements:
   1. Single-layer or multi-layer construction: 16 inches o.c..

C. Install studs so flanges within framing system point in same direction.

D. Install tracks (runners) at floors, ceilings, structural walls, columns and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
   1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.

E. When work of this Section engages structural framing members, floor decks, walls, ceilings or ceiling/roof assemblies, maintain the continuity of fire-resistive construction in compliance with the IBC.

F. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement.
   1. Isolate ceiling assemblies where they abut or are penetrated by building structure.
   2. Isolate partition framing and wall furring where it abuts structure, except at floor. Install slip-type joints at head of assemblies that avoid axial loading of assembly and laterally support assembly.
   3. Use deep-leg deflection track where required :
      a. Use deflection track where required.
      b. Use firestop track where required.

G. Align openings in stud webs for passage of conduits, piping and utilities.

H. Form corners and intersections as detailed, but with not less than three studs.
   1. Locate studs within 2” of internal corners.
   2. Frame around openings.

I. Provide partition height stud adjacent to door frame jambs and secure to jambs. Provide additional partition height stud ± 2”from each jamb stud and attach to jamb studs with spacers 18” above floor and at 12” and 27” below door frame top.

J. Connect stud to structural member with side clips where studs extend vertically past horizontal structural members.
   1. Brace partition to structure to provide stability where partitions stop at or above the ceiling
   2. Provide 1-1/2” wide by 16 ga., horizontal steel channel bridging to prevent stud rotation at any studs not sheathed full-height on both faces

K. Install bracing at terminations in assemblies.

L. Detail control and expansion joints on Drawings.

M. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

N. Frame door openings to comply with GA-600 (most recent edition) and with gypsum board manufacturer's applicable written recommendations, unless otherwise indicated. Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs. Use studs with thickness of 0.0329: (20 gage) for framing door openings.
   1. Install opening framing systems.
   2. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (12.7-mm) clearance from jamb stud to allow for installation of control joint in finished assembly where required.

3. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

O. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

P. Indicate locations and details of firestop track on Drawings.
1. Provide 4 pcf, “Safing”, fire-stop packed into voids to prevent passage of sound, smoke and flame as required and detailed.
2. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

Q. Z-Furring Members:
1. Erect insulation (specified in Section 07 21 00 - Thermal Insulation) vertically and hold in place with Z-furring members spaced 24 inches (610 mm) o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (600 mm) o.c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches (300 mm) from corner and cut insulation to fit.
4. Paragraph below is based on recommendation in GA-216 for wood framing and ASTM C 840 for metal framing.

R. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

S. Align stud framing with edges of tack panels and other visual display boards shown in Section 10 11 01 - Visual Display Boards.

T. Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with gypsum board manufacturer's written recommendations or, if none available, with United States Gypsum's "Gypsum Construction Handbook."
1. Where equipment, door stops, cabinets, book shelves, grab bars and similar wall mounted or supported items are indicated for direct attachment to gypsum board systems, provide not less than a 16 inch wide galvanized steel reinforcement strip,18 ga. or of thickness indicated, accurately positioned and secured behind not less than one gypsum board face layer of 5/8-inch thickness.
2. Coordinate location of blocking with Storage Shelving System Manufacturer (VERIFY).

3.4 ACOUSTIC ACCESSORIES INSTALLATION

A. Erect insulation (specified in Section 07 21 00 - Thermal Insulation) vertically and hold in place with Z-furring members spaced 24 inches (610 mm) o.c.

B. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

C. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.5 SUSPENSION SYSTEMS INSTALLATION

A. Install suspension system components in sizes and spacings indicated on Drawings, but not less than those required by referenced installation standards for assembly types and other assembly components indicated.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:
   1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
      a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
   2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
      a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
   3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
   4. Verify with engineering prior to attachment of hangers to steel roof deck.
   5. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
   6. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
   7. Do not connect or suspend steel framing from ducts, pipes, or conduit.
   8. Furring channels must be wire tied to supports in most fire-resistance-rated assemblies. Verify requirements of fire-resistance-rated assemblies and revise paragraph below to suit Project.

D. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   1. Level ceiling system to a tolerance of 1/1200.

E. Seismic Bracing: Sway-brace suspension systems per requirements of the IBC.

F. Example tolerance below is based on ASTM C 636 for acoustical ceilings.

G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

H. Sway-brace suspended steel framing with hangers used for support including steel studs where used for support of fascia/soffit assemblies.

I. Install framing in sizes and at spacing shown, but not less than requires by referenced steel framing installation standard.
   1. Hangers: 48” o.c., maximum spacing
   2. Carrying Channels (main runners): 48” o.c., maximum spacing
   3. Furring Channels (furring members): 24" o.c..

J. Clip furring members to main runners and to other structural supports as indicated.

K. Install bridging of suspension system as necessary to clear ducts, pipes light fixtures and other work installed above ceilings.

L. Coordinate ceiling suspension systems to avoid conflicts with hangers installed above ceiling by other trades.

3.6 BOARD INSTALLATION

A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   1. Exception: Tapered edges to receive joint treatment at right angles to framing.
   2. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.

3. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    b. Usually retain first subparagraph below if vertical application of panels is specified.
    c. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
4. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
5. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Install sound attenuation blankets before installing gypsum panels, unless blankets are readily installed after panels have been installed on one side.

D. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around Obstructions, and fill voids with insulation. At indoor face of exterior wall, bond units to substrate with adhesive to provide permanent placement and support of units.

E. Use blanket widths and lengths that fill cavities formed by framing members. Where more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.

F. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

G. Install thermal insulation blanket at locations indicated. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation.
1. Use blanket widths and lengths that fill cavities formed by framing members. Where more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

H. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

I. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

J. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

K. Form control and expansion joints with space between edges of adjoining gypsum panels.

L. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

M. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

N. Attach gypsum panels to framing provided at openings and cutouts.

O. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

P. Water resistant sealant: Provide sealant per manufacturer's instructions at edges, around cutouts, and at all penetrations in water resistant gypsum board. Where partition is fire rated, provide fire rated water resistant sealant as required to maintain the fire rating.

Q. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's written recommendations.

R. Line or otherwise seal penetrations: or openings in fire resistive rated partitions, walls or ceilings for pipe sleeves, telephone specialties, toilet accessories, electrical devices or similar items, to maintain the required ratings.

S. Space fasteners in gypsum panels according to referenced standards and manufacturer's recommendations
   1. Space screws a maximum of 12 inches o.c. for vertical applications.

T. Space fasteners in panels that are tile substrates a maximum of 8 inches o.c.

U. Install Gypsum Board panels ½ inch distance of off floor at all wall locations.

V. Any Gypsum Board that gets wet shall be removed and replaced.

3.7 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.8 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in GA-214 ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive flat paint finish or wall coverings, unless otherwise indicated. Gloss and semi-gloss enamel paints are not usually recommended over this level of finish. ASTM C 840 requires application of "drywall primer" on surfaces before final decoration. Priming of gypsum board surfaces specified in Section 09 90 00 - Painting and Coating.
      a. Embed tape in joint compound and apply first, fill (second), and finish (third) coats of joint compound over joints, angles, fastener heads, and accessories. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects and ready for decoration.
   2. Level 3: Walls to receive textured wall finish before painting or heavy wallcoverings where lighting conditions are not critical and in closets.
      a. Embed tape and apply separate first and fill coats of joint compound to tape, fasteners, and trim flanges
   3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish and panels that are substrate for acoustical tile.
      a. Embed tape and apply separate first and fill coat of joint compound to tape, fasteners, and trim flanges
   4. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
      a. Embed tape at joints.

B. Use the following joint compound combinations as applicable to finish levels:
   1. Level 3:

a. Embedding and first coat: Ready mixed, drying type, all purpose or topping compound.
b. Fill (second) coat: Ready mixed, drying type, all purpose or topping compound.

2. Level 4:
a. Embedding and first coat: Setting type joint compound.
b. Fill (second) coat: Setting type joint compound.
c. Finish (third) coat: Ready mixed, drying type, all purpose or topping compound.

C. Primer and its application to surfaces are specified in other Division 9 Sections.

D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
1. Feather coats of joint compound so that camber is maximum 1/32 inch.

3.9 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
1. Level ceiling system to a tolerance of 1/1200.

3.10 FIELD QUALITY CONTROL

A. Above-Ceiling Observation: Before Contractor installs final gypsum board ceilings, Architect will conduct an above-ceiling observation with consultants and report deficiencies in the work observed. Do not proceed with installation of final gypsum board to ceiling support framing until the deficiencies of the above ceiling work have been corrected.
1. Notify Architect seven days in advance of date and time when project, or part of project, will be ready for above-ceiling observation.
2. Before notifying Architect, complete gypsum board ceilings only to the extent that the following installation work has been completed:
a. 80 percent of lighting fixtures, powered for operation.
b. Insulation, and leak and pressure testing of water piping systems.
c. Air-duct systems, and air devices.
d. Mechanical system control-air tubing.
e. Support framing for items suspended from ceiling.
f. Acoustic isolation, sound control, and audio-visual components.

3.11 CLEANING, PROTECTION, FINAL CLEAN-UP

A. Remove any residual joint compound from adjacent surfaces as soon as possible.

B. Provide final protection and maintain conditions in a manner acceptable to installer that will make sure that gypsum board assemblies are undamaged or deteriorated, and ready for finishing by other trades prior to the time of Substantial Completion.

C. Screw Pop: Repair by installing new screw approximately 1-1/2 inches away from projecting screw and re-set projecting screw.
1. Where face is fractured, install new fastener approximately 1-1/2 inches away from projecting screw and remove projecting screw.
2. Fill damaged surface with joint compound and finish flush and to match adjacent surfaces.

D. Clean, repair, touch-up, replace, or make good the restoration of any work of other trades which have been soiled, or damaged by the work of this section.

E. Do not permit debris to accumulate. Remove debris from the site at the end of each day's work and legally dispose of debris.

END OF SECTION

SECTION 09 51 00

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.2 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2013a.

B. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014.

C. CHPS (HPPD) - High Performance Products Database; Current Edition at www.chps.net/.

D. UL (GGG) - GREENGUARD Gold Certified Products; current listings at http://http://productguide.ulenvironment.com/QuickSearch.aspx.

1.3 SUBMITTALS

A. Product Data: Provide data on suspension system components.

B. Samples: Submit two samples 12 by 12 inch in size illustrating material and finish of acoustical units per each type.

C. Provide required statements of special inspections.

D. Delegated-Design Submittal: For acoustical ceilings indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Fire Test Response Characteristics: Provide acoustical board ceilings that comply with the following requirements:

1. Fire response tests are performed by a qualified testing and inspecting agency. Qualified testing and inspecting agencies include UL, WH or another agency that is acceptable to authorities having jurisdiction and that performs testing and follow-up services.
2. Surface burning characteristics of acoustical boards comply with ASTM E 1264 for Class A materials as determined by testing identical products per ASTM E84.
3. Acoustical bard ceilings indicated are identical in materials and construction to those tested for fire resistance per ASTM E119.
4. Fire resistance rated acoustical bard ceilings are indicated by design designations listed in the UL “Fire Resistance Directory,” in the WH “Certification Listings,” or in the listing of another qualified testing and inspecting agency.
5. Products are identified with appropriate markings of applicable testing and inspecting agency.

D. Single-Source Responsibility for Ceiling Board: Obtain each type of acoustical ceiling board from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying the work.

E. Single-Source Responsibility for Suspension System: Obtain each type of concealed suspension system form a single source with resources to provide products of consistent quality in appearance and physical properties without delaying the work.

F. Conduct a Pre-Installation Conference at project site to comply with requirements of Division 1.

1.5 EXTRA MATERIALS

A. Provide 15 percent of total acoustical unit area of each type of acoustical unit for Owner's use in maintenance of project.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated-Design: Design ceiling framing, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
   1. Delegated-Design Requirements: Contractor is responsible for the design and installation of acoustical ceilings and related framing components that comply with all Codes in effect at project location. Contractor is responsible for obtaining special permits as required by the Building Official having jurisdiction over construction at project site. Provide calculations, layouts and other information required for permitting. Coordinate required inspections and obtain all required approvals
   2. Provide engineering per ASCE 7, Chapter 13
   3. Meet requirements of IBC Standards and ICC Evaluation report ESR-1308 and ER 4071.
   4. Comply with SS-S118B, ASTM E84, flame spread rating of 0 - 25.

2.2 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.
   1. VOC Content: Certified as Low Emission by one of the following:
      a. Product listing in UL (GGG).
      b. Product listing in CHPS (HPPD).

B. Acoustical Tile Type ACT-#: Painted mineral fiber, ASTM E1264 Type III, with the following characteristics:
   1. Size: 24 by 48 inches.
   2. Thickness: 5/8 inches.
   3. Composition: Water felted.
   4. Joint: Kerfed and rabbeted.
   5. Edge: Square.
   6. Surface Color: White.
   7. Manufacturers:
      a. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design manufacturer, product, size and color of acoustical tile.

2.3 SUSPENSION SYSTEM(S)

A. Manufacturers:
   1. Same as for acoustical units.
   2. Armstrong World Industries, Inc: www.armstrong.com.
   3. USG: www.usg.com.

B. Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

C. Exposed Steel Suspension System Type A: Formed steel, commercial quality cold rolled; heavy-duty.
   1. Provide continuous kerf on exposed face of main runner to match exisyting installation.

2.4 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Perimeter Moldings: Same material and finish as grid.
   1. At Exposed Grid (WALL ANGLE): Provide L-shaped molding for mounting at same elevation as face of grid.
   2. At Concealed Grid: Provide exposed L-shaped molding.

C. Acoustical Sealant For Perimeter Moldings: Specified in Section 07 90 05.

D. Gasket For Perimeter Moldings: Closed cell rubber sponge tape.

E. Seismic Bracing: As required by local jurisdiction.

F. Molding (MOLDING): Provide molding at penetrations of (as noted but not limited to):
   1. Columns
   2. Projector Mounts

G. Provide sprinkler escutcheon (SPRINKLER ESCUTCHEON).

H. No exposed riveting. Provide all necessary fasteners and accessories, as specified and as recommended by the suspension system manufacturer with no exposed fastenings.

I. Seismic suspension systems (SEISMIC BRACING)
   1. Armstrong seismic RX suspension system (ESR -1308) BERC2 - 2 inch Beam End Retaining Clip, 0.034 inch thick, hot-dipped galvanized cold-rolled steel per ASTM A568 - used to join main beam or cross tee to wall molding.
   2. USG seismic ACM7 Seismic Clip System.

PART 3 EXECUTION

3.1 INSTALLATION - SUSPENSION SYSTEM

A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

B. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

C. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

D. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

E. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

F. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

G. Do not eccentrically load system or induce rotation of runners.

H. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.
   2. Overlap and rivet corners.

I. Install ceiling hung light fixtures at locations of ceiling suspension system unless otherwise noted. Coordinate location with Architect and Owner.

3.2 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above-ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

3.3 INSPECTIONS

A. Provide Special Inspections for the seismic bracing system as required by the ICC-ES Evaluation Report ESR-1308 (Armstrong) and ESR-1222 (USG) and provide statement of special inspection.

3.4 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 09 65 00

RESILIENT FLOORING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Resilient tile flooring.

B. Resilient base.

C. Installation accessories.

1.2 RELATED REQUIREMENTS

A. Section 09 05 61 - Common Work Results for Flooring Preparation: Independent agency testing of concrete slabs, removal of existing floor coverings, cleaning, and preparation.

1.3 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2014c.

B. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2004 (Reapproved 2014).

C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2008 (Reapproved 2012).

D. BAAQMD 8-51 - Bay Area Air Quality Management District Regulation 8, Rule 51, Adhesive and Sealant Products; www.baaqmd.gov; 2002.

E. CAL (CHPS LEM) - Low-Emitting Materials Product List; California Collaborative for High Performance Schools (CHPS); current edition at www.chps.net/.

F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

G. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute; October 2011.

H. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.4 PERFORMANCE REQUIREMENTS

A. Coefficient of Friction: For flooring surfaces, provide products with the following values as determined by testing identical products per ASTM D 2047:
1. Level Surfaces: Minimum 0.6

1.5 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

B. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.

C. Verification Samples: Submit two samples, 4 inch long illustrating color and pattern for each resilient flooring product specified.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented commercial experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented commercial experience.

1.7 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide products with the following fire-test-response characteristics as determined by testing identical products according to test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction.
   1. Critical Radiant Flux: 0.45 W/sq. cm or greater when tested according to ASTM E 648.
   2. Smoke Density: Maximum specific optical density of 450 or less when tested according to ASTM E 662.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

B. Protect roll materials from damage by storing on end.

1.9 FIELD CONDITIONS

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

1.10 EXTRA MATERIALS

A. Provide 10 lineal feet of base, of each type and color specified.

B. Provide 10 linear feet, full width of each type of sheet good flooring.

PART 2 PRODUCTS

2.1 TILE FLOORING

A. Vinyl Composition Tile (RF-#): Homogeneous, with color extending throughout thickness.
   1. Manufacturers:
      a. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design manufacturer, product, size and color of vinyl composition tile.
   2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
   4. VOC Content: Certified as Low Emission by one of the following :
      a. Product listing in the CHPS Low-Emitting Materials Product List at; www.chps.net/manual/lem_table.htm.
   5. Thickness: 0.125 inch.

2.2 RESILIENT BASE

A. Resilient Base (RB-#): ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
   1. Height: 4 inch.
   2. Thickness: 0.125 inch.
   3. Accessories: Premolded external corners and internal corners.
   4. Manufacturers:
      a. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design manufacturer, product, size and color of resilient base.

2.3 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.
    a. Cove Base Adhesives: Not more than 50 g/L.
    b. Rubber Floor Adhesives: Not more than 60 g/L.
    c. Linoleum adhesives:
        1) Forbo Linoleum's L910
        2) Forbo Hardset Polyurethane Adhesive 660 for use at the following areas (as listed but not limited to):
            (a) At floor mounted cleanouts.
            (b) At flooring transitions to rooms containing water fixtures (Restrooms, Kitchens).
            (c) Around water fountains.

C. Transition Strips (TS-#):
    1. Manufacturers:
        a. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design manufacturer, product, size and color of transition strips.

D. Filler for Coved Base: Plastic.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

C. Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).

B. Prepare floor substrates for installation of flooring in accordance with Section 09 05 61.

C. Clean substrate.

3.3 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of sub-floor conditions.

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

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Fit joints and butt seams tightly.

E. Set flooring in place, press with heavy roller to attain full adhesion.

F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

I. Contractor shall provide Testing information to Floor covering installer

J. Install concrete surface treatment where required per manufacturer's written recommendations

3.4 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

3.5 INSTALLATION - RESILIENT BASE

A. Comply with manufacturer's written instructions for installing resilient base.

B. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

C. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

D. Install base on solid backing. Bond tightly to wall and floor surfaces.

E. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

F. Scribe and fit to door frames and other interruptions.

G. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

H. Do not stretch resilient base during installation.

3.6 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of carpet and resilient floor covering that would otherwise be exposed.

3.7 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.8 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

B. Cover resilient products until Substantial Completion.

END OF SECTION

SECTION 09 68 13

TILE CARPETING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Carpet tile, adhesive patch adhered.

1.2 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

B. Shop Drawings: Indicate direction of carpet pile and pattern, location of edge moldings edge bindings and the following:
   1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet.
   2. Existing flooring materials to be removed.
   3. Existing flooring materials to remain.
   4. Carpet type, color, and dye lot.
   5. Seam locations, types, and methods.
   6. Type of subfloor.
   7. Type of installation.
   8. Pattern type, repeat size, location, direction, and starting point.
   9. Pile direction.
   10. Type, color, and location of edge, transition, and other accessory strips.
   11. Transition details to other flooring materials.

C. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented commercial experience.

B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented commercial experience and approved by carpet tile manufacturer.

1.4 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.1 MATERIALS

A. Tile Carpeting, Type CPT-#: Tufted, manufactured in one color dye lot.
   1. Manufacturers:
      a. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design manufacturer, product, size and color of carpet tile.

2.2 ACCESSORIES

A. Adhesive Patch:
   1. Products:
      a. Shaw; Product Lokdot
      b. Interface; Product Tac Tiles

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive carpet tile.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.

3.2 INSTALLATION

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install carpet tile in accordance with manufacturer's instructions.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.

F. Trim carpet tile neatly at walls and around interruptions.

G. Complete installation of edge strips, concealing exposed edges.

3.3 PROTECTION

A. Protect installed carpet to comply with CRI 104, Section 16, "Protection of Indoor Installations."

3.4 CLEANING

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.

B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09 84 00

ACOUSTICAL PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fabric-covered fiberglass core panels and mounting accessories.

1.2 REFERENCE STANDARDS

A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2009a.

B. ASTM E795 - Standard Practices for Mounting Test Specimens During Sound Absorption Tests; 2005 (Reapproved 2012).

1.3 SUBMITTALS

A. Product Data: Manufacturer's printed data sheets for products specified.

B. Shop Drawings: Fabrication and installation details, panel layout, and fabric orientation.

C. Selection Samples: Manufacturer's color charts for fabric covering, indicating full range of fabrics, colors, and patterns available .

D. Verification Samples: Fabricated samples of each type of panel specified; 12 x 12 in, showing construction, edge details, and fabric covering.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company with not less than five years of commercial experience in manufacturing acoustical products similar to those specified.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect acoustical panels from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until panels are needed for installation.

B. Store panels flat, in dry, well-ventilated space; do not stand panels on end.

C. Protect panel edges from damage.

1.6 MOCK-UP

A. Construct mock-up of acoustical panels at location indicated by Architect.
   1. Approved mock-up may remain as part of the Work.

PART 2 PRODUCTS

2.1 MANUFACTURERS:

A. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design manufacturer, product, size, type of fabric, and color of acoustical panels.

B. Other manufacturers:
   1. Conwed Designscape; Product Respond IR Series; www.conweddesignscape.com (Basis of Design).
   2. Wall Technology; www.walltechnology.com
   3. LBI BOYD; www.lbiboyd.com

2.2 ACOUSTICAL WALL PANELS (AWP-#)

A. Panels: Prefinished, factory assembled fabric-covered panels.

B. Fiberglass Core Panels:
   1. Density: 7-10 lb/cu ft.
   2. Noise Reduction Coefficient (NRC): 0.70-0.80 when tested in accordance with ASTM C423 for Type A mounting, per ASTM E795.
   3. Panel Width: As detailed.

4. Panel Height: As detailed.
5. Panel Thickness: 1 inch.
6. Corners: Square.
7. Mounting: Metal "Z" Clips.

C. Fabric Covering: Seamless fabric facing material, for stretched covering of core material.
1. Fabric: Owner-supplied.
2. Color: As selected by Architect from manufacturer's full range.

2.3 FABRICATION

A. General: Fabricate panels to sizes and configurations indicated, with fabric facing installed without sagging, wrinkles, blisters, or visible seams.
1. For panels suspended from ceiling, provide fabric covering both sides, with seams only at panel edges.

B. Tolerances: Fabricate to finished tolerance of plus or minus 1/16 in for thickness, overall length and width, and squareness from corner to corner.

2.4 ACCESSORIES

A. Back-Mounting Accessories: Manufacturer's standard accessories for concealed support, designed to allow panel removal, and as follows:
1. Z-clip hanger and magnet system with magnets recessed into panel frame and designed to engage steel mounting plates secured to substrate with screws.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates for conditions detrimental to installation of acoustical panels. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install acoustical panels in locations indicated, following installation recommendations of panel manufacturer. Align panels accurately, with edges plumb and top edges level. Scribe to fit accurately at adjoining work and penetrations.

B. Install panels to construction tolerances of plus or minus 1/16 in for the following:
1. Plumb and level.
2. Flatness.

3.3 CLEANING

A. Clean fabric facing upon completion of installation from dust and other foreign materials, following manufacturer's instructions.

B. Remove surplus materials, trimmed portions of panels, and debris resulting from installation.

3.4 PROTECTION

A. Provide protection of installed acoustical panels until completion of the work.

B. Replace panels that cannot be cleaned and repaired to satisfaction of the Architect.

END OF SECTION

SECTION 09 91 23

INTERIOR PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Floors, unless specifically indicated.
   6. Glass.
   7. Concealed pipes, ducts, and conduits.

1.2 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this section.

B. MPI Gloss Level 1 - FLAT: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 2 - VELVET: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 3 - EGGSHELL: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 4 - SATIN: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

F. MPI Gloss Level 5 - SEMI GLOSS: 35 to 70 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 6 - GLOSS: 70 to 85 units at 60 degrees, according to ASTM D 523.

H. MPI Gloss Level 7 - HIGH GLOSS: More than 85 units at 60 degrees, according to ASTM D 523.

1.3 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2014.

C. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.

1.4 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:

1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
2. MPI product number (e.g. MPI #47).
3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
1. Where sheen is specified, submit samples in only that sheen.
2. Allow 30 days for approval process, after receipt of complete samples by Architect.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum five years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience and approved by manufacturer.

1.6 MOCK-UP

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
b. Other Items: Architect will designate items or areas required.
2. Final approval of color selections will be based on mockups.
a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Provide door and frame assembly illustrating paint color, texture, and finish.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.8 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Paints:

1. Benjamin Moore & Co: www.benjaminmoore.com.
2. PPG Paints: www.ppgpaints.com/sle.
3. Miller Paint; www.millerpaint.com
4. Or approved equal.

2.2 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
   1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
   2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   3. Supply each paint material in quantity required to complete entire project's work from a single production run.
   4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
      b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
         1) Opaque, Flat: 50 g/L, maximum.
         2) Opaque, Nonflat: 150 g/L, maximum.
         3) Opaque, High Gloss: 250 g/L, maximum.
         4) Varnishes: 350 g/L, maximum.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

2.3 PAINT SYSTEMS - INTERIOR

A. Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
   1. Medium duty applications include doors and door frames.
   2. Two top coats and one coat primer.
   3. Top Coat(s): Interior Alkyd, Water Based; MPI #167, 168, or 169.
   4. Top Coat Sheen:
      a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.

B. Medium Duty Vertical and Overhead: Including gypsum board.
   1. Two top coats and one coat primer.
   2. Top Coat(s): Interior Epoxy-Modified Latex; MPI #115 or 215.
   3. Top Coat Sheen:
      a. Eggshell: MPI gloss level 3; use this sheen at overhead surfaces.
      b. Satin: MPI gloss level 4; use this sheen at vertical surfaces.

C. Transparent Finish on Wood.
   1. 2 top coats over sanding sealer, no stain.
   2. Top Coat Product(s):
      a. Mule - Falcon S.A.; Product Rubiomonocoat OIL PUS 2C (Basis of Design).

1) Color: See Section 09 00 00 - Interior Finish Material Schedule for color.

2.4 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
   1. Alkali Resistant Water Based Primer; MPI #3.

2.5 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.

3.2 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

F. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

G. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

H. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

D. Sand wood and metal surfaces lightly between coats to achieve required finish.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.4 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

3.6 SCHEDULE - LOCATIONS (AS NOTED BUT NOT LIMITED TO):

A. Interior surfaces to receive coatings:
   1. Ferrous Metals:
      a. Metal doors and frames
   2. Gypsum Board:
      a. Exposed gypsum board
   3. Wood
      a. New and existing wood surfaces.

3.7 COLOR SCHEDULE

A. See Section 09 00 00 - Interior Finish Materials Schedule for Basis of Design manufacturer, product, and color of paint.

END OF SECTION

SECTION 10 26 01

WALL AND CORNER GUARDS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Corner guards.

1.2 REFERENCE STANDARDS

A. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.

B. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2003.

1.3 SUBMITTALS

A. Product Data: Indicate physical dimensions, features, anchorage details, and rough-in measurements.

B. Samples: Submit two sections of corner guard, 24 inch long, illustrating component design, configuration, color and finish.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Corner Guards - Surface Mounted:
   1. Material: Type 304 stainless steel, No. 4 finish, 16 gage, 0.06 inch thick.
   2. Performance: Resist lateral impact force of 100 lbs at any point without damage or permanent set.
   3. Width of Wings: 2 inches.
   4. Corner: Square.
   5. Color: As selected from manufacturer's standard colors.
   6. Length: 48 inches.
   7. Products:
      a. Schluter; Product Eck-K
      b. Or approved equal.

B. Corner Guards - Surface Mounted: Formed ASTM A 666 one-piece unit without splices, installed with adhesive.
   1. Performance: Resist lateral impact force of 100 lbs at any point without damage or permanent set.
   2. Length: 48 inches

C. Mounting Brackets and Attachment Hardware: Appropriate to component and substrate.

D. Adhesive:
   1. Product:
      a. Chemlink; Product M-1 Structural Adhesive; www.chemlink.com

2.2 FABRICATION

A. Fabricate components with tight joints, corners and seams.

B. Pre-drill holes for attachment.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.

3.2 INSTALLATION

A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to wall framing members only.

B. Position corner guard 12 inches above finished floor to 60 inches high.

C. Position corner guard 6 inches above finished floor to 48 inches high.

3.3 TOLERANCES

A. Maximum Variation From Required Height: 1/4 inch.

B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch.

END OF SECTION

SECTION 21 05 00

GENERAL FIRE PROTECTION PROVISIONS

PART 1 - GENERAL

1.1 CONTRACT DOCUMENTS

A. General fire protection provisions apply to all work performed in Division 21.

B. The Contract Documents are complementary. What is required by any one, as affects this Division, shall be as binding as if repeated herein.

C. Separation of this Division from other Contract Documents shall not be construed as segregation of the Work.

D. Particular attention is called to Instructions to Bidders, General Conditions, Drawings and Specifications, and modifications incorporated in the documents before execution of the Agreement.

E. Location of equipment on Drawings is approximate. Plan exact location with respect to site measurements and work of other trades prior to starting work. If measurements differ slightly, modify work. If measurements differ substantially, notify Architect/Engineer and Owner's Authorized Representative prior to fabrication.

F. Make minor changes in equipment connections and equipment locations as directed or required before rough-in without extra cost.

1.2 DEFINITIONS

A. Authority Having Jurisdiction (AHJ): The governmental agency or sub-agency which regulates the construction process.

B. Owner's Authorized Representative (OAR): Owner's representative with authority to act on Owner's behalf.

1.3 COORDINATION

A. Check drawings of other trades to avert possible installation conflicts. Should major changes from original drawings be necessary to resolve such conflicts, notify Architect/Engineer and secure written approval and agreement on necessary adjustments before start of work.

B. Architectural drawings govern all other drawings. Consult in detail the door swings, counter heights and similar items affecting work before rough-in.

C. Coordinate identification systems with other trades. All mechanical systems shall use identical piping, valve, and equipment identification and regulatory signage.

1.4 SUBMITTALS AND SHOP DRAWINGS

A. See Section 01 33 00 – SUBMITTAL PROCEDURES

B. Action Submittal Content

1. Action submittal information not expressly required by the specifications will not be reviewed.
2. Action submittal information shall be provided in sufficient detail to establish conformance with specified requirements. Where submitted literature includes multiple models, features, or options, the specific models, features, or options proposed shall be clearly indicated. Where a brief inspection shows that product data is not complete, the submittal will be rejected without review.
3. Action submittal data shall be clear, concise, legible, and relevant. Where data is not properly organized and contains significant information that is not relevant, the submittal will be rejected without review.
4. Action submittal requirements will be listed in individual specification sections. The following definitions apply.

a. Materials List: Provide tabular list of materials including specification reference, specification product name, manufacturer, model/part number, and size and/or quantity where appropriate. Do not include supplemental data, except where specifically requested.
b. Catalog data: Manufacturer's standard product cut sheet.
c. Product Data: Detailed data including dimensions, weight, materials of construction, connections, and all other information needed to confirm that the product conforms to all requirements listed in the individual specification section.
d. Performance Data: Capacity, input, output, flow, etc. as required to confirm that the product meets the performance requirements scheduled in the Specifications or on the Drawings.
e. Wiring Diagrams: Power and control wiring diagrams.
f. Shop Drawings: Construction drawings of items manufactured specifically for this project including dimensions, construction details, weights, and additional information to identify the physical features of the system or piece of equipment.
g. Installation Instructions
h. Special Requirements Listed: Additional requirements indicated in individual specification sections.

C. Delegated Design
1. Delegated work will include:
a. Section 21 13 13 "Wet-Pipe Sprinkler Systems"
2. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
a. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.
3. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file, of certification letter signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
a. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.5 QUALITY ASSURANCE

A. All materials and equipment provided hereunder shall be installed and started in complete conformance with the manufacturer's recommendations.

B. Asbestos products or equipment or materials containing asbestos shall not be used.

1.6 DESIGN REQUIREMENTS

A. Materials and equipment provided hereunder shall be rated for the service conditions of the system to which they are connected including but not limited to temperature, pressure, and humidity.

1.7 CODES AND STANDARDS

A. Applicable codes and standards shall determine minimum requirements for materials, methods, and labor practices not otherwise stated herein.

B. Work shall comply with the Americans with Disabilities Act (ADA).

1.8 TEMPORARY SERVICES

A. Provide in accordance with SECTION 01 50 00 "Temporary Facilities and Controls" as required for completion of work.

B. Maintain existing systems operational. Owner will be responsible to operate and maintain existing equipment during the course of the project. However, any damage to existing equipment resulting directly from work under this Contract shall be repaired by the Contractor at no expense to Owner.

1.9 OPERATIONS AND MAINTENANCE MANUALS

A. Bind manuals in three-ring, high quality vinyl covered binders, clearly indexed and provided with thumb tabs for each item or product. Include a directory of all subcontractors and maintenance contractors with names, addresses, and telephone numbers, indicating the area of responsibility for each. Index tabs shall match submittal schedule and include any additional information required for operations and maintenance, whether in submitted schedule or not.

B. Maintenance instructions shall indicate routine-type work with step-by-step instructions that should be performed to ensure long life and proper operations. Recommended frequency of performance shall also be included.

C. Provide copy of approved submittal for each product included in manual

D. Provide printed copy and electronic configuration files for all packaged equipment control systems furnished with equipment.

E. Mark the model actually provided where the literature covers more than one model. Include four copies of all submittal data corrected to "as-built" conditions within the manual.

F. Provide a composite summary table indicating each item of equipment listed in the operations and maintenance manual and its required maintenance and time period. This summary table shall be the first section in the O&M manual.

G. Manual Content: Manuals shall contain complete information for each item of mechanical electrical or other operating equipment. Include as applicable:
   1. Manufacturer's instructions for installation, startup, operation, inspection, and maintenance
   2. Lubrication schedules
   3. Performance capacity
   4. Catalog data sheets
   5. Parts list
   6. Maintenance schedules

1.10 RECORD DRAWINGS

A. Provide record "as-built" drawings in accordance with Division 1 requirements. Show all deviations from contract drawings and location of underground lines by accurate dimensions from building lines. Show depth of all stub outs and underground lines. Dimension all concealed piping from column grids or building lines. Transfer all information to one hard copy of drawings at completion of project. Alternately, provide electronically using .pdf markup of contract drawings.

1.11 DEMONSTRATION

A. General: After installation is complete, demonstrate to Authority Having Jurisdiction and Owner’s Authorized Representative’s satisfaction as being complete and operational and entirely in conformance with Contract Documents.

B. Arrange for demonstration with Owner and Authority Having Jurisdiction at least one week in advance of demonstration.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MATERIALS

A. All materials employed in permanent construction shall be new, full weight, in first class condition, and suitable for space provided. All similar materials shall be of one manufacturer.

B. Equipment used as the basis of design is scheduled on drawings or designated in product specifications. If Contractor chooses to use equipment that is not the basis of design, Contrac-

tor is responsible for all re-design and construction costs associated with variations in arrangement, dimension, or capacity. Such work may include, but is not limited to, changes to facility structure or dimensions and revisions to associated mechanical and electrical systems needed to provide equal system performance and maintainability.

2.2 FIRESTOPPING

A. Acceptable Manufacturers: 3M, Hilti, Tremco, Nelson Firestop Products.

B. Provide firestopping for the following:
   1. Penetrations through fire resistance rated floors, walls and partitions including openings containing pipes, ducts and other penetrating items.
   2. Penetrations through non-fire resistance rated floors where the vertical service riser penetrates three or more floors.

C. Firestop system shall be UL Classified for the application and correspond to those indicated by reference to designation listed by UL Fire Resistance Directory.

D. Material shall be tested in accordance to UL-1479, ASTM E-814 for the specific fire-rated construction conditions confirming to construction assembly type, penetration item type, annular space requirements, and fire-rating involved.

2.3 IDENTIFICATION

A. Provide equipment identification and signage in accordance with NFPA 13.

PART 3 - EXECUTION

3.1 ARRANGEMENT AND INSTALLATION OF EQUIPMENT AND PIPING

A. Coordinate location of piping, sleeves, inserts, hangers and equipment. Locate piping, sleeves, inserts, hangers and equipment clear of windows, doors, openings, lights, electrical outlets, and other services and utilities.

B. Equipment and Piping Support: Coordinate structural systems necessary for pipe and equipment support with pipe and equipment locations to permit proper installation.

C. Minor Piping: Small diameter pipe runs from drips and drains and similar minor services are generally not shown but must be provided. Contractor is responsible to provide all such minor piping where needed.

D. Work in Existing Building: Cut required openings through existing masonry and reinforced concrete using diamond core drills. Use of pneumatic hammer type drills, impact type electric drills, and hand or manual hammer type drills, will be permitted only with approval of the Owner’s Authorized Representative. Locate openings that will least affect structural slabs, columns, ribs or beams. Refer to the Architect/Engineer for determination of proper design for openings through structural sections and obtain layout approval prior to cutting or drilling into structure. After Architect/Engineer's approval, carefully cut opening through construction no larger than absolutely necessary for the required installation.

3.2 FIRESTOPPING

A. Do not cover firestop installations until the examined by the Authority Having Jurisdiction, if required.

B. Install firestopping in accordance with manufacturer’s recommendations and conditions of product UL listing.

3.3 CLEANING SYSTEMS

A. General: After all equipment and piping is installed, system shall be thoroughly cleaned. Remove all stickers and tags and clean all piping systems prior to painting.

END OF SECTION

SECTION 21 13 13

WET-PIPE SPRINKLER SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes pipes, fittings, specialty valves, monitoring and control devices, and other accessories for a complete wet pipe sprinkler system providing full coverage for areas shown on drawings.

1.2 DEFINITIONS

A. Standard-Pressure Sprinkler Piping: Wet-pipe sprinkler system piping designed to operate at working pressure of 175-psig maximum.

1.3 ACTION SUBMITTALS

A. General
   1. Pipe and fittings: Materials List
   2. Sprinkler Piping Specialties, Sprinklers: Provide catalog data. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Delegated Design Submittals:
   1. Delegated design shall be performed and documented in accordance with NFPA 13 by persons qualified in accordance with Authority Having Jurisdiction.
   2. Provide detailed scaled construction drawings showing fire protection piping, heads, valves, and accessories including pipe sizes, locations, elevations, slope of horizontal runs, wall and floor penetrations and connections. Include attachment details.
      a. Submit preliminary drawings showing exposed piping and sprinkler layout to Architect for approval.
      b. Upon approval by Architect, submit drawings to Authority Having Jurisdiction.
      c. Upon approval by Authority Having Jurisdiction, submit final drawings with approval stamp to Architect.
   3. Provide hydraulic calculations.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by authorities having jurisdiction, including hydraulic calculations if applicable.

C. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping."

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For wet-pipe sprinkler systems and specialties to include in emergency, operation, and maintenance manuals.

1.6 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.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Installer’s responsibilities include designing, fabricating, and installing sprinkler systems.

B. Contractor shall have five years of experience in design and installation of equipment and systems similar to that specified hereunder.

C. The system designer shall be responsible for verifying site conditions, design requirements, and work being performed by other trades as related to the suppression system design. Design shall accommodate work being performed by other trades.

D. Welding Qualifications: Qualify procedures and operators according to 2010 ASME Boiler and Pressure Vessel Code.

1.8 FIELD CONDITIONS

A. Interruption of Existing Sprinkler Service: Do not interrupt sprinkler service to facilities occupied by Owner or others unless permitted under the following conditions:
   1. Notify Owner's Construction Manage no fewer than five days in advance of proposed interruption of sprinkler service.
   2. Do not proceed with interruption of sprinkler service without Owner's Construction Manager's written permission.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Sprinkler system sizing, arrangement, equipment, specialties, accessories, installation, and testing shall comply with NFPA 13.

B. Standard-Pressure Piping System Component: Listed for 175-psig minimum working pressure.

C. Design Requirements:
   1. Contractor shall obtain water service test data including static pressure and residual pressure/water flow available at the project site.
   2. Sprinkler system design shall be approved by authorities having jurisdiction.
   3. Sprinkler Occupancy Hazard Classifications:
      1) General Storage Areas: Ordinary Hazard, Group 1.
      2) Office and Public Areas: Light Hazard.
   4. Provide minimum density as required by NFPA 13.
   5. Seismic Performance: Sprinkler piping shall withstand the effects of earthquake motions according to NFPA 13 and ASCE/SEI 7.

2.2 STEEL PIPE AND FITTINGS

A. Standard-Weight, Schedule 40 Black-Steel Pipe: ASTM A 53/A 53M, Type E, Grade B. Pipe ends may be factory or field formed to match joining method.

B. Schedule 10, Black-Steel Pipe: ASTM A 135/A 135M or ASTM A 795/A 795M, Schedule 10 in NPS 2 and smaller.

C. Black-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M, standard-weight, seamless steel pipe with threaded ends.

D. Uncoated-Steel Couplings: ASTM A 865/A 865M, threaded.

E. Uncoated, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.

F. Malleable- or Ductile-Iron Unions: UL 860.

G. Cast-Iron Flanges: ASME 16.1, Class 125.

H. Steel Flanges and Flanged Fittings: ASME B16.5, Class 150.
   1. Metal, Pipe-Flange Bolts and Nuts: Carbon steel unless otherwise indicated.

I. Grooved-Joint, Steel-Pipe Appurtenances:
   1. Pressure Rating: 175-psig minimum.
   2. Painted Grooved-End Fittings for Steel Piping: ASTM A 47/A 47M, malleable-iron casting or ASTM A 536, ductile-iron casting, with dimensions matching steel pipe.
   3. Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213 rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, EPDM-rubber gasket, and bolts and nuts.

2.3 SPRINKLER PIPING SPECIALTIES

A. Branch Outlet Fittings:
   1. Standard: UL 213.
   2. Pressure Rating: 175-psig minimum.
   3. Body Material: Ductile-iron housing with EPDM seals and bolts and nuts.
   4. Type: Mechanical-tee and -cross fittings.
   5. Configurations: Snap-on and strapless, ductile-iron housing with branch outlets.
   6. Size: Of dimension to fit onto sprinkler main and with outlet connections as required to match connected branch piping.
   7. Branch Outlets: Grooved, plain-end pipe, or threaded.

B. Adjustable Drop Nipples:
   1. Standard: UL 1474.
   2. Pressure Rating: 250-psig minimum.
   3. Body Material: Steel pipe with EPDM-rubber O-ring seals.
   4. Size: Same as connected piping.
   5. Length: Adjustable.
   6. Inlet and Outlet: Threaded.

C. Flexible Sprinkler Hose Fittings:
   1. Standard: UL 1474.
   2. Type: Flexible hose for connection to sprinkler, and with bracket for connection to ceiling grid.
   3. Pressure Rating: 175-psig minimum.
   4. Size: Same as connected piping, for sprinkler.

2.4 SPRINKLERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Reliable Automatic Sprinkler Co., Inc. (The).
   2. Tyco Fire Products LP.
   3. Victaulic Company.

B. Listed in UL's "Fire Protection Equipment Directory" or FM Global's "Approval Guide."

C. Pressure Rating for Automatic Sprinklers: 175-psig minimum.

D. Automatic Sprinklers with Heat-Responsive Element:
   1. Early-Suppression, Fast-Response Applications: UL 1767.
   2. Nonresidential Applications: UL 199.
   3. Characteristics: Nominal 1/2-inch orifice with Discharge Coefficient K of 5.6, and for "Ordinary" temperature classification rating unless otherwise indicated or required by application.

E. Sprinkler Finishes: Chrome plated.

F. Sprinkler Escutcheons: Materials, types, and finishes for the following sprinkler mounting applications. Escutcheons for concealed, flush, and recessed-type sprinklers are specified with sprinklers.
   1. Ceiling Mounting: Chrome-plated steel, one piece, flat or chrome-plated steel, two piece, with 1-inch vertical adjustment.
   2. Sidewall Mounting: Chrome-plated steel, one piece, flat.

G. Sprinkler Guards:
   1. Standard: UL 199.
   2. Type: Wire cage with fastening device for attaching to sprinkler.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

A. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated on approved working plans.
   1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
   2. Coordinate layout and installation of sprinklers with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.

B. Piping Standard: Comply with NFPA 13 requirements for installation of sprinkler piping.

C. Install seismic restraints on piping. Comply with NFPA 13 requirements for seismic-restraint device materials and installation.

D. Use listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.

E. Install unions adjacent to each valve in pipes NPS 2 and smaller.

F. Install sprinkler piping with drains for complete system drainage.

G. Install alarm devices in piping systems.

H. Install hangers and supports and seismic restraint for sprinkler system piping according to NFPA 13.

I. Fill sprinkler system piping with water.

J. Install sleeves for piping penetrations of walls, ceilings, and floors.

K. Retain first paragraph below for piping that penetrates an exterior concrete wall or concrete slab.

L. Install sleeve seals for piping penetrations of exterior concrete walls and slabs.

M. Install escutcheons for piping penetrations of walls, ceilings, and floors.

3.2 JOINT CONSTRUCTION

A. Install couplings, flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.

B. Install unions adjacent to each valve in pipes NPS 2 and smaller.

C. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.

D. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

E. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.

F. Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.

G. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
   1. Apply appropriate tape or thread compound to external pipe threads.
   2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.

H. Steel-Piping, Cut-Grooved Joints: Cut square-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe joints.

I. Steel-Piping, Roll-Grooved Joints: Roll rounded-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe grooved joints.

J. Dissimilar-Material Piping Joints: Make joints using adapters compatible with materials of both piping systems.

3.3 SPRINKLER INSTALLATION

A. Install sprinklers in suspended ceilings in center of narrow dimension of acoustical ceiling panels.

B. Install sprinklers into flexible, sprinkler hose fittings, and install hose into bracket on ceiling grid.

3.4 IDENTIFICATION

A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.

B. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26.

3.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
1. Leak Test: After installation, charge systems and test for leaks. Repair leaks and retest until no leaks exist.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
3. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.

B. Prepare test and inspection reports.

3.6 CLEANING

A. Clean dirt and debris from sprinklers.

B. Only sprinklers with their original factory finish are acceptable. Remove and replace any sprinklers that are painted or have any other finish than their original factory finish.

3.7 PIPING SCHEDULE

A. Standard-pressure, wet-pipe sprinkler system, NPS 2 and smaller, shall be the following:
1. Standard-weight, with threaded ends; uncoated, gray-iron threaded fittings; and threaded joints.

B. Standard-pressure, wet-pipe sprinkler system, NPS 2-1/2 and Larger shall be one of the following:
1. Standard-weight, black-steel pipe with cut or roll-grooved ends; uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.
2. Schedule 10, black-steel pipe with roll-grooved ends: uncoated, grooved-end fittings for steel piping; grooved-end-pipe couplings for steel piping; and grooved joints.

3.8 SPRINKLER SCHEDULE

A. Use sprinkler types in subparagraphs below for the following applications:
1. Rooms without Ceilings: Upright sprinklers.
2. Rooms with Suspended Ceilings: Recessed sprinklers.
3. Wall Mounting: Sidewall sprinklers.

B. Provide sprinkler types in subparagraphs below with finishes indicated.
1. Recessed Sprinklers: Bright chrome, with bright chrome escutcheon.
2. Upright and Sidewall Sprinklers: Chrome plated in finished spaces exposed to view; rough bronze in unfinished spaces not exposed to view.

END OF SECTION

SECTION 22 05 00

GENERAL PLUMBING PROVISIONS

PART 1 – GENERAL

1.1 SUMMARY OF WORK

A. Contractor to provide complete and fully operational plumbing and HVAC systems as specified herein.

1.2 CODES AND STANDARDS

A. Building Code: All work must conform to the latest edition of Oregon Building Code, and are collectively referred to as the “Code”:
   1. Oregon Structural Specialty Code
   2. Oregon Plumbing Specialty Code

B. Standards: All work must conform to the current edition of OSU Construction Standards and applicable Appendixes.

1.3 GENERAL REQUIREMENTS

A. All electrical equipment shall be listed as approved for its application by the Underwriters Laboratory or other testing agency approved by the State of Oregon Electrical Board. Approval indicates agency meets testing standard requirements for electrical safety required by Oregon Revised Statutes 479.510 through 479.855 and Oregon Administrative Rules.

B. Operations and Maintenance Manuals: Provide operations and maintenance information for all materials. Equipment and systems provided hereunder. Manuals shall contain full information for each item of mechanical, electrical, or other operating equipment including:
   1. Manufacturer's instructions for installation, startup, operation, inspection, and maintenance
   2. Lubrication schedules
   3. Performance capacity
   4. Catalog data sheets
   5. Parts list
   6. Maintenance schedules

C. Instruct Owner in proper operation and maintenance of equipment and systems. Instruction shall generally include topics listed in manufacturer’s operations and maintenance manual. Operator instructions shall cover all aspects of manual, automatic, and safety controls. Contractor shall also instruct the Owner in the general configuration of systems and location of equipment and components. Prepare Energy Code forms as required for equipment and systems.

D. Provide record “as-built” drawings in AutoCAD format for all work performed under this Division. Show all deviations from original construction drawings and locations concealed wiring by accurate dimensions from building lines.

PART 2 – PRODUCTS

2.1 NOT USED

PART 3 – EXECUTION

3.1 SUMMARY OF WORK

A. Remove existing plumbing piping and fixtures as indicated on Drawings. Provide additional construction documents, as required for Authority Having Jurisdiction approval for Plumbing Permit. Contractor shall provide required documentation and all work necessary.

B. Coordination with other trades and with field conditions will be required. As a Design/Build Subcontractor to the General Contractor, prepare plumbing system layout Drawings suitable for obtaining a building permit from City of Corvallis showing locations and types of fixtures, pipe sizes, and valves, and other related items.

3.2 CODES AND STANDARDS

A. Standards
   1. American Society of Plumbing Engineers Standards

3.3 GENERAL DESIGN CRITERIA

A. Lead-Free Requirements: Plumbing faucets, flush valves, and other fittings, specialties, and appurtenances in direct contact with potable water shall comply with The Reduction of Lead in Drinking Water Act as it amends Section 1417 of the Safe Drinking Water Act (42 USC s. 300G-6).

B. Plumbing Piping
   1. The sanitary drainage system will be of conventional design with atmospheric vents extended above the finished roof. Adequate clean-outs will be provided to permit necessary maintenance. Sanitary drainage systems shall be constructed of CISPI standard 301 service weight hubless cast iron soil pipe with ASTM C564 neoprene sealing sleeves and SISPI standard 310 stainless steel corrugated shield and clamping bands. Under sink trap piping shall use threaded slip connections.
   2. Domestic hot and cold-water piping shall be ASTM B-88 hard drawn copper, Type L above grade. Piping shall be sized not to exceed 4 feet per second water velocity. Allowable pressure drop shall be based on site water pressure at the site and a minimum 30 psi at each fixture.
   3. Domestic hot water pipe insulation k-factor and thickness shall meet code, domestic cold-water pipe insulation shall be ½-inch thick. Insulation shall be formaldehyde-free fiberglass with all-service jacket. Embedding piping in wall insulation is not acceptable, piping must be individually insulated.
   4. Exposed piping in finished spaces shall be chrome-plated. Penetrations through walls into finished spaces shall be covered by chrome-plated escutcheons.

3.4 SUBMITTALS

A. Special Requirements: Submit product data, technical and performance data, shop drawings, installation details and instructions, calculations, and reports detailing system design as follows:
   1. Product List: Summary table of all equipment, accessories, and fixtures including manufacturer and model number for each.
   2. Product Data: Submit manufacturer's catalog data for materials, devices, and equipment furnished including physical dimensions of equipment.
   3. Floor Plans: Full size plans showing equipment, fixtures, and piping. Show maintenance service access requirements. Drawings shall be prepared in electronic format with AutoCAD using original construction document files.

3.5 QUALITY ASSURANCE

A. System must be installed by a manufacturer's certified installation contractor.

B. All wiring shall be in accordance with the National Electric Code (NEC).

C. Equipment shall be tested by a Nationally Recognized Testing Laboratory (NRTL), in accordance with ANSI/UL 1995/CAN/CSA-C22.2 No. 236-05 (R2009) – Heating and Cooling Equipment and bear the Listed Mark.

3.6 GENERAL REQUIREMENTS

A. Equipment shall be seismically restrained in accordance with code.

3.7 INSULATION

A. Insulate piping in accordance with Code.

END OF SECTION

SECTION 23 05 00

GENERAL MECHANICAL PROVISIONS

PART 1 – GENERAL

1.1 SUMMARY OF WORK

A. Contractor to provide complete and fully operational HVAC systems as specified herein and shown on Drawings.

1.2 CODES AND STANDARDS

A. Building Code: All work must conform to the latest edition of Oregon Building Code, and are collectively referred to as the “Code”:
   1. Oregon Structural Specialty Code
   2. Oregon Mechanical Specialty Code
   3. Oregon Energy Efficiency Specialty Code
   4. ASHRAE 15: Safety Code for Mechanical Refrigeration
   5. NFPA 90A – Installation of Air Conditioning and Ventilating Systems
   6. Occupational Safety and Health Regulations for Construction, 29 CFR, Parts 1926 and 1910

B. Standards: All work must conform to the current edition of OSU Construction Standards and applicable Appendixes.

1.3 GENERAL REQUIREMENTS

A. All electrical equipment shall be listed as approved for its application by the Underwriters Laboratory or other testing agency approved by the State of Oregon Electrical Board. Approval indicates agency meets testing standard requirements for electrical safety required by Oregon Revised Statutes 479.510 through 479.855 and Oregon Administrative Rules.

B. Operations and Maintenance Manuals: Provide operations and maintenance information for all materials. Equipment and systems provided hereunder. Manuals shall contain full information for each item of mechanical, electrical, or other operating equipment including:
   1. Manufacturer's instructions for installation, startup, operation, inspection, and maintenance
   2. Lubrication schedules
   3. Performance capacity
   4. Catalog data sheets
   5. Parts list
   6. Maintenance schedules

C. Instruct Owner in proper operation and maintenance of equipment and systems. Instruction shall generally include topics listed in manufacturer’s operations and maintenance manual. Operator instructions shall cover all aspects of manual, automatic, and safety controls. Contractor shall also instruct the Owner in the general configuration of systems and location of equipment and components. Prepare Energy Code forms as required for equipment and systems.

D. Provide record “as-built” drawings in AutoCAD format for all work performed under this Division. Show all deviations from original construction drawings and locations concealed wiring by accurate dimensions from building lines.

PART 2 – PRODUCTS

2.1 DUCTWORK AND ACCESSORIES

A. Provide complete system of supply and return ductwork in accordance with Code and in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible.
   1. Ductwork constructed of G60 galvanized metal conforming to SMACNA requirements. Flexible ductwork may be used for the last five feet of diffuser runout duct. Flexible ductwork shall be routed straight with only minor offsets.

2. Ductwork pressure class:
   a. Provide 3” pressure class supply ductwork between main supply ductwork and terminal units.
   b. Provide 2” pressure class ductwork between terminal units and grilles, and return grilles and return main ductwork.
3. Air leakage from ductwork systems shall not exceed 4 cfm/100 square feet at 1-inch wg.
4. Balancing dampers shall be provided for adjustment of each inlet and outlet.
5. Supply air diffusers shall be fixed blade louvered type similar to Titus TDC or 300 RL.
6. Return air grilles shall be eggcrate grid type, similar to Titus 50F.

B. Air Terminal Units:
1. Description: Single duct, variable volume unit complete with cabinet, control valve and controls.
2. Cabinet: Double wall construction. 22-gauge galvanized steel liner with a minimum G 60 zinc coating. Mechanically assembled. Hanger brackets for supporting unit. The static pressure drop across the basic terminal unit shall not exceed 0.08 inches w.g. at an inlet velocity of 2000 f.p.m. for all unit sizes.
3. Insulation: 1/2-inch thick, 4 lb. density outer layer rated for a maximum air velocity of 3600 f.p.m. Fastened with adhesive and secondary mechanical fastener. Insulation edges on the discharge of the unit covered with metal liner.
4. Primary Air Valve: Minimum 22-gauge body. Damper blade rigidly connected to solid shaft. Damper position indicator visible from the exterior of the unit. Damper mounted in self-lubricating bearings. Valve assembly to include internal mechanical stops. Air valve leakage shall not exceed 2% of maximum inlet rated airflow at 3 inches w.g. inlet pressure.
5. Primary Airflow Sensor: Multiple sensing point differential pressure airflow sensor for all duct diameters greater than 6 inches. Sensor shall output an amplified differential pressure signal at least 2.5 times greater than a standard velocity pressure signal. Sensor shall develop a differential pressure no less than 0.03 inches w.g. at an air velocity of 450 fpm. Brass balancing taps and airflow calibration charts provided for field airflow measurements.
6. Controls: Damper actuator and damper controller furnished by the Building Automation System (BAS) manufacturer and factory installed and calibrated by the terminal unit manufacturer.
7. Capacity: As shown on schedule.

PART 3 – EXECUTION

3.1 HEATING, VENTILATING, AND AIR-CONDITIONING DESIGN/BUILD GUIDELINES

A. SUMMARY OF WORK
1. Provide a complete and operational, and fully-tested heating, ventilating and air-conditioning system consisting of the following elements:
   a. Re-use existing central VAV air handling system(s).
   b. Re-use existing air terminal units and ductwork as applicable.
   c. Provide new terminal units, ductwork and grilles/diffusers for revised zoning and air distribution.
   d. Do not provide re-heat coils for interior zone terminal units, similar to existing system.
2. Coordination with other trades and with field conditions will be required. As a Design/Build Subcontractor to the General Contractor, prepare mechanical system layout Drawings suitable for obtaining a City of Corvallis building permit, showing ventilation calculations, locations and types of equipment, duct sizes, locations of thermostats, and other related items.

B. DESIGN REQUIREMENTS
1. Contractor shall provide complete design of variable refrigerant flow system including equipment, piping, and wiring as specified hereunder.
   a. System shall provide heating, cooling, air flow, and supply air temperature performance as scheduled on Drawings.
   b. Systems shall be designed to conform to thermal zoning arrangement shown on Drawings.
2. The following ambient environmental conditions will be used as a basis of design:
   a. Location: Corvallis, Oregon
   b. Site Elevation: 230 feet above sea level
   c. OSSC Climate Zone: 4C
   d. Winter ambient design temperature: 21°F
   e. (ASHRAE Heating Dry Bulb 99.6%)
   f. Summer ambient design temperature: 92°F db, 67°F wb
   g. (ASHRAE Cooling 0.4%)
3. The following indoor environmental design conditions are to be used as a Basis of Design:

Room Type	Occ Density (Pers /1000 SF)	Lights (Max W/SF)	Plug Load (W/SF)	Htg Occ Setpt (°F)	Clg Occ Setpt (°F)	Htg Unocc Setpoint (°F)	Clg Unocc Setpoint (°F)	Min Exhaust Rate
Office, private	100	1.0	1.5	70	75	60	85	--
Office, open	70	1.0	1.5	70	75	60	85	--
Recording studio	100	1.0	2.0	70	75	60	85	--
Copy/work room	50	1.0	2.0	70	75	60	85	--
Media	33	1.2	1.5	70	75	60	85	--
Reception	10	1.0	0.25	70	75	60	85	--
Storage	--	--	--	70	75	60	85	--
Hallway	--	0.75	--	75	75	60	85	--

C. SUBMITTALS
1. Special Requirements: Submit product data, technical and performance data, shop drawings, installation details and instructions, calculations, and reports detailing system design as follows:
2. Calculations: Submit calculations for the following:
   a. HVAC loads calculations
   b. Code outside air ventilation calculations
3. Product List: Summary table of all equipment, accessories, and control devices including manufacturer and model number for each.
4. Product Data: Submit manufacturer's catalog data for materials, devices, and equipment furnished including physical dimensions of equipment.
5. Floor Plans: Full size plans showing equipment, piping, and wiring locations and routing. Show maintenance service access requirements. Drawings shall be prepared in electronic using AutoCAD.
6. Technical and Performance Data:
   a. HVAC loads calculations
   b. Code required outside air ventilation calculations
7. Equipment sizing calculations
8. Close-out Submittal:
   a. Submit Contractor's start-up and verification reports.
   b. Testing, adjusting, and balancing report

D. QUALITY ASSURANCE
   1. System must be installed by a manufacturer's certified installation contractor.
   2. All wiring shall be in accordance with the National Electric Code (NEC).
   3. Equipment shall be tested by a Nationally Recognized Testing Laboratory (NRTL), in accordance with ANSI/UL 1995/CAN/CSA-C22.2 No. 236-05 (R2009) – Heating and Cooling Equipment and bear the Listed Mark.

E. GENERAL REQUIREMENTS
   1. All HVAC equipment requiring regular service shall be located in an area that is readily accessible. All manufacturers' service clearance requirements shall be followed. Ceiling mounted heating, ventilating, and air-conditioning equipment shall be located such that equipment is readily serviceable from a ladder on the floor below uninhibited by walls or furniture at the time of construction.
      a. Equipment shall be seismically restrained in accordance with code.
      b. Provide testing, adjusting and balancing by a NEBB certified contractor in accordance with NEBB standards. Provide final TAB report.
   2. Provide identification of piping, valves, and equipment as follows:
      a. Piping: Adhesive type with printed piping identification on colored background. Letter size shall conform to ANSI A 13.1. Letter and background color shall conform to ANSI A 13.1.
      b. Valves: Polished brass or aluminum. 1/4-inch high letters, 1/2-inch high numbers. Black filled, 1-1/2-inch diameter. Attachment with smooth ply brass wire, brass "S" hook, or brass chain. Provide valve legend in mechanical room.
      c. Equipment Nameplates: Plastic laminated black-white-black phenolic plastic. Engraved to show white lettering on black background, except for labels attached to ceiling grid or located within finished spaces shall have black lettering on white background. Gothic letters minimum 3/16-inches high.
   3. Acoustical Performance: HVAC systems shall be design in accordance with the following requirements:
      a. Ambient Sound Levels: HVAC systems shall be designed to achieve ambient sound levels which are suitable for the intended use of the spaces. Ambient sound levels listed in ASHRAE 2015 Handbook – HVAC Applications 48.3 Table 1 will be used as the Basis of Design.
      b. Space-to-Space Sound Transmission: In recording rooms, HVAC systems shall be designed to prevent audible sound transmission between spaces.

3.2 INSULATION

A. Insulate ductwork, piping, and equipment in accordance with Code.
   1. Ductwork liner may be used on the interior of ductwork for sound attenuation.

3.3 HVAC CONTROLS

A. See sections 23 0900 and 23 09 30 for Building Automation System requirements.

END OF SECTION

SECTION 23 05 48

VIBRATION AND SEISMIC CONTROLS FOR HVAC

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Design and installation of seismic restraint components listed for new mechanical equipment, ductwork, and piping provided in Division 23 as scheduled or described herein.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Include rated load, rated deflection, and overload capacity for each vibration isolation device.
2. Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of vibration isolation device and seismic-restraint component required.
a. Tabulate types and sizes of seismic restraints, complete with report numbers and rated strength in tension and shear as evaluated by an agency acceptable to authorities having jurisdiction.
b. Annotate to indicate application of each product submitted and compliance with requirements.

B. Delegated-Design Submittal:
1. Provide a delegated submittal package comprised of drawings, details, and calculations signed and sealed by an engineer specializing in the associated work and registered in Oregon. Submittals shall indicate full compliance with the device specification in Part 2. Any deviation shall be specifically noted and subject to engineer approval. Submittals shall include device dimensions, placement, and attachment and anchorage requirements.
2. All restraining devices shall have a pre-approval number from an organization acceptable to the Authority Having Jurisdiction. Where pre-approved devices are not available, provide submittals based on independent testing or calculations stamped by a registered professional engineer with at least five years of seismic design experience and licensed in the state of Oregon.
3. Ductwork and Piping Restraint:
a. Provide full or half size copies of ductwork and piping plans from the Contract Documents or coordination drawings, showing location and type of each vibration isolation component and seismic restraint to be installed. Drawings shall consist of mechanically reproduced copies of the Contract Documents, or new drawings custom drafted specifically for the Work of this Project. Each drawing shall be printed on a single sheet.
b. Provide piping and ductwork restraint assembly construction and installation details. Assemblies may be pre-engineered or custom designed for the application.
4. Equipment Restraint
a. Select vibration isolators and accessories as scheduled and as required to meet seismic restraint requirements.
b. Provide equipment seismic restraint assembly construction and installation details. Assemblies may be pre-engineered or custom designed for the application. Include method of attachment to supporting structure.
c. Provide specific details of seismic restraints and anchors; include number, size and locations for each piece of equipment.
d. For equipment mounted outdoors, include wind load in determining the necessary attachment and restraint requirements.
5. Calculations: Provide design calculations to verify that seismic and wind load restraint will comply with the Oregon Structural Specialty Code for the site and the building type listed.

1.3 INFORMATIONAL SUBMITTALS

A. Provide a written authorization letter from the seismic restraint Engineer authorizing a representative to provide the inspection if a designated representative is used. Describe the representative's qualifications.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Provide seismic and wind load design in accordance with 2014 Oregon State Structural Specialty Code and ASCE/SEI 7.

B. Risk Category: III

C. Component Importance Factors (Ip): Ip=1.0

2.2 RESTRAINT CHANNEL BRACINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. B-line, an Eaton business.
   2. Hilti, Inc.
   3. Mason Industries, Inc.
   4. Vibro-Acoustics

B. Basis of Design: Mason Industries SSBS/SHB

C. Description: MFMA-4, shop- or field-fabricated bracing assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end. Provide other matching components. Corrosion-resistant coating; rated in tension, compression, and torsion forces.

2.3 RESTRAINT CABLES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Kinetics Noise Control, Inc.
   2. Mason Industries, Inc.
   3. Vibro-Acoustics

B. Basis of Design: Mason Industries SCB/H

C. Restraint Cables: ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service; with a minimum of two clamping bolts for cable engagement.

2.4 MECHANICAL ANCHOR BOLTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. B-line, an Eaton business
   2. Hilti, Inc.
   3. Kinetics Noise Control, Inc.
   4. Mason Industries
   5. Vibro-Acoustics

B. Basis of Design: Mason Industries SASE, SAST

C. Mechanical Anchor Bolts: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

2.5 ADHESIVE ANCHOR BOLTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Hilti, Inc.
2. Kinetics Noise Control, Inc.
3. Mason Industries
4. Vibro-Acoustics

B. Basis of Design: Mason Industries SRA

C. Adhesive Anchor Bolts: Drilled-in and capsule anchor system containing PVC or urethane methacrylate-based resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

2.6 SEISMIC-RESTRAINT ACCESSORIES

A. Hanger-Rod Stiffener: Steel tube or steel slotted-support-system sleeve with internally bolted connections or reinforcing steel angle clamped to hanger rod.

B. Hinged and Swivel Brace Attachments: Multifunctional steel connectors for attaching hangers to rigid channel bracings and restraint cables.

C. Bushings for Floor-Mounted Equipment Anchor Bolts: Neoprene bushings designed for rigid equipment mountings and matched to type and size of anchor bolts and studs.

D. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for rigid equipment mountings and matched to type and size of attachment devices used.

E. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.

PART 3 - EXECUTION

3.1 GENERAL

A. Coordinate locations and sizes of structural supports with locations of vibration isolators and seismic/wind restraints (e.g., roof curbs, cooling towers, air-cooled chillers, etc.).

B. Isolated and restrained equipment, duct and piping located on roofs must be attached to the structure. Intermediate supports between the restraint and structure that are not attached to the structure must be approved the project structural engineer or by the restraint manufacturer.

C. Block and shim all bases level so that all ductwork, piping and electrical connections can be made to a rigid system at the proper operating level, before isolators are adjusted. Ensure that there are no rigid connections or incidental physical contacts between isolated equipment and the building structure or nearby systems.

D. Ensure housekeeping pads have adequate space to mount equipment and isolator housings and shall also be large enough to ensure adequate edge distance for isolator anchors.

E. Select and locate vibration isolation equipment to give uniform loading and deflection, according to weight distribution of equipment.

3.2 EXAMINATION

A. Examine areas and equipment to receive vibration isolation and seismic- and wind-control devices for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine rough-in of reinforcement and cast-in-place anchors to verify actual locations before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 APPLICATIONS

A. Multiple Pipe Supports: Secure pipes to trapeze member with clamps approved for application.

B. Hanger-Rod Stiffeners: Install hanger-rod stiffeners where indicated or scheduled on Drawings to receive them and where required to prevent buckling of hanger rods due to seismic forces.

C. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength is adequate to carry present and future static and seismic loads within specified loading limits.

3.4 VIBRATION CONTROL AND SEISMIC-RESTRAINT DEVICE INSTALLATION

A. Install all equipment in accordance with manufacturer's recommendations and as shown on seismic design documents.

B. Installation of vibration isolators must not cause any change of position of equipment, piping, or ductwork resulting in stresses or misalignment.

C. Piping Restraints:
1. Comply with requirements in MSS SP-127.
2. Space lateral supports a maximum of 40 feet on center and longitudinal supports a maximum of 80 feet on center.
3. Brace a change of direction longer than 12 feet.

D. Install cables so they do not bend across edges of adjacent equipment or building structure.

E. Install seismic-restraint devices using methods approved by an agency acceptable to authorities having jurisdiction that provides required submittals for component.

F. Install bushing assemblies for anchor bolts for floor-mounted equipment, arranged to provide resilient media between anchor bolt and mounting hole in concrete base.

G. Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment-mounting channels are attached to wall.

H. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.

I. Drilled-in Anchors:
1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid pre-stressed tendons, electrical and telecommunications conduit, and gas lines.
2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
4. Adhesive Anchors: Clean holes to remove loose material and drilling dust prior to installation of adhesive. Place adhesive in holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive.
5. Set anchors to manufacturer's recommended torque, using a torque wrench.
6. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

END OF SECTION

SECTION 23 09 00

BUILDING AUTOMATION SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Work hereunder includes extending central Automated Logic control system to control new and revised terminal units for zones located in the Areas of Work shown on Drawings. Existing terminal units are served by a functionally obsolete Siebe Ultivist control system. Associated work includes but is not limited to:
   1. Terminal unit controls for new and existing zones, communication, control wiring, and power wiring as required.
   2. Building operation and energy management software and related programming including complete licensing agreement for complete use and access of software required for installation, configuration, programming, and operation.
   3. Field Mounted Devices as specified in SECTION 23 09 30 – FIELD INSTALLED CONTROL SYSTEM COMPONENTS.
   4. Develop sequences of operations, suitable for control of zones within the area of work, and implementation with existing systems.
   5. Other materials and devices not shown as part of other work but necessary to provide mechanical and electrical system control and monitoring sequences specified.
   6. Integrate systems installed under this project with Automated Logic system in building and campus EMS.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

A. Control Contractor to coordinate with other trades to ensure delivery and correct installation of products furnished but not installed under this section. Coordination to include a review of schedule, manufacturer's installation requirements, and equipment locations. Such products include but are not limited to the following:
   1. Control Valves

1.3 RELATED SECTIONS

A. SECTION 23 09 30– FIELD INSTALLED CONTROL SYSTEM COMPONENTS

1.4 SUBMITTALS

A. Provide submittals for products listed in the Product Table below in accordance with Section 23 05 00 – General Mechanical Provisions. Submittal requirements indicated by column number designation as follows:
   1. Materials List
   2. Catalog Data
   3. Product Data
   4. Performance Data
   5. Wiring Diagrams
   6. Shop Drawings
   7. Installation Instructions
   8. Special Requirement listed herein.

PRODUCT TABLE	1	2	3	4	5	6	7	8
All Products This Section								X

B. Special Requirements:
   1. Provide all control submittals including Sections 23 09 00 – BUILDING AUTOMATION SYSTEMS and 23 09 30 - FIELD INSTALLED COMPONENTS, as a single package.
   2. Submittals prior to starting work:
      a. Submit in accordance with Section 01 33 00 – SUBMITTAL PROCEDURES and Section 23 05 00 – GENERAL MECHANICAL PROVISIONS within 6 weeks of project award.

b. All required schematics and plans prepared on AutoCAD 2012 or higher.
c. When manufacturers' product information applies to a product series rather than a specific product, the data specifically applicable to the project shall be highlighted or clearly indicated by other means.
d. Building Automation System Hardware
e. Controlled Systems:
    1) Provide an instrumentation list for each controlled system including all controlled system elements in table format. Tables to show element name, type of device, manufacturer, model number, and product data sheet number.
    2) Provide a schematic diagram of each controlled system. Include control points labeled with appropriate point names. Graphically show the location of all control elements.
    3) Provide a schematic wiring diagram for each controlled system. Label all elements. Label all terminals.
    4) Provide a mounting, wiring, and routing plan-view drawing. Layout to account for HVAC, electrical, and other system design and layout requirements.
    5) Provide a complete description of the function of each controlled system including sequence of operation.
    6) Provide a points list for each system controller including both input and output (I/O) points. Note point designations, point function, controlled device associated with the I/O point, location of the I/O device, and point alarm requirements.

3. Closeout Submittals
    a. Submit in accordance with SECTION 01 78 39 - PROJECT RECORD DOCUMENTS. Submit 15 days prior to final completion for approval.
    b. Record documents shall include the following.
        1) Project record drawings. Project record drawings will be as-built versions of the shop drawings. Include one set of magnetic media including CAD drawings in .DWG format.
        2) Provide copy of testing and commissioning reports. Include trend logs used for verification.
        3) Material to be included in Project Operation and Maintenance Manuals
            a) Names, addresses and 24-hour telephone numbers of installing Contractors and the service representatives for each.
            b) Operators manual with procedures for operating the control systems including logging on/off, alarm handling, producing point reports, trending data, overriding computer control, and changing set points and other variables.
            c) A listing and documentation of all custom software created using the programming language including set points, tuning parameters, and object database.
            d) A list of recommended spare parts with part numbers and suppliers.
            e) Recommended preventive maintenance procedures for all system components including a schedule of tasks, time between tasks, and task descriptions.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Automated Logic, installed by Clima-Tech.

2.2 WORKSTATION GRAPHICS

A. System Graphics: Provide graphics for equipment within the project scope. Include floor plans depicting zone and terminal unit locations.

2.3 SYSTEM CONTROLLERS

A. Application Specific Controllers: Independent, stand-alone microprocessor-based controller to control local equipment or systems where the associated sequence of operation can be met using pre-programmed control routines. Controllers should have the following general characteristics.
   1. Sufficient memory in each controller to control the target system.
   2. Non-volatile memory to maintain the BIOS and programming information in the event of a power failure.

2.4 POWER SUPPLIES AND LINE FILTERING

A. Provide UL listed control transformers. Provide class 2 current-limiting type or furnish over-current protection in both primary and secondary circuits in accordance with NEC requirements. Limit connected loads to 80% of rated capacity.

B. Provide transient voltage and surge suppression for all workstations and controllers either internally or as an external component. Surge suppression shall have the following minimum performance criteria.
   1. Dielectric strength of 1000 volts minimum.
   2. Response time of 10 nanoseconds.
   3. Transverse mode noise attenuation of 65 dB or greater.
   4. Common mode noise attenuation of 150 dB or better at 40 Hz to 100 Hz.

2.5 WIRING AND RACEWAYS

A. Provide wiring, plenum cable, and raceways in accordance with Division 16.

B. All insulated wire to have copper conductor. UL labeled for 90 degree C service.

PART 3 – EXECUTION

3.1 COORDINATION

A. Testing and Balancing
   1. Provide to the Testing and Balancing Contractor a set of all tools and temporary licenses necessary to interface to the control system for testing and balancing purposes. Tools to be returned at the completion of test and balancing work.
   2. Provide training in the use of the tools.
   3. Provide a qualified technician to assist in the testing and balancing process where required.

3.2 WORKMANSHIP

A. Install all equipment in accordance with manufacturers' recommendations.

B. Install equipment, piping, and wiring/raceway parallel to building lines wherever possible.

C. Provide sufficient slack and flexible connections in wiring and pneumatic tubing to allow for vibration of piping and equipment.

D. Install all equipment in readily accessible locations as defined by Chapter 1, Article 100, Part A of the National Electric Code.

3.3 EXISTING EQUIPMENT

A. Existing Wiring: Contractor may reuse existing wiring, provided the quality of the existing installation meets this specification. Verify the integrity of existing wiring and re-label in accordance with this specification. Remove wiring abandoned as the result of this work.

B. Contractor is not responsible for the repair or replacement of existing control system equipment to be reused.

3.4 GENERAL WIRING

A. All control and interlock wiring shall comply with national and electrical codes and Division 26. Where requirements of this section differ from those in Division 16, the requirements of this section shall take precedence.

B. ALL NEC Class 1 (line voltage) wiring shall be UL listed in approved raceway according to NEC and Division 16 requirements.

C. All low-voltage wiring shall meet NEC Class 2 requirements. Low voltage power circuits shall be sub-fused when required to meet Class 2 limits.

D. Where NEC Class 2 (current-limited) wires are in concealed and accessible locations, including ceiling plenum return air plenums, approved cable not in raceway may be used provided cables are UL listed for the intended application.

E. All wiring in mechanical, electrical, or service rooms and wiring located where it may be subject to damage shall be installed in raceway.

F. Do not install Class 2 wiring in raceways containing Class 1 wiring. Boxes and panels containing high-voltage wiring may not be used for low-voltage wiring except for the purpose of interfacing the two.

G. Do not install wiring in raceway containing tubing.

H. Where Class 2 wiring is installed exposed, wiring is to be routed parallel or perpendicular to building lines and neatly tied at a maximum of 10-foot intervals.

I. Where plenum cables are used without raceway, support or anchor cable from building structure. Do not anchor or support cable from ductwork, electrical raceways, piping, or suspended ceiling systems.

J. Provide all wire-to-device connections at terminal block or terminal strip. Provide all wire-to-wire connections at terminal block.

K. Neatly bundle wiring located within enclosures to permit access to devices and terminals.

L. Maximum allowable voltage for control wiring shall be 120V. If only higher voltages are available, Contractor shall provide a step-down transformer.

M. All wiring shall be installed as continuous lengths with no splices permitted between termination points.

N. Install plenum wiring in sleeves where it passes through walls and floors. Provide fire-stopping where necessary to maintain fire rating.

O. Provide size of raceway and size and type of wire as required by NEC and as required to meet manufacturers' recommendations for connected equipment.

P. Include one pull string in each raceway 1-inch or larger.

Q. Use color coded conductors throughout.

R. Locate control and status relays in designated enclosures only. Such enclosures include packaged equipment control cabinets unless such cabinets also contain Class 1 starters.

S. Conceal all raceways except within mechanical, electrical, or service rooms. Maintain minimum raceway clearance of 6-inches from high temperature equipment such as steam piping or boiler flues.

T. Secure raceways with raceway clamps fastened to the structure and spaced in accordance with code requirements. Raceways and pull boxes may not be hung on flexible duct strap or tie rods. Raceways may not be supported from ductwork, electrical raceways, piping, or suspended ceiling systems.

U. Install insulated bushings on all raceway ends and openings to enclosures. Seal top end of all raceways.

V. Maintain updated wiring diagrams (as-built) at site with terminations identified.

3.5 COMMUNICATION WIRING

A. Install in accordance with 3.4 above.

B. Follow manufacturers' recommendations for all communications cabling including but not limited to maximum pulling, tension, and bend radius.

C. Do not install communications cabling in a raceway or enclosure containing Class 1 or other Class 2 wiring.

D. Verify the integrity of the entire network immediately following cable installation using test measures appropriate for each cable.

E. All communications wiring shall be un-spliced length when that length is commercially available.

F. All communications wiring shall be labeled to indicate origination and destination.

G. Ground coaxial cable in accordance with NEC regulations article on "Communications Circuits, Cable and Protector Grounding."

3.6 IDENTIFICATION OF HARDWARE AND WIRING

A. Label all wiring and cabling, including wiring and cabling terminating within factory-fabricated panels, within 2 inches of termination with the BAS address or termination number.

B. Permanently label or code each point of field terminal strips to show the instrument or item served.

C. Identify control panels with minimum ½-inch letters on laminated plastic nameplate.

D. Identify all other control components with permanent labels. All plug-in components shall be labeled so that removal of component does not remove label.

E. Identify room sensors relating to terminal box or valves with nameplate located within sensor cover.

F. Arrange components so that UL or CSA labels are visible after equipment is installed.

G. Identifiers shall match record documents.

H. Provide laminated network communication diagrams, point-to-point wiring diagrams, and process control diagrams in each control panel for control components contained therein.

3.7 BAS CONTROLLER INSTALLATION

A. Provide sufficient internal memory for the specified sequences of operation and trend logging. Provide a minimum of 25% available memory free for future use.

3.8 SEQUENCE OF OPERATIONS

A. Provide sequence of operations for new and existing terminal unit zones in Areas of Work.

3.9 PROGRAMMING

A. Provide programming for the system as required to perform the sequence of operation, as developed under this section. Provide all other programming necessary for proper operation of the system but not specified including but not limited to time delays, control deadbands, equipment interlocks, equipment sequencing, alarm notification, and control sequences recommended by equipment manufacturers.

B. All control setpoints and loop tuning parameters accessible for review and adjustment at workstation graphics or through workstation menus without requiring modification of program code.

C. For systems using text-based programming, imbed comments in the programming code to clearly describe each section of the program.

3.10 GRAPHICS

A. Provide graphics for all controlled systems and floor plans of the building.

B. Meet with Owners Authorized Representative prior to beginning development of graphic displays to discuss Owner's preferences.

C. Show terminal unit information on a "graphic" summary table. Provide dynamic information on each point shown.

3.11 CONTROL SYSTEM CHECKOUT AND TESTING

A. Contractor shall completely test and verify specified control system performance. Compile test results and include with written certification.

B. Contractor shall furnish all labor and test apparatus required to calibrate and prepare for service all instruments, controls, and accessory equipment furnished hereunder.

C. After system operation is completely verified, provide written certification to Owner that systems have been fully tested and are operating according to specifications and ready for functional testing. Provide copies of documentation signed by person performing tests. Documentation to include:
   1. Calibration logs
   2. BAS Loop Response Trends
   3. Demand Limiting Trends
   4. Operational Logs

3.12 DEMONSTRATION AND ACCEPTANCE

A. Demonstrate operation of control system to Owner’s Authorized Representative including:
   1. Menu functions
   2. Point overrides
   3. Control loop response after point modification
   4. Alarm response time

3.13 TRAINING

A. Provide a minimum of two hours orientation to Owner's personnel of project scope, installed hardware locations, device types and project equipment control demonstration on BAS.

END OF SECTION

SECTION 23 09 30

FIELD INSTALLED CONTROL SYSTEM COMPONENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Temperature Measurement

B. Automatic Control Valves

C. Actuators

1.2 RELATED SECTIONS

A. SECTION 23 09 23 – BUILDING AUTOMATION SYSTEMS

1.3 SUBMITTALS

A. Provide submittals for products listed in the Product Table below in accordance with Section 23 05 00 – General Mechanical Provisions. Submittal requirements indicated by column number designation as follows:
   1. Materials List
   2. Catalog Data
   3. Product Data
   4. Performance Data
   5. Wiring Diagrams
   6. Shop Drawings
   7. Installation Instructions
   8. Special Requirement listed herein.

PRODUCT TABLE	1	2	3	4	5	6	7	8
Temperature measurement		X						
Automatic control valves			X	X				
Actuators		X						

1.4 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

A. Control Contractor to coordinate with other trades to ensure delivery and correct installation of products furnished but not installed under this section. Coordination to include a review of schedule, manufacturer's installation requirements, and equipment locations. Such products include but are not limited to the following.
   1. Control valves
   2. Terminal unit controls

B. Control Contractor to provide all manufacturer's product information including recommended installation instructions to installing Contractor.

PART 2 - PRODUCTS

2.1 TEMPERATURE MEASUREMENT

A. Temperature Sensors
   1. Acceptable Manufacturers: Mamac, Precon, Veris, or approved Direct Digital Control System manufacturer.
   2. Sensing element: Thermister type, +/- 0.5^{o}F from 32°F to 150°F accuracy, less than 0.25^{o}F drift/year. Compatible with BMCS analog input requirements. Select sensor with smallest range available that will span anticipated sensed medium temperature range.
   3. Space Air Sensor: Range 40 to 90 ^{o}F, wall mounted with vandal-resistant heavy plastic or stainless-steel cover.
      a. Options: Provide the following space sensor options.
         1) Local set point adjustment
         2) Override switch

3) Temperature display
4) Communications port

B. Temperature Transmitters
1. Acceptable Manufacturer: Mamac, Precon, Veris, or approved Direct Digital Control System manufacturer.
2. Sensing element: 100 ohm, platinum RTD, +/- 0.65°F @ 70°F.
3. Transmitters: 4 to 20 mA output. Select sensor with smallest range available that will span anticipated sensed medium temperature range. NEMA Type 4 rated Instrument head suitable for housing RTD wiring terminations and temperature transmitter and temperature sensor.
4. Ductwork Probe Sensor: Aluminum or stainless-steel sensor sheath, sensor probe length suitable for application.

2.2 AUTOMATIC CONTROL VALVES

A. Acceptable Manufacturer: Belimo or approved BAS manufacturer

B. General: Two-way type for modulation service.

C. Close-off Pressure Rating: Valve trim and valve actuator furnished to provide the following minimum close-off pressure ratings
1. Water Valves:
a. Two-way valves: 150% of total system (pump) head
b. Three-way: 300% of pressure differential between ports A and B at design flow or 100% of total system pump head.

D. Water Valves:
1. Two-way Modulating 2-inch and below: Fully proportional, modulating ball valve. Equal percentage flow characteristics. Brass body with nickel plating, stainless steel ball, fiberglass reinforced Teflon seats, blow out proof stem, TEF ZEL characterizing disc, stainless steel trim. 400 psi maximum rated pressure, 0-212ºF temperature rating, 200 psi close off pressure, 20 psi maximum operating differential pressure. Rangeability 100 to 1.
2. Sizing Criteria:
a. Two-way modulating service: Pressure drop equal to twice the pressure drop through the associated heat exchange device, 50% of the pressure difference between supply and return mains, or 5 psi, whichever is greater.
3. Failure Mode:
a. Heating Water Coils: Last position

2.3 ACTUATORS

A. Proportional Electric Actuator:
1. Direct coupled, spring return. Fully proportioning with ample power to operate valve or damper against fluid pressures and mechanical friction.
2. Size to provide specified valve shut-off pressure or damper differential pressure.
3. 0 to 10 VAC or 4 to 20 mA input control signal.
4. 24 VAC supply power. Suitable for use with Class 2 wiring. Maximum 10 VA for AC installations and 8 watts for DC applications.
5. Actuator shall have electronic overload or digital rotation circuitry to prevent damage to actuator through entire rotation range.
6. Actuators shall initialize when actuator is powered. Initialization will determine stroke length and enable actuator to set minimum and maximum limits of supplied control signal to ensure use of entire control signal range. Feedback automatically adjusted to the effective stroke.
7. Provide manual override and visual position indicator.
8. Provide NEMA Type 1 enclosures.
9. Damper Service:
a. Direct shaft-mounted

b. Provide one actuator per damper section. No connecting rods or jack shafts allowed except where indicated on control drawings.
c. Provide positive method of attaching actuator to damper shaft. If single bolt or set-screw is used, mill flat side on damper shaft to avoid slippage.

B. Floating Point Control Actuators
1. Direct-coupled, floating point control, spring return fail-safe
2. Tri-state binary input control application
3. 24 VAC supply power
4. Actuator shall have electronic overload or digital rotation circuitry to prevent damage to actuator through entire rotation range.
5. Provide manual override and visual position indicator
6. Provide NEMA Type 2 enclosures

PART 3 - EXECUTION

3.1 INSTALLATION

A. Locate field-mounted devices as shown on Drawings and install per manufacturers recommendations.

3.2 SENSORS AND TRANSMITTERS

A. Provide temperature sensor for space temperature sensing applications.

B. Provide temperature transmitter for the following applications:
1. Ductwork Temperature with Probe Sensor

C. Space Temperature Sensors:
1. Mount on wall or on ceiling pendant as shown on Drawings.
2. For wall installation, mount on wall 60 inches above finished floor level in concealed junction boxes properly supported by wall framing.
3. For ceiling installation, mount on minimum 24-inch pendant, but not less than 84 inches above finished floor level.
4. Locate space temperature sensor to avoid localized heating or cooling effects from space equipment, lights, or diffusers.
5. All wires attached to sensors shall be air sealed in their raceways to prevent air transmitted from other areas from affected sensor accuracy.

D. Ductwork Probe Temperature Transmitter: Size to position tip of probe in middle of air stream.

3.3 AUTOMATIC VALVES

A. Install all slip-stem control valves with stem position no more than 60 degrees from vertical.

B. Locate to allow access and service. Ensure that actuator can be removed and services without interference from structure of other piping and equipment.

C. Contractor shall verify that control valve port arrangement provides the intended valve function when installed as shown on Drawings.

3.4 ACTUATORS

A. Actuator cords or conduit shall incorporate a drip leg if condensation is possible.

END OF SECTION

SECTION 26 05 00

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY OF WORK

A. Contractor shall provide complete and fully operational electrical distribution, lighting, communications horizontal cabling, and fire alarm systems modifications as specified herein.

1.2 CODES AND STANDARDS

A. Building Code: All work must conform to the latest edition of the Oregon Building Code, and are collectively referred to as the “Code”:
   1. Oregon Electric Code
   2. Oregon Energy Efficiency Specialty Code
   3. Oregon Structural Specialty Code
   4. Oregon Fire Code
   5. National Electrical Code – NFPA 70
   6. National Fire Alarm and Signaling Code – NFPA 72
   7. Occupational Safety and Health Regulations for Construction, 29 CFR, Parts 1926 and 1910.

1.3 GENERAL REQUIREMENTS

A All electrical equipment shall be listed as approved for its application by the Underwriters Laboratory or other testing agency approved by the State of Oregon Electrical Board. Approval indicates agency meets testing standard requirements for electrical safety required by Oregon Revised Statutes 470.510 through 479.855 and Oregon Administrative Rules.

B Operations and Maintenance Manuals: Provide operations and maintenance information for all materials. Equipment and systems provided hereunder. Manuals shall contain full information for each item of mechanical, electrical, or other operating equipment including:
   1. Manufacturer’s instructions for installation, startup, operation, inspection, and maintenance
   2. Performance capacity
   3. Catalog data sheets
   4. Part list
   5. Maintenance schedules

C. Instruct Owner in proper operation and maintenance of equipment and systems. Instruction shall generally include topics listed in manufacturer’s operations and maintenance manual. Operator instructions shall cover all aspects of manual, automatic, and safety controls. Contractor shall also instruct the Owner in general configuration of systems and location of equipment and components. Prepare Energy Code forms as required for equipment and systems.

D. Provide record “as-built” drawings in AutoCAD format for electrical scope. Show all deviations from original construction drawings and locations concealed wiring by accurate dimensions from building lines.

1.4 SUBMITTALS AND SHOP DRAWINGS

A. Submit product data, technical and performance data, shop drawings, installation details and instructions, calculations, and reports detailing system design as follows:
   1. Product List: Summary table of all equipment, accessories, and fixtures including manufacturer and model number for each.
   2. Product Data: Submit manufacturer’s catalog data for materials, devices, and equipment furnished including physical dimensions of equipment.
   3. Floor Plans: Full size plans showing equipment, fixtures, and conduit routing. Show maintenance service access requirements. Drawings shall be prepared in electronic format with AutoCAD using original construction document files.

B. Fire Alarm Special Requirements:
   1. Three complete plans and specifications for fire alarm system modifications shall be submitted for review and approval prior to system installation. Plan review fees must be paid before picking up the approved set of plans. Plans and specifications shall be submitted to the Permit and Information Center. Provide Owner with a copy of the approved plans.
   2. Plans and specifications shall include, at minimum, the following information:
      a. Floor plan with rooms labeled and occupancy use noted.
         1) Location of all initiation, notification devices, control panel, and remote annunciator affected by remodel.
         2) Mounting heights and ceiling descriptions where detectors are installed.
      b. Point to point system wiring diagram.
         1) Devices, controls, and end-of-line location for each circuit.
         2) Number of conductors and wire gauge for each circuit run.
         3) Zone identification.
      c. Voltage drop calculation
         1) Devices, length, resistance of wire, and end-of-line voltage for each circuit.
      d. Battery calculation.
      e. Other information required by the local authority having jurisdiction.

1.5 QUALITY ASSURANCE

A. Qualifications of Installers:
   1. For actual fabrication, installation and testing of Work of this Section, use only thoroughly trained and experienced personnel familiar with requirements for this Work and with installation recommendations of Manufacturers of specified items.

B. Installation Criteria:
   1. Conform Work with conditions shown and specified.
   2. Where adjustments or modifications of Work are necessary for fabrication and installation of items, or for resolution of conflicts between items, make such adjustments at no added expense to Owner.
   3. Submit adjustments or modifications of Work affecting functional or aesthetic design of Work to Architect for review.
   4. Pay for equipment relocations or modifications necessitated by failure to advise Architect of conflicts or coordinate work.

C. Select equipment to meet design conditions stated. Contractor is responsible for meeting technical data and performance requirements of system.

D. Satisfy requirements of regulatory agencies or codes having jurisdiction over project. Provide U.L. labels for all equipment falling under testing capabilities of U.L.

E. Electrical power systems shall not be started until electrical energy metering systems are installed and fully functional. Owner's Authorized Representative shall approve installation prior to system initial startup.

PART 2 PRODUCTS

2.1 POWER DISTRIBUTION

A. Circuit Breakers:
   1. Thermal-magnetic, molded case, with inverse time current overload and instantaneous magnetic tripping unless otherwise noted.
   2. Quick-make, quick-break, with tripped indication clearly shown by breaker handle taking a position between ON and OFF.
   3. Multi-pole breakers shall have a comment internal trip.
   4. Provide handle ties per NEC for breakers serving system furniture circuits where there are shared neutral conditions.

5. Additions to existing panelboards shall match or be compatible with existing panelboards.

2.2 WIRE AND CABLE

A. Building Wiring: 98 percent conductivity copper, 600 volt insulated, stranded. Type THHN for interior dry and damp locations. Type THWN or XHHW for wet and exterior locations.

B. Minimum size for lighting and power branch circuiting: #12 AWG.

C. Twist-on connectors shall be UL pressure-type, solderless, insulated, wound spring grip twist on connector.

2.3 SURFACE RACWAYS

A. Surface metal channel with fitted cover, suitable for use as surface raceway.

B. Include entrance end fittings, radius inserts, couplings, elbows, and connectors designed for use with raceway system.

C. Include boxes and extension rings designed for use with raceway system.

D. Color: White

E. Acceptable products: Wiremold Series 4000, or approved equivalent

2.4 RACEWAYS AND BOXES

A. Conduit and Tubing: Electrical metallic tubing (EMT)

B. Flexible Conduit: Steel armor, flexible plastic jacketed type with liquidtight connectors (liquidtight flexible metallic conduit)

C. Fittings:
1. General: Approved for purpose.
2. Electrical Metallic Tubing (EMT): Connectors and couplings to be case steel. Pre-insulated connectors and couplings shall be compression, setscrew type. All connectors shall have insulated throats.
3. Flexible Metallic Conduit: Clamp type, galvanized malleable iron with insulated throat.
4. Liquidtight Flexible Metallic Conduit: Continuous copper ground in core; approved watertight.

D. Minimum Box: 4-inch box, 1-1/2-inches deep. Provide raised covers on bracket surface mounted outlets, plater rings on flush outlets.

E. Three or More Devices at One Location: Use one-piece gang boxes with device cover, install one device per gang.

F. Provide galvanized steel interior outlet wiring boxes, of the type, shape, and size, including depth of box, to suit each respective location and installation; constructed with stamped knockouts in back and sides, and with threaded holes with screws for securing box covers or wiring devices.

G. Provide outlet box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual wiring situations.

H. Pullboxes and Junction Boxes: Sheet metal construction, conforming to National Electrical Code, with screw-on cover.

I. Flush Mounted Pullboxes: Provide overlapping covers with flush-head retaining screws, finished in light gray enamel.

J. Box volumes shall meet NEC requirements for size and number of entering conduits.

2.5 RECEPTACLES AND EQUIPMENT

A. Duplex Receptacles: Full gang size, polarized, duplex, parallel blade, U-grounding slot, specification grade, rated 20 amperes, 125 volts (unless otherwise noted).

B. Switches: 120/277 Volt. AC Quiet, slow make, slow break design, toggle handle, with enclosed case, rated 20 amperes, specification grade. Provide matching two-pole, three-way and four-way switches as required.

C. Ground Fault Receptacles: Specification grade, 20 ampere, duplex receptacle with integral ground fault circuit interrupter. Test and reset buttons. Matching wall plate.

D. Wall Plates: Satin stainless steel, Type 302. Nominal .040 thick. Match device configuration.

E. Device Color: Match existing color scheme that is prevalent throughout building.

F. Wiring devices with push-in terminals are not permitted.

2.6 LIGHTING

A. LED Luminaires
   1. LED light fixtures shall be in accordance with IES, NFPA, UL as shown on Drawings and as specified.
   2. LED modules shall Comply with IES LM-79 and LM-80 requirements unless otherwise noted.
   3. Minimum CRI: 80
   4. CCT: as indicated on Luminaire Schedule.
   5. Light output as indicated on Luminaire Schedule.

2.7 LIGHTING CONTROLS

A. Automatic Wall Switch
   1. Self-contained single-gang device. Motion sensor shall sense motion using two technologies to detect occupancy.
   2. 120/277VAC operation.
   3. Adjustable sensitivity and time delay.
   4. Switch shall have manual ON / automatic OFF mode.
   5. Acceptable products: Wattstopper DSW-301, or SensorSwitch equivalent.

B. Dual Technology Ceiling Motion Sensor
   1. Motion sensor shall sense motion using tow technologies to detect occupancy.
   2. 120/277V operation.
   3. 1000 square foot coverage.
   4. Acceptable products: Wattstopper DT-355, or SensorSwitch equivalent.

C. Emergency Shut Relay
   1. Normally-closed electrically-held to automatically shunt manually controlled emergency lighting during a power outage.
   2. 120 or 277-volt coiled. 20-amp, 120/277-volt contact rating.
   3. ETL listed to UL916 and UL924.
   4. Acceptable products: Wattstopper ELCU-200, Functional Devices Inc., or approved equal.

2.8 ELECTRICAL IDENTIFICATION

A. Nameplate: Three-layer, white front and back with black core laminated plastic. Engraved through outer layer to show white characters on black background. Beveled edges.

B. Wire and Cable Markers: Heat shrink thermo-labels.

C. Adhesive Film Labels: Machine printed, in black on clear background, by thermal transfer or equivalent process.

2.9 COMMUNICATIONS HORIZONTAL CABLING

A. Cabling:
   1. Voice – Superior Essex Cat 3, colored Grey, plenum or riser rated per Code.
   2. Data – Superior Essex DataGAIN Cat 6, colored Green, plenum or riser rated per Code.
   3. Wireless Access Points – Superior Essx Cat 6A, colored Purple, plenum or riser rated per Code.
   4. All horizontal cables are to be labeled using a machine printed label and located at each end of cable run, approximately 6 inches from termination point. Handwritten labels are not acceptable.

B. Modular Jacks:
   1. Ortronics category 3, voice, 8 POS, Fog White T568B. Ortronics P/N: OR-63730003.
   2. Ortronics category 6, data, 8 POS, Green T568B. Ortronics P/N: OR-TJ600-25.
   3. Ortronics category 6A, data for Wireless Access Points only, 8 POS, Purple, T568B. Ortronics P/N: OR-TJ6A-27

C. Work Area Outlets:
   1. Flush mounted faceplates
      a. Work Area Outlet: Six port TracJack faceplate, constructed from high impact thermoplastic, with recessed label fields, mounts within a single-gang wall box. Ortronics P/N: OR-40300545, fog white.
      b. Wall Phone: One port TracJack faceplate with mounting lugs for wall phone, constructed from stainless steel, mounts within single-gang wall box, RJ45. Ortronics P/N: OR-403STJ1WP.
   2. Dust covers:
      a. Single port dust cover for modular openings, color to match faceplate. Ortronics P/N: OR-42100002, fog white.

2.10 FIRE ALARM

A. Provide new notification appliance as indicated on Drawings. All new equipment shall be compatible with existing building fire alarm system.

B. New devices shall be intelligent/addressable devices

C. Provide additional notification appliance power supplies as required. New equipment shall match existing building fire alarm manufacturer.

PART 3 EXECUTION

3.1 ELECTRICAL SYSTEM DESIGN/BUILD GUIDELINES

A. SUMMARY OF WORK
   1. Provide complete and satisfactorily operating addition to the existing electrical system as specified hereunder and as indicated on Drawings. Work generally includes, but is not limited to electrical distribution, lighting, devices, wiring systems and control systems. Contractor shall provide electrical fixtures and systems described below and all work necessary for installation.
   2. Coordination with other trades and field conditions will be required. As a Design/Build Subcontractor to the General Contractor, prepare electrical system layout drawings suitable for obtaining a City of Corvallis building permit, showing locations and types of equipment, conduit and wire sizing, other related items, and an electrical load summary.

3.2 POWER DISTRIBUTION

A. Power distribution will consist of extension and reuse of existing panelboards:
   1. Use existing panels identified on Drawings for new branch circuits. Provide new panel schedule at existing panels with new branch circuits. Panel schedules shall be typed, hand written panels schedules are not permitted.

2. Panel schedule shall include name and number of room branch circuit.
3. Provide new breakers in existing panelboards as required to serve new lighting, devices and equipment.
4. Where loads are removed from breakers and not reused for other equipment, mark breakers as spare.
5. Verify feeder size and capacity of panel is adequate for new loads served.

3.3 WIRE AND CABLE

A. Minimum size for lighting and power branch circuiting: #12 AWG

B. Neutral conductor to be provided for each phase conductor in branch circuits. No shared neutrals.

C. Splice only in accessible junction or outlet boxes. Splice in feeders and services are not permitted.

D. Provide equipment ground conductor for each branch circuit for grounding.

E. Wires shall be factory color coded by integral pigmentation. Colored plastic tape permitted on #6 AWG wire and larger where integral pigmentation is impractical.

F. All circuit conductors shall be identified with circuit number at all terminals, intermediate outlets, disconnect switches, circuit breakers, motor control centers, etc. Both ends of a given conductor shall be identified alike.

G. Label neutral at termination in panels with circuit number.

H. DO NOT install wires of different voltage systems in the same raceway, box, gutter or other enclosure.

I. Color code conductors to designate neutral, phase, and ground as follows:

Phase	Voltage (208Y/120)	Voltage (480Y/277)
Neutral	White*	Gray*
A	Black	Brown
B	Red	Orange
C	Blue	Yellow
Equipment Ground	Green	Green
Isolated Ground	Green with Yellow Stripe	Green with Yellow Stripe
*Each with identifiable color strip		

3.4 SURFACE RACEWAYS

A. Routing of surface raceways.
1. In general route surface metal raceways at locations to minimize the architectural impact to the surface.
2. Avoid installing surface raceways across open wall or ceilings.
3. Install runs adjacent to architectural elements.
4. Install vertical runs on wall adjacent to door/window frames, casework or adjacent to inside corners where available.
5. All maintenance access ways shall be maintained.

B. Use flat-head screws to fasten channel to surfaces.

C. Mount plumb and level.

D. Use suitable insulating bushings and inserts at connections to outlets and corner fittings.

E. Maintain grounding continuity between raceway components to provide continuous grounding path.

F. Provide powered system furniture whip connections where indicated on Drawings.

3.5 RACEWAYS

A. EMT shall be used for indoor above grade applications and exterior locations where not subject to severe physical damage.

B. Wiring shall be routed in conduit from panelboards to junction boxes and between junction boxes.

C. Use of AC, MC or BX cable is not permitted.

D. Flex conduit shall be used only for final connection to any rotating or vibrating equipment. Maximum flexible conduit length: 6 feet.

E. Minimum raceway size: 3/4 inch.

3.6 RECEPTACLES AND EQUIPMENT

A. Receptacle location and types shall be provided as indicated on Drawings. Refer to mechanical for heating, cooling, and water heating equipment.

B. All receptacles shall be installed with ground connection down.

C. Device to include appropriate outlet box, cover, wall plate and other necessary installation materials for a complete operating outlet.

D. Mount switches 48 inches (to top of box) above floor unless otherwise noted on drawings.

E. Mount receptacles vertically at 18 inches (to top of outlet) above finished floor. Verify exact height and orientation with Architect prior to rough-in.

F. When mounting receptacles above bench or counter coordinate mounting height with Architectural prior to rough-in.

G. Grounding: Install a separate green or bare wire between the receptacle strap grounding screw and screw into the outlet box. Self-grounding strap not approved as grounding means.

H. Coordinate connection requirements of powered systems furniture with Architect prior to rough-in.

I. Provide connections for all equipment within the project. Provide overcurrent protection and disconnecting means for each item of equipment in accordance with Codes.

3.7 LIGHTING

A. Refer to Architectural Reflected Ceiling Plans for exact fixture locations with respect to ceiling construction.

B. Lighting will generally consist of relocation of existing luminaires.

C. Lighting levels shall conform to IES standards.

D. Suspended Ceiling Support:
   1. Positively attach all light fixtures to the suspended ceiling system. The attachment device shall have a capacity of 150% of the lighting fixture weight acting in any direction.
   2. Support grid with No. 12 minimum gage hangers attached to the grid members within 3 inches of the corner of each fixture, attached to structure above.
   3. Attach two No. 12 minimum hangers from the fixture housing to the structure above. These wires may be slack.
   4. Where suspended fixtures do not align with grid, provide “bridging” above grid and support from structure.
   5. Support pendant-hung lighting fixtures directly from the structure above with No. 9 minimum wire or approved alternate support.

3.8 LIGHTING CONTROLS

A. System shall be installed as indicated on Drawings.

B. Equipment shall be installed per manufacturer’s printed instructions.

C. Motion sensors shall be located and sentivity settings adjusted to provided full coverage of spaces where installed.

3.9 ELECTRICAL IDENTIFICATION

A. Zones systems shall be clearly defined and labeled.

B. Provide engraved nameplates on all disconnect switches. Identification shall include circuit number and panel name.

C. Install nameplates parallel to equipment lines.

D. Use adhesive film labels for identification of wall switches and receptacles. Identification shall include panel name and circuit number. Letter height shall be 1/8 inch.

E. Identify each junction box with complete system description. Examples: Fire alarm, Telephone, 480V system, 208V system.
   1. Method of identification: Neat hand lettering with permanent black marker, engraved nameplates or adhesive film labels.

F. Paint fire alarm junction boxes and covers red and label “FIRE ALARM” prior to installation.

3.10 COMMUNICATIONS HORIZONTAL CABLING

A. Cabling:
   1. Provide pull cord (nylon, 1/8” minimum) co-installed with all cable installed in any conduit.
   2. Where J-hook or trapeze system is used to support cable bundles all horizontal cables shall be supported at a maximum of 48-inch intervals. At no point shall cables rest on light fixtures, acoustic ceiling grids, panels, conduits, sprinkler pipe, water pipe, and or HVAC system ducting.
   3. Cable shall be installed above fire-sprinkler systems and shall not be attached to the system or any ancillary equipment or hardware. The cable system and support hardware shall be installed such that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.
   4. Cables shall not be attached to ceiling grid or lighting fixture wires. Where support for horizontal cable is required, the contractor shall install appropriate carriers to support the cabling.
   5. All cabling shall be tested in accordance with most current OSU Construction Standards.

B. Work Area Outlets:
   1. Data jacks, unless otherwise noted in Drawings, shall be located in the right side position of each faceplate.
   2. Voice jacks shall occupy the left position(s) on the faceplate.

3.11 FIRE ALARM

A. Existing building fire alarm system shall remain operational throughout the duration of the renovation project.

B. Verify existing notification appliance circuits have capacity to serve new devices in renovated space. Provide notification appliance power supply as required.

C. All wiring shall be installed in raceway. Minimum raceway size: 3/4" inch.

D. Provide a minimum 4-inch square box for junction and terminations.

E. Provide labeling of all devices and appliances with their respective system address. Labels shall be machine printed and be visible from the floor with magnification.

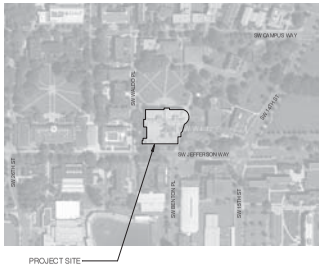
F. Provide labeling of all conductors and cables at termination points in panels, cabinets and junction boxes. Labels shall be machine printed.

G. Provide testing per manufacturer’s instructions.

END OF SECTION

VALLEY LIBRARY 3RD & 4TH FLOOR TI

REPRESENTATIONAL IMAGE. IMAGE SHOWN MAY NOT BE AN EXACT REPRESENTATION OF ACTUAL DESIGN AND CONSTRUCTION.



1 VICINITY MAP
NTS

PROJECT DIRECTORY

CLIENT
OREGON STATE UNIVERSITY
CAPITAL PLANNING & FACILITIES SERVICES
CORVALLIS, OREGON
P: 541.737.2119
CONTACT: DAVID JACOBS, NCARB

ARCHITECT
HENNEBERY EDDY ARCHITECTS, INC
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P: 503.227.4860
F: 503.227.4920
CONTACT: DOUG REIMER, AIA

MEP - BASIS OF DESIGN
SYSTEMS WEST ENGINEERS, INC
725 A STREET
SPRINGFIELD, OREGON 97477
P: 541.342.7210
CONTACT: PAUL FOOKS, PE

DRAWING SHEET INDEX

COVER SHEET

ARCHITECTURAL
AG00 GENERAL NOTES
AG01 CODE ANALYSIS & FIRE/LIFE SAFETY PLANS
A100 DEMOLITION PLAN - THIRD FLOOR
A101 DEMOLITION PLAN - FOURTH FLOOR
A102 DEMOLITION CEILING PLAN - THIRD FLOOR
A103 DEMOLITION CEILING PLAN - FOURTH FLOOR
A200 FLOOR PLAN - THIRD FLOOR
A201 FLOOR PLAN - FOURTH FLOOR
A500 FINISH PLAN - THIRD FLOOR
A501 FINISH PLAN - FOURTH FLOOR
A600 REFLECTED CEILING PLAN - THIRD FLOOR
A601 REFLECTED CEILING PLAN - FOURTH FLOOR
A700 INTERIOR ELEVATIONS
A900 PARTITION TYPES AND DETAILS
A901 CEILING DETAILS
A902 DOOR SCHEDULE & DETAILS
A930 FURNITURE PLAN - THIRD FLOOR
A931 FURNITURE PLAN - FOURTH FLOOR

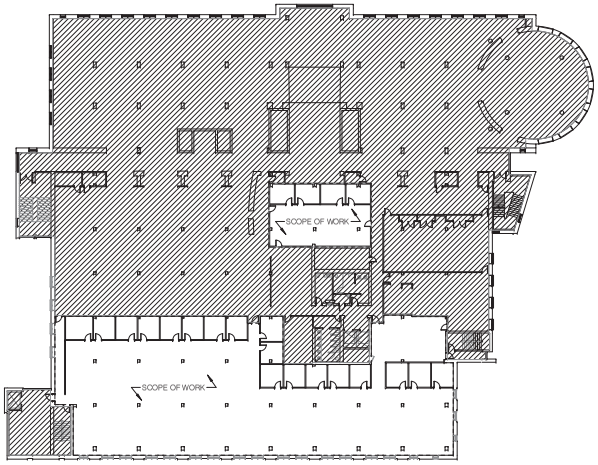
DRAWING SHEET INDEX - BOD*

*BASIS OF DESIGN (BOD) BRIDGING DOCUMENTS.
DESIGN BUILD DEFERRED SUBMITTALS WILL BE SUBMITTED TO THE CITY BY THE CONTRACTOR.

PLUMBING
P001 PLUMBING LEGEND & GENERAL NOTES
P101 PLUMBING DEMOLITION - THIRD FLOOR
P102 PLUMBING DEMOLITION - FOURTH FLOOR
P111 PLUMBING PLAN - THIRD FLOOR
P112 PLUMBING PLAN - FOURTH FLOOR

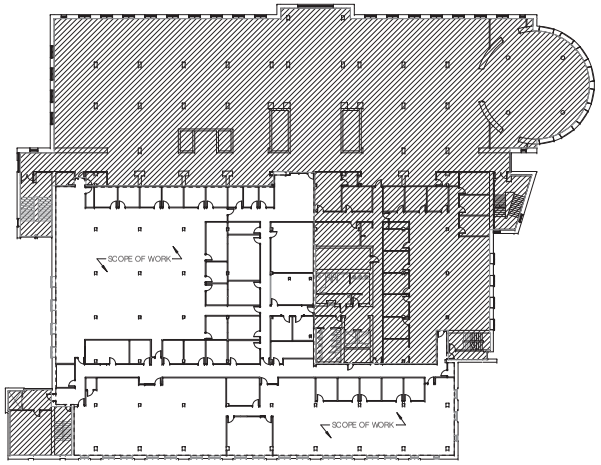
MECHANICAL
M001 MECHANICAL LEGEND & GENERAL NOTES
M101 MECHANICAL DEMOLITION - THIRD FLOOR
M102 MECHANICAL DEMOLITION - FOURTH FLOOR
M121 AIR DISTRIBUTION PLAN - THIRD FLOOR
M122 AIR DISTRIBUTION PLAN - FOURTH FLOOR
M161 ZONING PLAN - THIRD FLOOR
M162 ZONING PLAN - FOURTH FLOOR
*M2.3 FOR REFERENCE ONLY - NOT TO SCALE
*M2.4 FOR REFERENCE ONLY - NOT TO SCALE

ELECTRICAL
E001 ELECTRICAL LEGEND & GENERAL NOTES
E101 ELECTRICAL DEMOLITION - THIRD FLOOR
E102 ELECTRICAL DEMOLITION - FOURTH FLOOR
E111 LIGHTING PLAN - THIRD FLOOR
E112 LIGHTING PLAN - FOURTH FLOOR
E121 POWER DISTRIBUTION - THIRD FLOOR
E122 POWER DISTRIBUTION - FOURTH FLOOR
E131 LOW VOLTAGE PLAN - THIRD FLOOR
E132 LOW VOLTAGE PLAN - FOURTH FLOOR



AREA NOT IN PROJECT SCOPE

2 SCOPE OF WORK DIAGRAM - THIRD FLOOR
1" = 30'-0"



AREA NOT IN PROJECT SCOPE

3 SCOPE OF WORK DIAGRAM - FOURTH FLOOR
1" = 30'-0"

DISCLAIMER:

INFORMATION PROVIDED BY CONSULTANTS CONTRACTUALLY ENGAGED BY OTHERS IS INCLUDED FOR CONVENIENCE ONLY, DOES NOT RELIEVE SAID CONSULTANTS FROM FULL RESPONSIBILITY AND LIABILITY FOR DEVIATIONS, ERRORS, OR OMISSIONS IN THE INFORMATION PROVIDED, AND DOES NOT GIVE RISE TO ANY CLAIMS BY OTHER PARTIES AGAINST, OR TRANSFER LIABILITY TO, HENNEBERY EDDY ARCHITECTS, INC.

HENNEBERY EDDY ARCHITECTS, INC. HAS REVIEWED SAID INFORMATION FOR GENERAL CONFORMANCE WITH THE ARCHITECTURAL DESIGN INTENT SOLEY TO SATISFY THE ARCHITECT'S OBLIGATIONS AS THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.

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503 227 4920 FAX
www.henneberyeddy.com

OREGON STATE UNIVERSITY

VALLEY LIBRARY 3RD & 4TH FLOOR TI
201 SW WALDO PL,
CORVALLIS, OR 97331

HEA Project no. 17050
Date: 9 October 2018
CONSTRUCTION SET

Drawn by: AN/DC
Checked by: DR
Sheet:

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COVER

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TYPICAL MOUNTING HEIGHTS

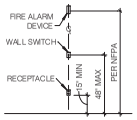
ACCESSORIES ABBREVIATIONS:

DCS	DIAPER CHANGING STATION
DF	DRINKING FOUNTAIN
FEC	FIRE EXTINGUISHER CABINET
HD	HAND DRYER
GB	GRAB BAR
M	MIRROR
PTD	PAPER TOWEL DISPENSER
SCD	SEAT COVER DISPENSER
SD	SOAP DISPENSER
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
TPD	TOILET PAPER DISPENSER
WR	WASTE RECEPTACLE

NOTE: DIMENSIONS NOTED ARE BASED ON UNOBSTRUCTED REACH RANGES DESCRIBED IN SECTION 308 OF THE ADAAG. IF AN ELEMENT FALLS WITHIN AN OBSTRUCTED AREA, DIMENSIONS MAY VARY AND SHOULD BE VERIFIED WITH OBSTRUCTED REACH RANGE REQUIREMENTS.

FIRE EXTINGUISHER UNIT WEIGHT LESS THAN 40 LBS.

FIRE EXTINGUISHER UNIT WEIGHT MORE THAN 40 LBS.



ELECTRICAL CONTROLS

GRAPHIC LEGEND

MATERIAL HATCHES

ALUMINUM (CUT)
ASPHALT (CUT)
BRICK & TILE (CUT)
CARPET
CMU (CUT)
CONCRETE (CUT)
CURTAIN
EARTH : COMPACTED FILL
EARTH : UNDISTURBED
GRAVEL : CRUSHED
GLASS (CUT)
GROUT / MORTAR
GYPSUM BOARD (CUT)
INSULATION, BATT
INSULATION, RIGID (CUT)
INSULATION - SPRAY FOAM
INSULATION - MINERAL FIBER BOARD
INSULATION - DENSE PACK CELLULOSE
PANELS; TACK, FABRIC WRAPPED (CUT)
PLASTIC (CUT)
STEEL (CUT)
STONE (CUT)
WOOD: FRAMING, BLOCKING
WOOD FINISH (CUT)
WOOD FINISH (FACE)
WOOD PANEL (FACE)
WOOD PANEL (CUT)

SYMBOLS

BREAKLINE
PIPE BREAK
PROPERTY LINE

PLAN WALLS

EXTERIOR WALLS & INTERIOR PARTITIONS
PARTIAL HEIGHT WALLS

ELEVATION SYMBOLS AND HATCHES

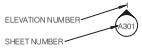
CLOCK
MECHANICAL, ELECTRICAL, TELECOM OR FIRE NOTIFICATION DEVICE
GLASS (ELEVATION VIEW)
FIRE EXTINGUISHER CABINET

ABBREVIATIONS

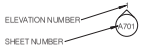
ACT	ACOUSTICAL CEILING TILE
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISH FLOOR
B.O.	BOTTOM OF
CJ	CONTROL JOINT
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
DEMO	DEMOLISH/DEMOLITION
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DS	DOWNSPOUT
(E)	EXISTING
EA	EACH
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
FD	FLOOR DRAIN
FF	FINISH FLOOR
FO	FACE OF
GA	GAGE
GALV	GALVANIZED
GYP BD	GYPSUM BOARD
HR	HOUR
HSS	HOLLOW STRUCTURAL SECTION
HVAC	HEATING, VENTILATING, AIR CONDITIONING
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OPH	OPPOSITE HAND
P.LAM	PLASTIC LAMINATE
PL	PLATE
PT	PRESSURE/PRESERVATIVE TREATED
RD	ROOF DRAIN
RO	ROUGH OPENING
SF	SQUARE FEET
SIM	SIMILAR
STC	SOUND TRANSMISSION CLASS
T&G	TONGUE AND GROOVE
TG	TEMPERED GLASS
T.O.	TOP OF
TYP	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT

TAG LEGEND

NOT ALL TAGS MAY BE USED



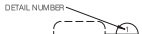
BUILDING EXTERIOR ELEVATION



BUILDING INTERIOR ELEVATION

BUILDING SECTION

WALL SECTION



DETAIL/ENLARGED PLAN REFERENCE

DETAIL REFERENCE

WINDOW TYPE

ELEVATION/SECTION DATUM HEIGHT

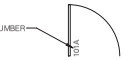
DATUM HEIGHT

WORK POINT

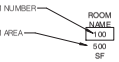
NORTH ARROW

BUILDING GRID DESIGNATION

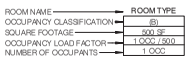
ADDENDUM REVISION NUMBER



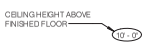
DOOR TAG



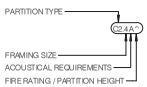
ROOM TAG



OCCUPANCY TAG



CEILING HEIGHT (AFF) TAG



PARTITION TYPE TAG

GENERAL NOTES

1. FOR APPLICABLE CODES AND STANDARDS REFER TO SHEET AG01.
2. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF OREGON 2014 STRUCTURAL SPECIALTY CODE; FEDERAL, CITY AND COUNTY ORDINANCES; AND APPLICABLE, HEALTH, PLUMBING, MECHANICAL, FIRE AND ELECTRICAL CODES.
3. CONFIRM ALL NEW AND EXISTING CONDITIONS WITH THE CONTRACT DOCUMENTS. NOTIFY ARCHITECT IMMEDIATELY IN WRITING OF ALL DISCREPANCIES OR CONFLICTS. DO NOT PROCEED WITH WORK IN THE AREA OF DISCREPANCY OR CONFLICT UNTIL DIRECTION IS GIVEN BY ARCHITECT. IF CONTRACTOR PROCEEDS WITHOUT DIRECTION FROM ARCHITECT, IT SHALL BE AT CONTRACTORS RISK AND CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CORRECTIVE ACTION.
4. THE CONTRACTOR SHALL ESTABLISH CLEAR UNDERSTANDING OF THE REQUIREMENTS OF THE PROJECT, SYSTEMS AND THEIR COMPONENTS PRIOR TO ORDERING MATERIALS.
5. THE CONTRACTOR SHALL PROVIDE SHORING, BRACING, SUPPORT AND PROTECTION AS REQUIRED.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION EFFORTS WITH THE OWNER'S REQUIREMENTS.
7. THE CONTRACTOR SHALL PROVIDE FOR DUST CONTROL THROUGHOUT AND SHALL PROVIDE TEMPORARY MEASURES TO VENTILATE AREAS DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION, AND SHALL ERADICATE THE BUILD-UP OF FUMES FROM FINISH MATERIALS AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL MAINTAIN SIX (6) AIR EXCHANGES PER HOUR UNLESS MORE STRINGENT OSHA, STATE OR LOCAL STANDARDS ARE TO BE ADHERED TO.
8. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER AND OWNER PROVIDED CONTRACTORS, IF ANY, AS REQUIRED TO IMPLEMENT THE SCOPE OF WORK.
9. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR LOCATING, IDENTIFYING, OR SPECIFYING MEANS OF REMOVAL OF ANY HAZARDOUS MATERIALS. HAZARDOUS MATERIAL TESTING SHALL BE COMPLETED BY OWNER CONTRACTED CONSULTANT.
10. IN PERFORMING PROFESSIONAL SERVICES FOR THIS PROJECT, HENNEBERY EDDY ARCHITECTS, INC. ISSUES, EXPRESSES OR IMPLIES NO WARRANTIES OR CERTIFICATIONS.
11. COORDINATE FLOOR, WALL AND CEILING FIRE RATINGS WITH CODE COMPLIANCE SHEETS. ALL PENETRATIONS THROUGH RATED ASSEMBLIES TO BE SEALED WITH AN APPROPRIATE FIRESTOP SYSTEM WITH AN EQUAL OR GREATER RATING THAN THE PENETRATED ASSEMBLY.
12. INFORMATION RELATING TO THE EXISTING BUILDING IS BASED ON OWNER PROVIDED DOCUMENTS AND LIMITED FIELD MEASUREMENTS. ACTUAL CONDITIONS MAY VARY AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND PROCUREMENT OF MATERIALS OR ITEMS.
13. SYSTEMS AND CONDITIONS HIDDEN FROM VIEW ARE BASED ON OWNER PROVIDED DOCUMENTS, HAVE NOT BEEN VERIFIED BY THE ARCHITECT, AND ARE PROVIDED FOR REFERENCE PURPOSES ONLY. ALL SYSTEMS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR.
14. THE CONTRACTOR SHALL PATCH AND REPAIR ELEMENTS TO MATCH EXISTING ADJACENT CONDITIONS WHERE ITEMS WERE REMOVED AND IN AREAS DAMAGED DURING DEMOLITION.
15. THE CONTRACTOR SHALL CLEAN, PLUG, PATCH AND REPAIR ALL MATERIALS AND SURFACES AS REQUIRED TO PREPARE THEM FOR NEW WORK.

DEFERRED/DESIGN-BUILD SUBMITTAL REQUIREMENTS

1. THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING DEFERRED/DESIGN-BUILD SUBMITTALS:
   - 1.1. PLUMBING
   - 1.2. FIRE SPRINKLER SYSTEM MODIFICATIONS
   - 1.3. MECHANICAL
   - 1.4. ELECTRICAL
2. THE PORTIONS OF THE PROJECT LISTED ABOVE WILL BE CONSTRUCTED USING A DESIGN-BUILD APPROACH. THE DRAWINGS INCLUDED IN THIS PACKAGE ARE PRELIMINARY TO PROVIDE A BASIS FOR PLANNING AND BIDDING.
3. ACTUAL DRAWINGS, DETAILS, AND CALCULATIONS FOR THE PORTIONS OF WORK LISTED AS DEFERRED/DESIGN-BUILD SUBMITTALS ARE TO BE PROVIDED BY THE CONTRACTOR AND SHALL INCLUDE ALL WORK REQUIRED TO IMPLEMENT THE ENTIRE PROJECT SCOPE RELATED TO THESE PORTIONS AND COORDINATION WITH OTHER WORK.
4. DEFERRED/DESIGN-BUILD SUBMITTAL INFORMATION REQUIRES REVIEW OF BOTH ARCHITECT/ ENGINEER AND APPROVAL BY THE AUTHORITY HAVING JURISDICTION.
5. PERMIT ACQUISITION FOR THE DEFERRED/DESIGN-BUILD SCOPE OF WORK SHALL BE PROVIDED BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL VERIFY ALL UTILITIES AND EQUIPMENT, AND COORDINATE EQUIPMENT REQUIREMENTS AND LOCATIONS.
7. THE PROCEDURE FOR DEFERRED/DESIGN-BUILD SUBMITTAL IS AS FOLLOWS:
   - 7.1. INITIAL DESIGN REVIEW SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR PRELIMINARY REVIEW.
   - 7.2. FINAL DESIGN, ENGINEERING, AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW. SUCH DRAWINGS SHALL BE STAMPED AND SIGNED BY AN ENGINEER WHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
   - 7.3. FOLLOWING THE ARCHITECTS REVIEW, THE CONTRACTOR SHALL SUBMIT TO THE AUTHORITY HAVING JURISDICTION FOR PERMIT APPROVAL AND ACQUISITION.
   - 7.4. PROCUREMENT, FABRICATION, AND OTHER WORK RELATED TO DEFERRED/DESIGN-BUILD SUBMITTAL SHALL NOT BE PERFORMED UNTIL THE DEFERRED/DESIGN-BUILD SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND APPROVED BY THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION.

Oregon State University

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PORTLAND, OREGON
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OREGON STATE UNIVERSITY

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CORVALLIS, OR 97331

HEA Project no. **17050**
Date: **9 October 2018**
CONSTRUCTION SET
Revisions:

Drawn by: AN/DC
Checked by: DR
Sheet: **GENERAL NOTES**

CONSTRUCTION SET

AG00

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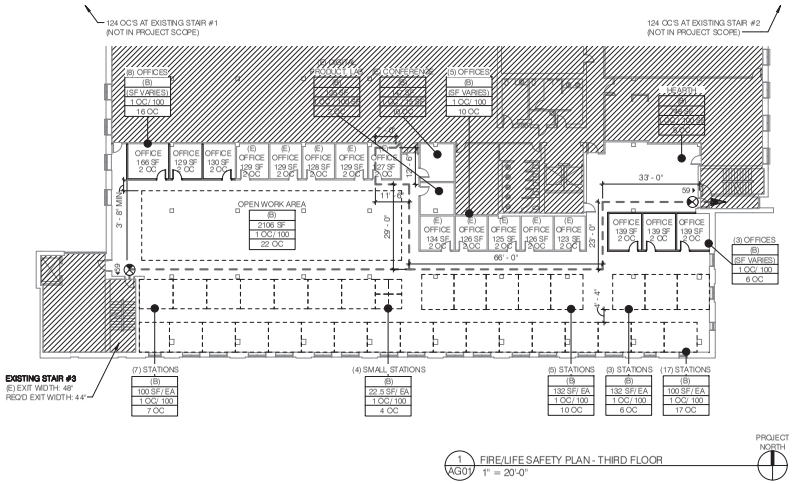
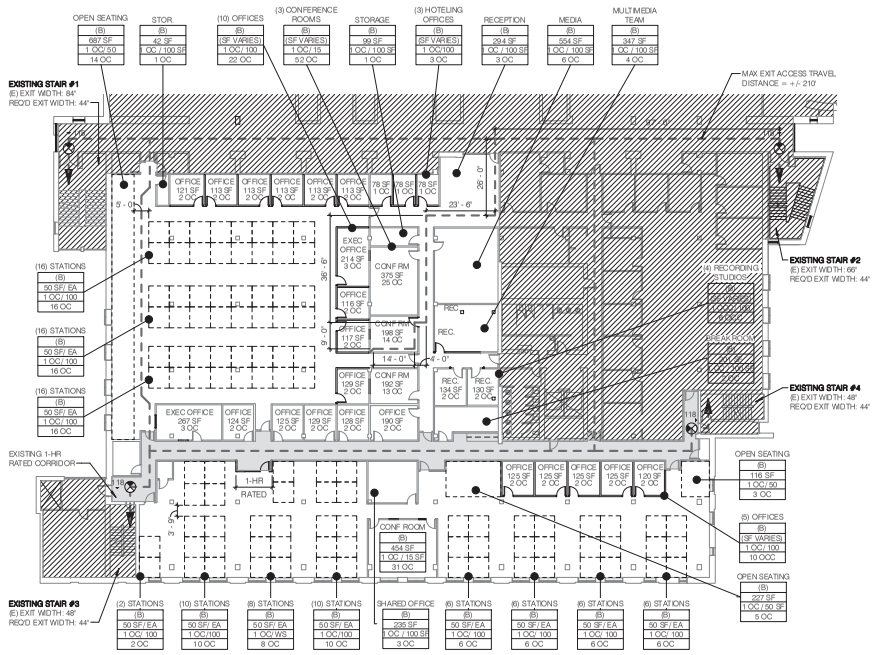


1 AG01 FIRE/LIFE SAFETY PLAN - THIRD FLOOR
1" = 20'-0"



2 AG01 FIRE/LIFE SAFETY PLAN - FOURTH FLOOR
1" = 20'-0"

PROJECT DESCRIPTION

PROJECT INCLUDES: TENANT IMPROVEMENTS FOR ADMINISTRATIVE PORTIONS OF THE 3RD AND 4TH FLOORS OF VALLEY LIBRARY AT 201 SW WALDO PLACE ON THE OREGON STATE UNIVERSITY CAMPUS.

SITE & ZONING INFORMATION

PROJECT ADDRESS:	201 SW WALDO PLACE, CORVALLIS, OR 97331
LEGAL DESCRIPTION:	N/A
TAX MAP/PARCEL #:	N/A
SITE AREA:	N/A
ZONING OF SITE:	OSU - OREGON STATE UNIVERSITY, UNIVERSITY NEIGHBORHOOD OVERLAY
LAND USE CASE FILE:	N/A

APPLICABLE CODES AND STANDARDS

BUILDING CODE EDITION:	2014 OREGON STRUCTURAL SPECIALTY CODE 2014 OREGON MECHANICAL SPECIALTY CODE 2014 OREGON PLUMBING SPECIALTY CODE 2014 OREGON ELECTRICAL SPECIALTY CODE 2014 OREGON ENERGY EFFICIENCY SPECIALTY CODE 2014 OREGON FIRE CODE

BUILDING CONSTRUCTION DATA

CONSTRUCTION TYPE:	TYPE I-A, NON-COMBUSTIBLE			
ALLOWABLE HEIGHT & BUILDING AREA:	**GROUP**	**BASIC ALLOWABLE AREA (SF)**	**BASIC ALLOWABLE HEIGHT (STORIES)**	**BASIC ALLOWABLE HEIGHT (FEET)**
	B	UNLIMITED	UNLIMITED	UNLIMITED

BUILDING OCCUPANCY DATA

OCCUPANCY GROUPS:		**GROUP**	**CODE DESCRIPTION**
THIRD FLOOR:	OFFICES	B	ACADEMIC SERVICES
FOURTH FLOOR:	OFFICES	B	ADACEMIC SERVICES
MIXED USE AND OCCUPANCY: (SECTION 508)	SINGLE OCCUPANCY BUILDING		
OCCUPANCY SEPARATION:	APPLY MOST RESTRICTIVE BETWEEN		REQUIRED SEPARATION (HOURS)
	B AND B		0
OCCUPANT LOAD:	REFERENCE CODE DIAGRAMS		

BUILDING FIRE PROTECTION & SUPRESSION

AUTOMATIC FIRE SPRINKLERS: SECTION 903	100% FIRE SPRINKLER ACTIVE FIRE SUPRESSION WITH RELOCATION OF EXISTING HEADS IN REVISED OFFICE AREAS.
FIRE ALARM AND DETECTION: SECTION 907	EXISTING FIRE ALARM SYSTEM TO BE MODIFIED TO ACCOMODATE TENANT IMRPOVEMENT. DEFERRED SUBMITTAL
PORTABLE FIRE EXTINGUISHERS: SECTION 906	PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED IN OCCUPANCIES AND LOCATIONS AS REQUIRED BY THE FIRE CODE. - MINIMUM RATED SINGLE EXTINGUISHER: TYPE 2-A - ONE EXTINGUISHER REQUIRED FOR EVERY 3,000 S.F. OF FLOOR AREA - MAXIMUM TRAVEL DISTANCE TO EXTINGUISHER: 75' - LOCATION OF EXTINGUISHERS WILL BE DETERMINED DURING WALK-THRU OF BUILDING WITH THE FIRE MARSHALL - NO PROPOSED REVISIONS

BUILDING EXITING

OCCUPANT LOAD: TABLE 1004.1.2	**USE**	**S.F. PER OCCUPANT**
	UNCONCENTRATED ASSEMBLY	15 SQFT (NET)
	READING ROOMS	50 SQFT (GROSS)
	BUSINESS AREAS	100 SQFT (GROSS)
MEANS OF EGRESS WIDTH: SECTION 1005	STAIRWAYS: 0.3 INCHES PER OCCUPANT OTHER COMPONENTS: 0.2 INCHES PER OCCUPANT	
STAIRWAYS: SECTION 1009	MINIMUM WIDTH 44" (GREATER THAN 50 OCCUPANTS) FLOOR 3 408 x .3 = 122.4", 122.4"/4 = 30.6" (30.6"<44") FLOOR 4 520 x .3 = 156", 156"/4 = 39" (39"<44")	
EXIT SIGNS:	EXISTING	
EGRESS ILLUMINATION: SECTION 1006	EXISTING. EMERGENCY EGRESS LIGHTING TO BE A MINIMUM OF 1 FOOT CANDLE AT FLOOR LEVEL FOR A MINIMUM DURATION OF 90 MINUTES AND TO ILLUMINATE A MINIMUM 36 INCH WIDE PATH (32 INCHES AT DOORS).	
COMMON PATH OF TRAVEL: 1014.3	MAXIMUM DISTANCE OF COMMON PATH OF TRAVEL (TO POINT OF EXIT OPTIONS MEASURED IN VECTORS) : 100' (SPRINKLER INCREASE)	
EXIT ACCESS: SECTION 1014	**NUMBER OF REQUIRED EXITS:** **FLOOR** **OCCUPANTS** **EXITS REQUIRED** FLOOR 3 TOTAL: 366 OC 4 (4 EXISTING) • AREA NOT IN SCOPE: 248 OC (NO CHANGE) • AREA WITHIN SCOPE: 118 OC (PREV: 94 OC; +24) FLOOR 4 TOTAL: 472 OC 4 (4 EXISTING) • AREA NOT IN SCOPE: 206 OC (NO CHANGE) • AREA WITHIN SCOPE: 266 OC (PREV: 195 OC; +71) **GROUP** **MAX DISTANCE ALLOWED** **MAX DISTANCE PROVIDED** FLOOR 3 300' 182' FLOOR 4 300' 210'	
CORRIDORS:	FLOOR 3: GROUP B - AUTOMATIC SPRINKLER SYSTEM, NO RATING REQUIRED FLOOR 4: GROUP B - AUTOMATIC SPRINKLER SYSTEM, NO RATING REQUIRED MINIMUM WIDTH = 44" DEAD ENDS FLOOR 3: 50' MAX. (GROUP B) FLOOR 4: 50' MAX. (GROUP B)	

ACCESSIBILITY

ACCESSIBLE DESIGN AND CONSTRUCTION STANDARDS SECTION 1109	THE HIGHEST OPERABLE PART OF ENVIRONMENTAL AND OTHER CONTROLS, DISPENSERS, ELECTRICAL AND COMMUNICATION SYSTEM RECEPTACLES ON WALLS AND OTHER OPERABLE EQUIPMENT SHALL BE WITHIN AT LEAST ONE OF THE REACH RANGES SPECIFIED IN SECTION 1109.2, AND NOT LESS THAN 36 INCHES ABOVE THE FLOOR. HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS, CABINETS, PLUMBING FIXTURES AND STORAGE FACILITIES SHALL HAVE LEVER OR OTHER SHAPE PERMITTING OPERATION BY WRIST OR ARM PRESSURE AND NOT REQUIRING TIGHT GRASPING, PINCHING OR TWISTING TO OPERATE. THE OPENING FORCE OF DOORS ALONG AN ACCESSIBLE ROUTE SHALL NOT EXCEED 8 1/2 POUNDS-FORCE FOR EXTERIOR DOORS AND 5 POUNDS-FORCE FOR INTERIOR DOORS.
BUILDING EXTERIOR ACCESSIBLE ROUTE:	EXISTING - NO CHANGE
BUILDING INTERIOR ACCESSIBLE ROUTE:	ENTIRE BUILDING IS ACCESSIBLE. AISLES ARE 44" MINIMUM.
CONTROLS AND HARDWARE	HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS, CABINETS, PLUMBING FIXTURES AND STORAGE FACILITIES SHALL HAVE LEVER OR OTHER SHAPE PERMITTING OPERATION BY WRIST OR ARM PRESSURE AND NOT REQUIRING TIGHT GRASPING, PINCHING OR TWISTING TO OPERATE.

CODE PLAN NOTES

1. AREAS SHOWN ON CODE SHEET AG01 ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE USED AS THE BASIS OF MATERIAL CALCULATIONS OR QUANTITIES.
2. WHERE RATED WALLS ARE SHORTER THAN COMPLETE RATING DEPICTION, RATE WALL THE SAME AS ADJOINING WALL.

CODE PLAN LEGEND

PLAN

- AREA NOT IN PROJECT SCOPE
- EXISTING 1-HR RATED CORRIDOR

EXIT

- direction
- SIGN FACE
- (E) EXIT SIGN - NO CHANGES PROPOSED
- 123 — OCCUPANT LOAD AT OPENING
- MAIN PATH OF EGRESS REQUIRING ILLUMINATION LEVEL NO LESS THAN 1 FOOT CANDLE (WIDTH BASED ON OCCUPANT NUMBER)

ROOM/OCCUPANCY LABEL

ROOM TYPE	← ROOM NAME
(B)	← OCCUPANCY CLASSIFICATION
150 SF	← SQUARE FOOTAGE
1 OC / 998	← OCCUPANCY LOAD FACTOR
Occ Count	← NUMBER OF OCCUPANTS

OTHER LABELS

- ✳ NOT NORMALLY OCCUPIED/ NOT INCLUDED IN THE NET LOAD CALCULATION

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CODE ANALYSIS & FIRE/LIFE SAFETY PLANS

AG01

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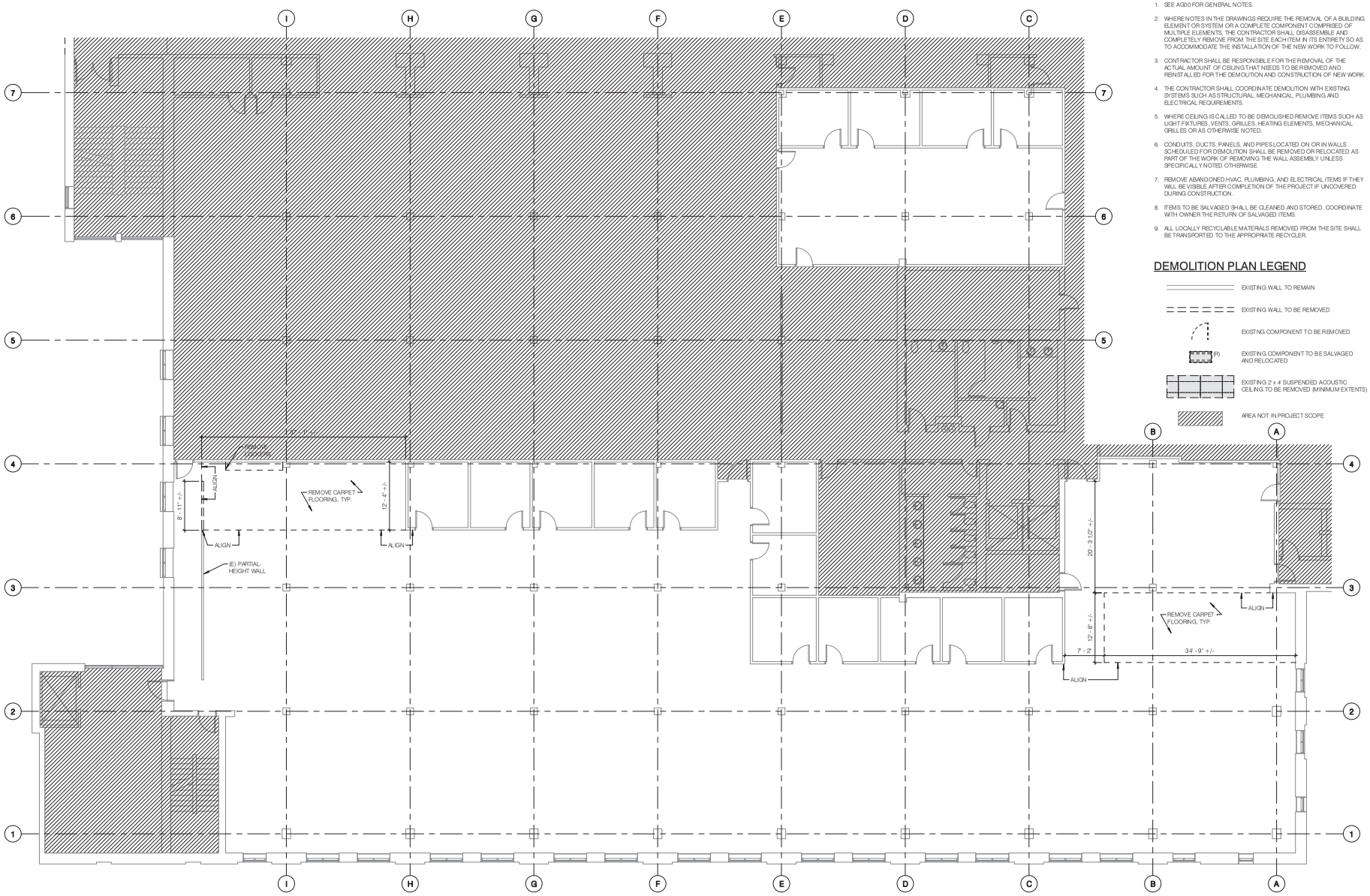

DEMOLITION PLAN NOTES

1. SEE A000 FOR GENERAL NOTES.
2. WHERE NOTES IN THE DRAWINGS REQUIRE THE REMOVAL OF A BUILDING ELEMENT OR SYSTEM OR A COMPLETE COMPONENT COMPRISED OF MULTIPLE ELEMENTS, THE CONTRACTOR SHALL DISASSEMBLE AND COMPLETELY REMOVE FROM THE SITE EACH ITEM IN ITS ENTIRETY SO AS TO ACCOMMODATE THE INSTALLATION OF THE NEW WORK TO FOLLOW.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE ACTUAL AMOUNT OF CEILING THAT NEEDS TO BE REMOVED AND REINSTALLED FOR THE DEMOLITION AND CONSTRUCTION OF NEW WORK.
4. THE CONTRACTOR SHALL COORDINATE DEMOLITION WITH EXISTING SYSTEMS SUCH AS STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL REQUIREMENTS.
5. WHERE CEILING IS CALLED TO BE DEMOLISHED REMOVE ITEMS SUCH AS LIGHT FIXTURES, VENTS, GRILLES, HEATING ELEMENTS, MECHANICAL GRILLES OR AS OTHERWISE NOTED.
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DEMOLITION PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE REMOVED
- EXISTING COMPONENT TO BE REMOVED
- (R) EXISTING COMPONENT TO BE SALVAGED AND RELOCATED
- EXISTING 2' x 4' SUSPENDED ACOUSTIC CEILING TO BE REMOVED (MINIMUM EXTENTS)
- AREA NOT IN PROJECT SCOPE

1 / A100 DEMOLITION PLAN - THIRD FLOOR
1/8" = 1'-0"

PROJECT NORTH

0 2 4 8 16

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DEMOLITION PLAN - THIRD FLOOR

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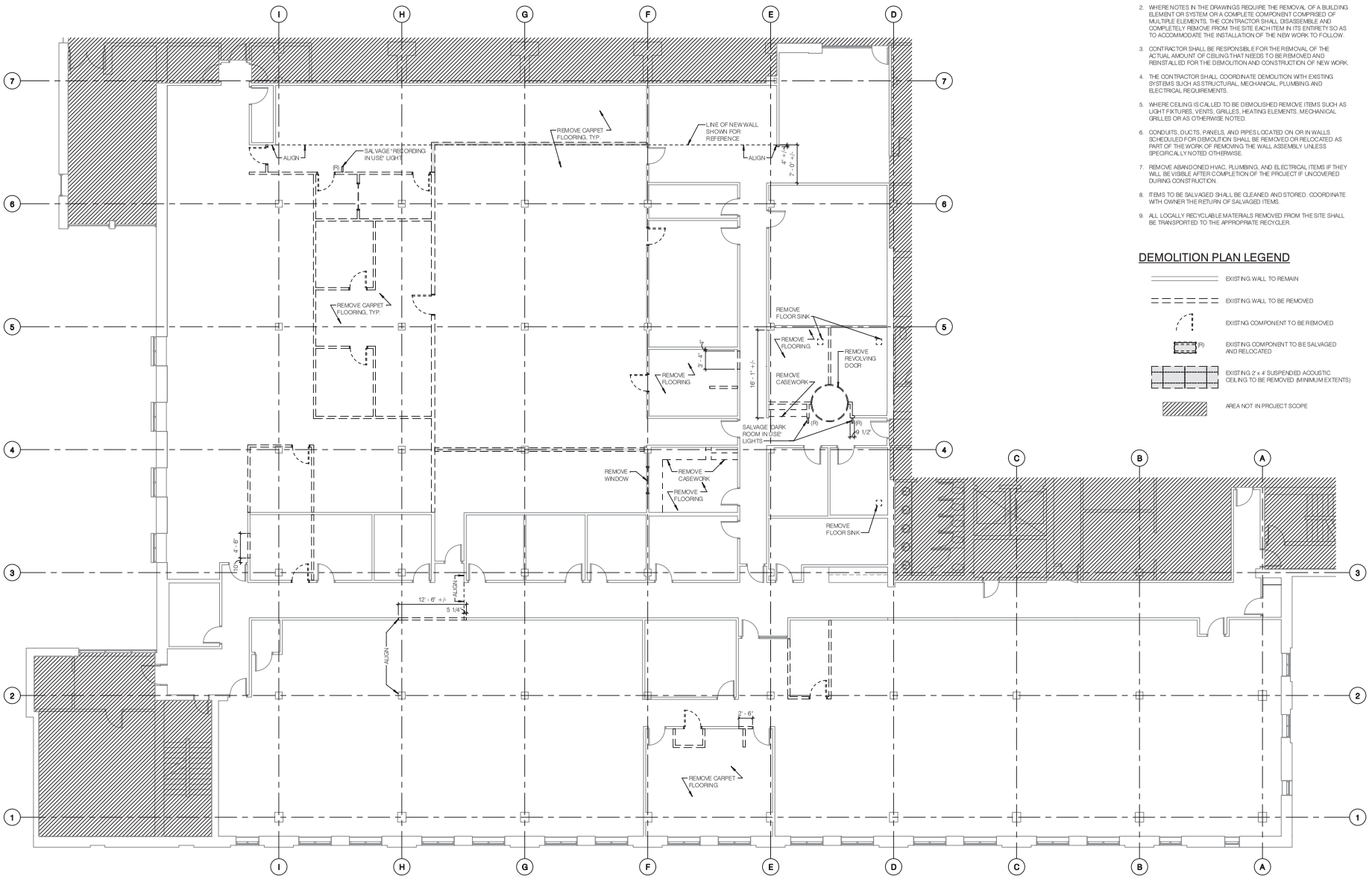

DEMOLITION PLAN NOTES

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- AREA NOT IN PROJECT SCOPE

1 A101 DEMOLITION PLAN - FOURTH FLOOR
1/8" = 1'-0"

PROJECT NORTH

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DEMOLITION PLAN - FOURTH FLOOR

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1 / A102 DEMOLITION RCP - THIRD FLOOR
1/8" = 1'-0"

PROJECT NORTH

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DEMOLITION CEILING PLAN - THIRD FLOOR

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- EXISTING COMPONENT TO BE REMOVED
- (R) EXISTING COMPONENT TO BE SALVAGED AND RELOCATED
- EXISTING 2' x 4' SUSPENDED ACOUSTIC CEILING TO BE REMOVED (MINIMUM EXTENTS)
- AREA NOT IN PROJECT SCOPE

1 / A103 DEMOLITION RCP - FOURTH FLOOR
1/8" = 1'-0"

PROJECT NORTH

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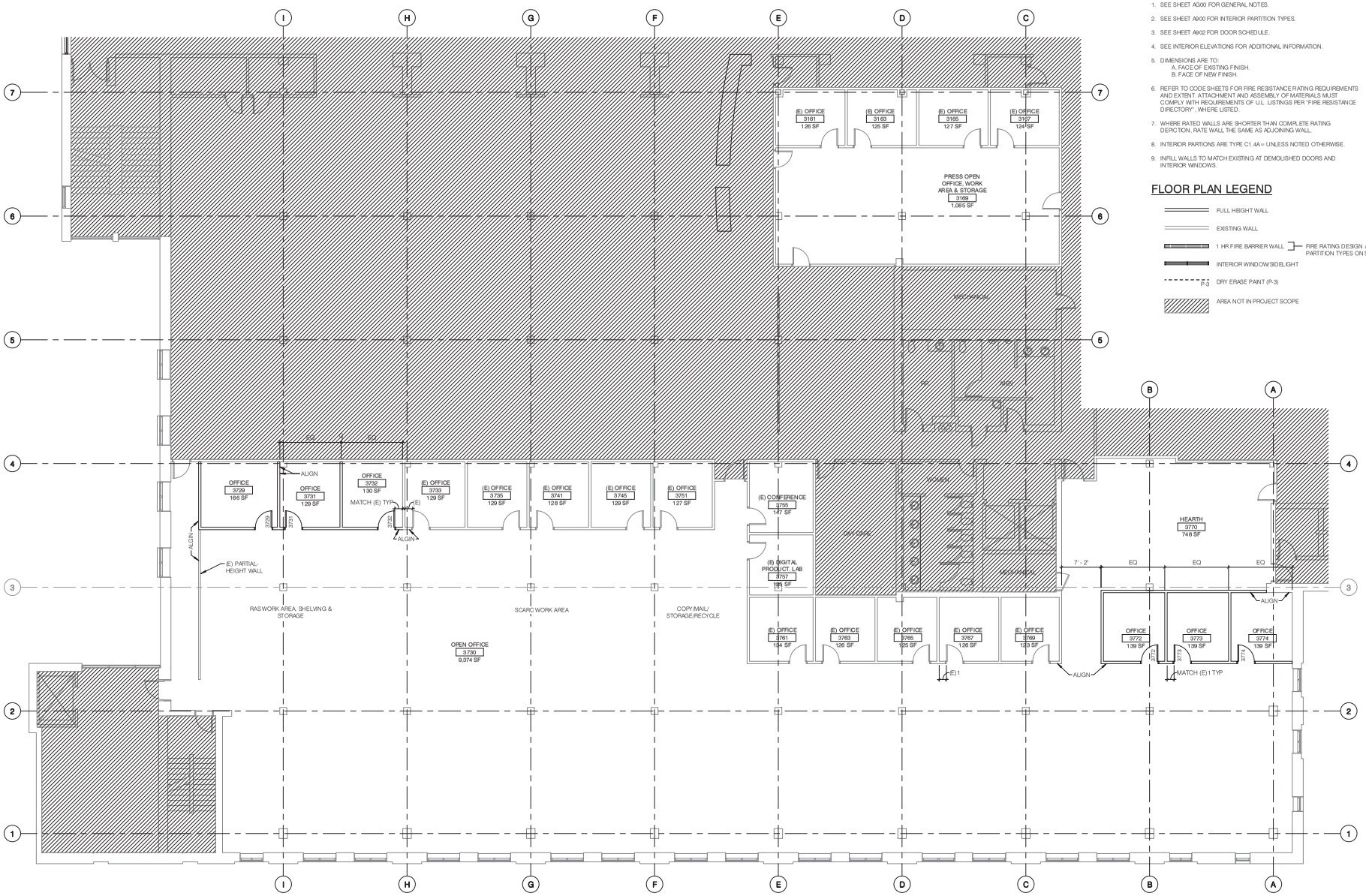

FLOOR PLAN NOTES

1. SEE SHEET AG00 FOR GENERAL NOTES.
2. SEE SHEET A900 FOR INTERIOR PARTITION TYPES.
3. SEE SHEET A902 FOR DOOR SCHEDULE.
4. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
5. DIMENSIONS ARE TO:
   A. FACE OF EXISTING FINISH.
   B. FACE OF NEW FINISH.
6. REFER TO CODE SHEETS FOR FIRE RESISTANCE RATING REQUIREMENTS AND EXTENT. ATTACHMENT AND ASSEMBLY OF MATERIALS MUST COMPLY WITH REQUIREMENTS OF U.L. LISTINGS PER "FIRE RESISTANCE DIRECTORY", WHERE LISTED.
7. WHERE RATED WALLS ARE SHORTER THAN COMPLETE RATING DERICTION, RATE WALL THE SAME AS ADJOINING WALL.
8. INTERIOR PARTIONS ARE TYPE C1.4A= UNLESS NOTED OTHERWISE.
9. INFILL WALLS TO MATCH EXISTING AT DEMOLISHED DOORS AND INTERIOR WINDOWS.

FLOOR PLAN LEGEND

- FULL HEIGHT WALL
- EXISTING WALL
- 1 HR FIRE BARRIER WALL — FIRE RATING DESIGN # PER PARTITION TYPES ON SHEET A900
- INTERIOR WINDOW/SIDELIGHT
- P-3 DRY ERASE PAINT (P-3)
- AREA NOT IN PROJECT SCOPE

1 A200 FLOOR PLAN - THIRD FLOOR
1/8" = 1'-0"

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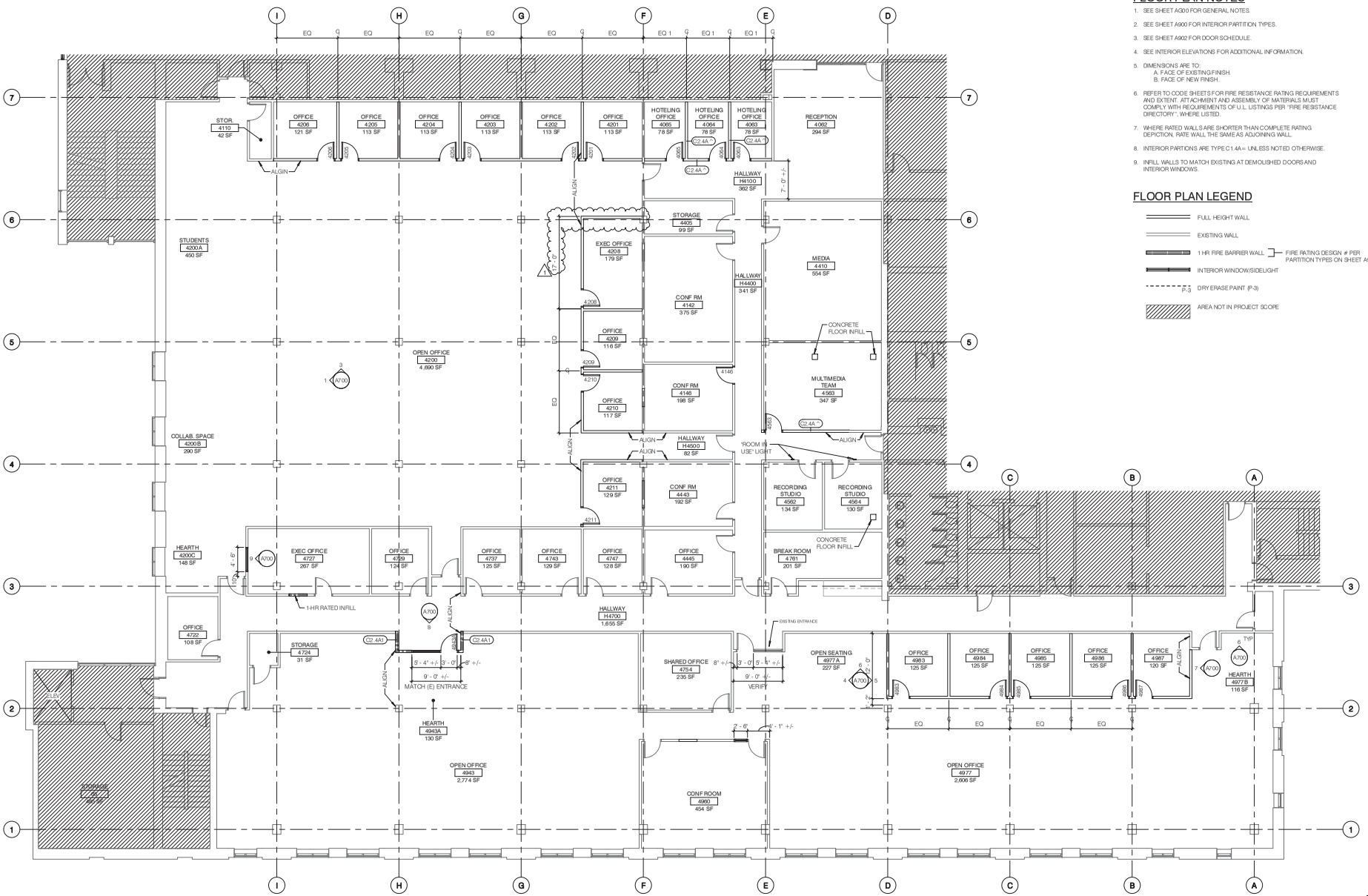

FLOOR PLAN NOTES

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- INTERIOR WINDOW/SIDELIGHT
- P-3 DRY ERASE PAINT (P-3)
- AREA NOT IN PROJECT SCOPE

1 A201 FLOOR PLAN - FOURTH FLOOR
1/8" = 1'-0"

PROJECT NORTH

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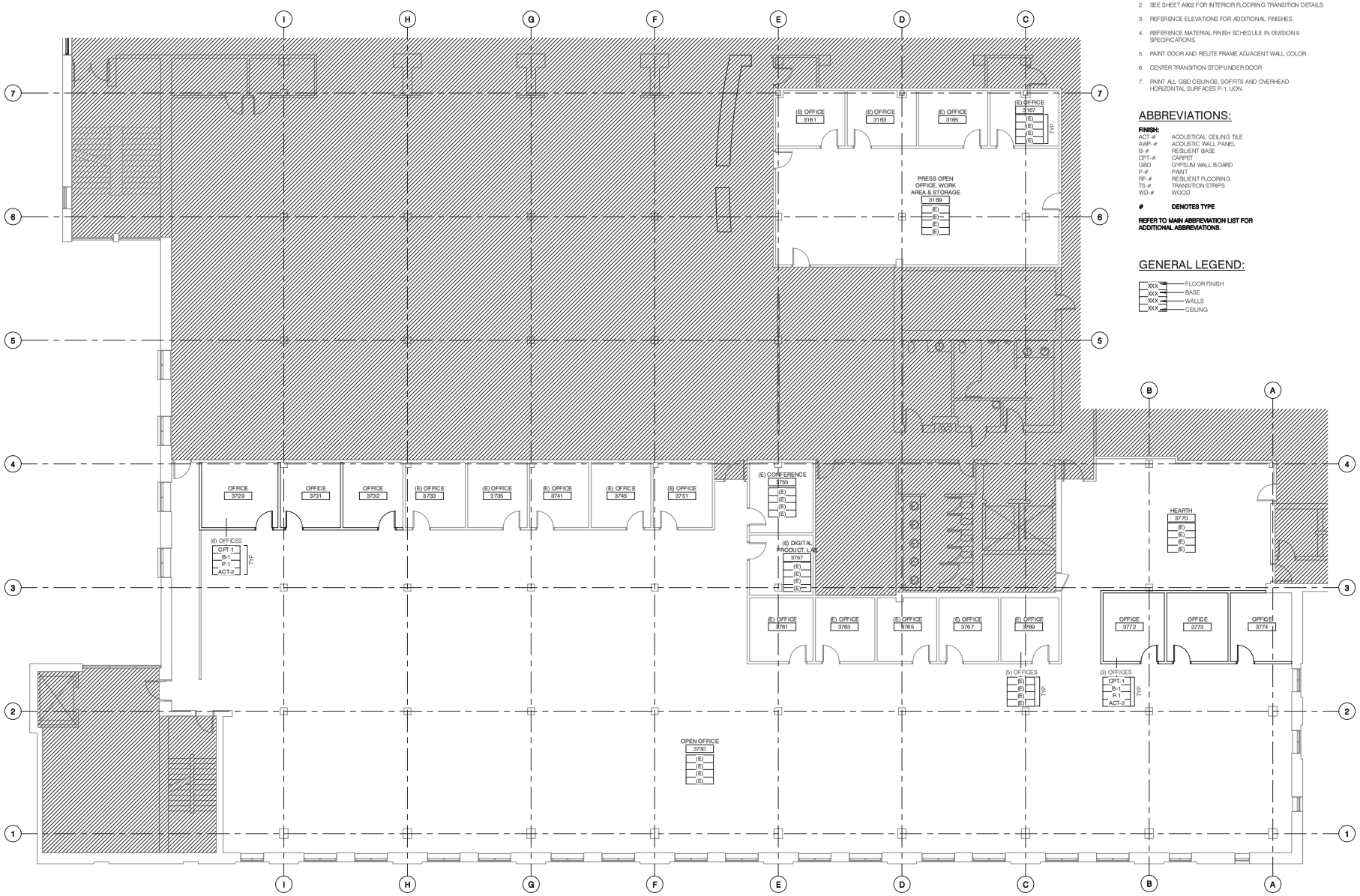

GENERAL NOTES: FINISH PLANS

1. SEE SHEET A000 FOR GENERAL NOTES.
2. SEE SHEET A902 FOR INTERIOR FLOORING TRANSITION DETAILS.
3. REFERENCE ELEVATIONS FOR ADDITIONAL FINISHES.
4. REFERENCE MATERIAL FINISH SCHEDULE IN DIVISION 9 SPECIFICATIONS.
5. PAINT DOOR AND RELITE FRAME ADJACENT WALL COLOR.
6. CENTER TRANSITION STOP UNDER DOOR.
7. PAINT ALL GBD CEILINGS, SOFFITS AND OVERHEAD HORIZONTAL SURFACES P-1, UON.

ABBREVIATIONS:

FINISH:

ACT-#	ACOUSTICAL CEILING TILE
AWP-#	ACOUSTIC WALL PANEL
B-#	RESILIENT BASE
CPT-#	CARPET
GBD	GYPSUM WALL BOARD
P-#	PAINT
RF-#	RESILIENT FLOORING
TS-#	TRANSITION STRIPS
WD-#	WOOD
#	**DENOTES TYPE**

REFER TO MAIN ABBREVIATION LIST FOR ADDITIONAL ABBREVIATIONS.

GENERAL LEGEND:

XXX FLOOR FINISH
XXX BASE
XXX WALLS
XXX CEILING

1 / A500 FINISH PLAN - THIRD FLOOR
1/8" = 1'-0"

0' 2' 4' 8' 16'

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Date: **9 October 2018**
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FINISH PLAN - THIRD FLOOR

CONSTRUCTION SET

A500

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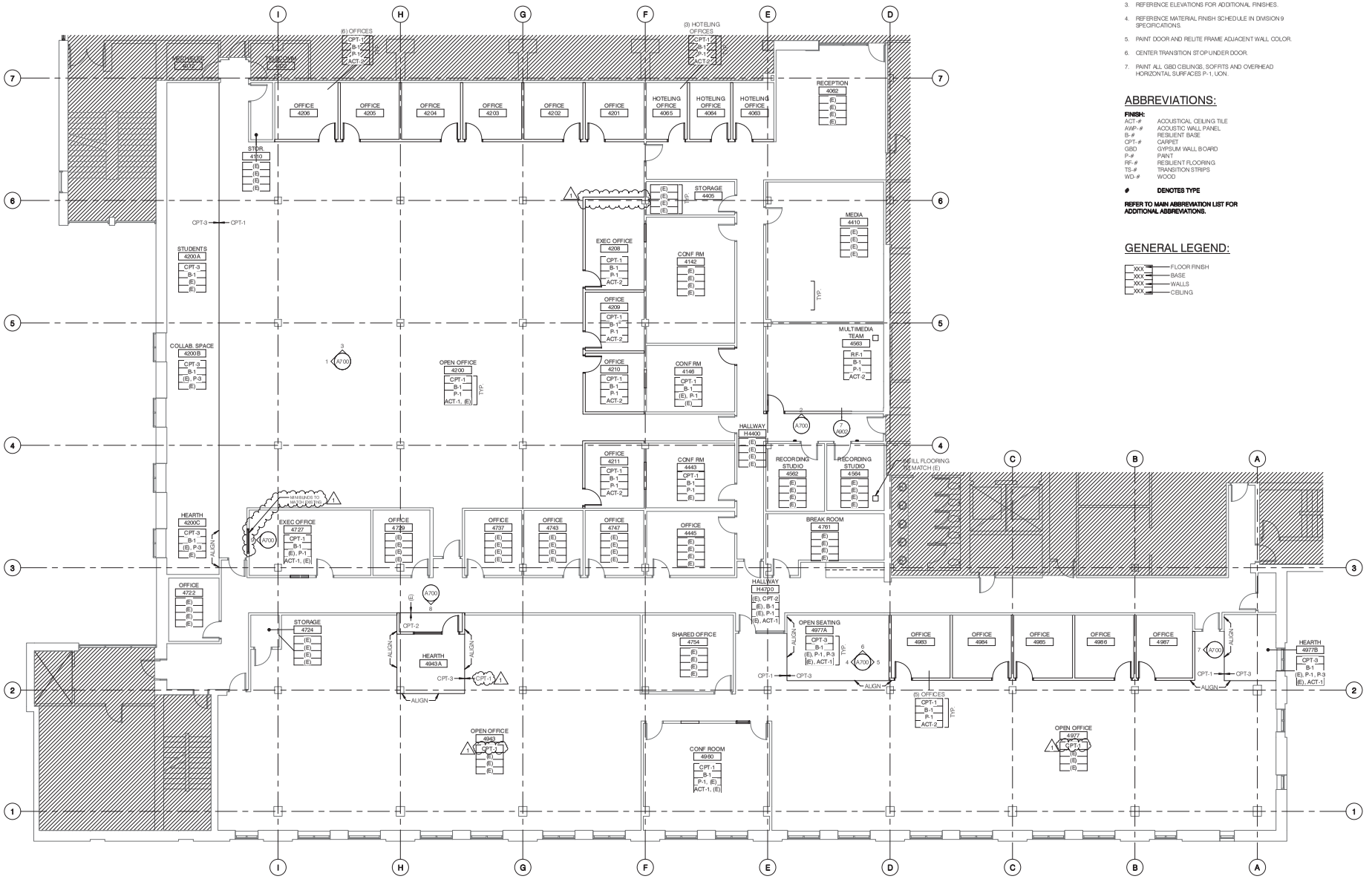

GENERAL NOTES: FINISH PLANS

1. SEE SHEET A000 FOR GENERAL NOTES.
2. SEE SHEET A902 FOR INTERIOR FLOORING TRANSITION DETAILS.
3. REFERENCE ELEVATIONS FOR ADDITIONAL FINISHES.
4. REFERENCE MATERIAL FINISH SCHEDULE IN DIVISION 9 SPECIFICATIONS.
5. PAINT DOOR AND RELITE FRAME ADJACENT WALL COLOR.
6. CENTER TRANSITION STOP UNDER DOOR.
7. PAINT ALL GBD CEILINGS, SOFFITS AND OVERHEAD HORIZONTAL SURFACES P-1, UON.

ABBREVIATIONS:

FINISH:

ACT-#	ACOUSTICAL CEILING TILE
AWP-#	ACOUSTIC WALL PANEL
B-#	RESILIENT BASE
CPT-#	CARPET
GBD	GYPSUM WALL BOARD
P-#	PAINT
RF-#	RESILIENT FLOORING
TS-#	TRANSITION STRIPS
WD-#	WOOD

 # DENOTES TYPE

REFER TO MAIN ABBREVIATION LIST FOR ADDITIONAL ABBREVIATIONS.

GENERAL LEGEND:

XXX FLOOR FINISH
XXX BASE
XXX WALLS
XXX CEILING

1 A501 FINISH PLAN - FOURTH FLOOR 1/8" = 1'-0"

PROJECT NORTH

0 2' 4' 8' 16'

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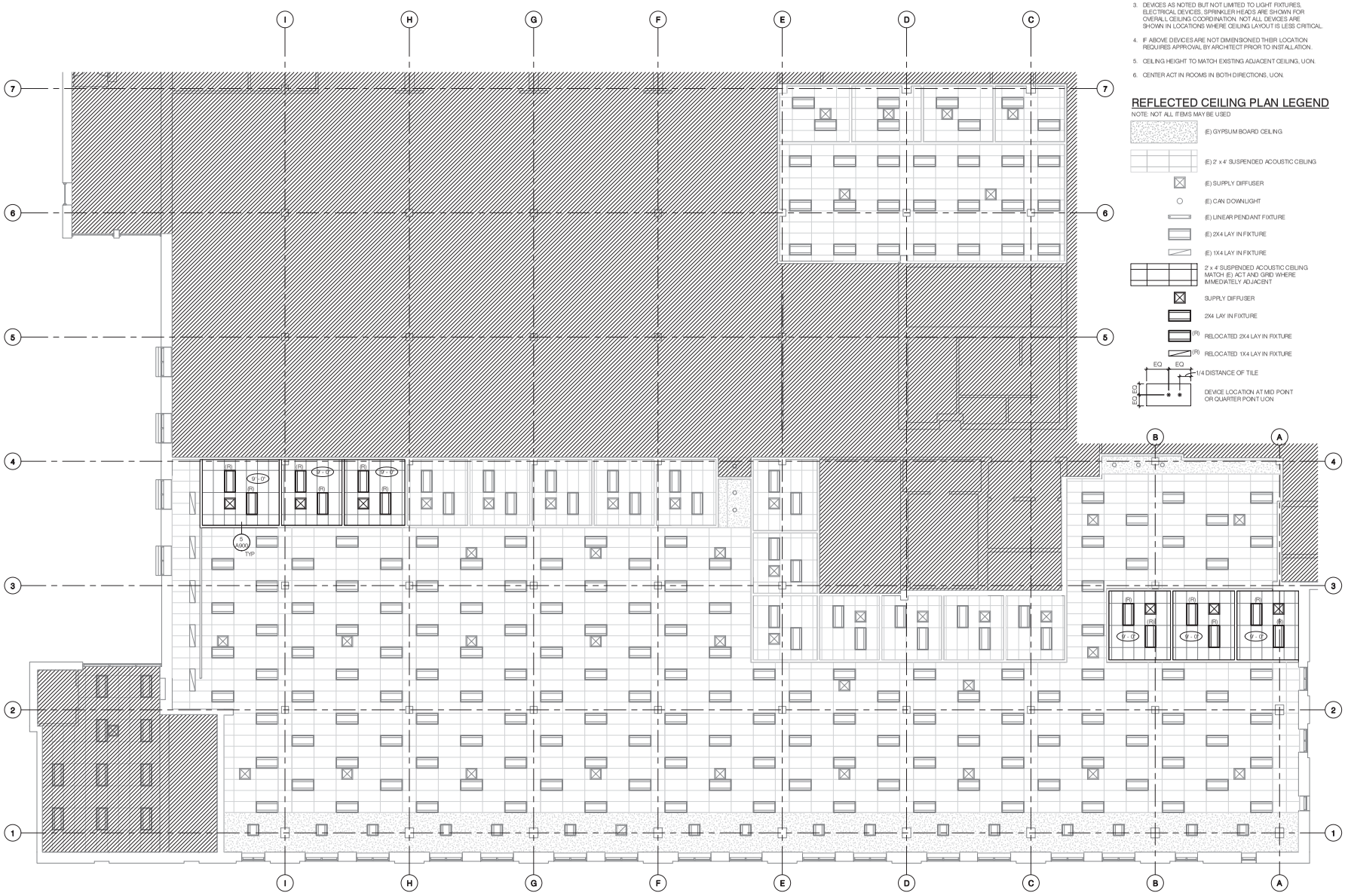

REFLECTED CEILING PLAN NOTES

1. SEE A000 FOR GENERAL NOTES.
2. EXISTING LIGHT FIXTURES TO REMAIN. REINSTALL EXISTING FIXTURES AS INDICATED. INFILL FIXTURES TO MATCH EXISTING.
3. DEVICES AS NOTED BUT NOT LIMITED TO LIGHT FIXTURES, ELECTRICAL DEVICES, SPRINKLER HEADS ARE SHOWN FOR OVERALL CEILING COORDINATION. NOT ALL DEVICES ARE SHOWN IN LOCATIONS WHERE CEILING LAYOUT IS LESS CRITICAL.
4. IF ABOVE DEVICES ARE NOT DIMENSIONED THEIR LOCATION REQUIRES APPROVAL BY ARCHITECT PRIOR TO INSTALLATION.
5. CEILING HEIGHT TO MATCH EXISTING ADJACENT CEILING, U.O.N.
6. CENTER ACT IN ROOMS IN BOTH DIRECTIONS, U.O.N.

REFLECTED CEILING PLAN LEGEND

NOTE: NOT ALL ITEMS MAY BE USED

- (E) GYPSUM BOARD CEILING
- (E) 2' x 4' SUSPENDED ACOUSTIC CEILING
- (E) SUPPLY DIFFUSER
- (E) CAN DOWNLIGHT
- (E) LINEAR PENDANT FIXTURE
- (E) 2X4 LAY IN FIXTURE
- (E) 1X4 LAY IN FIXTURE
- 2' x 4' SUSPENDED ACOUSTIC CEILING MATCH (E) ACT AND GRID WHERE IMMEDIATELY ADJACENT
- SUPPLY DIFFUSER
- 2X4 LAY IN FIXTURE
- (R) RELOCATED 2X4 LAY IN FIXTURE
- (R) RELOCATED 1X4 LAY IN FIXTURE
- EQ EQ 1/4 DISTANCE OF TILE
- EQ EQ DEVICE LOCATION AT MID POINT OR QUARTER POINT U.O.N.

1 A600 RCP - THIRD FLOOR
1/8" = 1'-0"

PROJECT NORTH

0' 2' 4' 8' 16'

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REFLECTED CEILING PLAN - THIRD FLOOR

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REFLECTED CEILING PLAN NOTES

1. SEE A000 FOR GENERAL NOTES.
2. EXISTING LIGHT FIXTURES TO REMAIN. REINSTALL EXISTING FIXTURES AS INDICATED. INFILL FIXTURES TO MATCH EXISTING.
3. DEVICES AS NOTED BUT NOT LIMITED TO LIGHT FIXTURES, ELECTRICAL DEVICES, SPRINKLER HEADS ARE SHOWN FOR OVERALL CEILING COORDINATION. NOT ALL DEVICES ARE SHOWN IN LOCATIONS WHERE CEILING LAYOUT IS LESS CRITICAL.
4. IF ABOVE DEVICES ARE NOT DIMENSIONED THEIR LOCATION REQUIRES APPROVAL BY ARCHITECT PRIOR TO INSTALLATION.
5. CEILING HEIGHT TO MATCH EXISTING ADJACENT CEILING, U.O.N.
6. CENTER ACT IN ROOMS IN BOTH DIRECTIONS, U.O.N.

REFLECTED CEILING PLAN LEGEND

NOTE: NOT ALL ITEMS MAY BE USED

- (E) GYPSUM BOARD CEILING
- (E) 2' x 4' SUSPENDED ACOUSTIC CEILING
- (E) SUPPLY DIFFUSER
- (E) CAN DOWNLIGHT
- (E) LINEAR PENDANT FIXTURE
- (E) 2X4 LAY IN FIXTURE
- (E) 1X4 LAY IN FIXTURE
- 2' x 4' SUSPENDED ACOUSTIC CEILING MATCH (E) ACT AND GRID WHERE IMMEDIATELY ADJACENT
- SUPPLY DIFFUSER
- 2X4 LAY IN FIXTURE
- (R) RELOCATED 2X4 LAY IN FIXTURE
- (R) RELOCATED 1X4 LAY IN FIXTURE
- EQ EQ 1/4 DISTANCE OF TILE
- EQ EQ DEVICE LOCATION AT MID POINT OR QUARTER POINT U.O.N.

1 A601 RCP - FOURTH FLOOR
1/8" = 1'-0"

PROJECT NORTH

0' 2' 4' 8' 16'

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REFLECTED CEILING PLAN - FOURTH FLOOR

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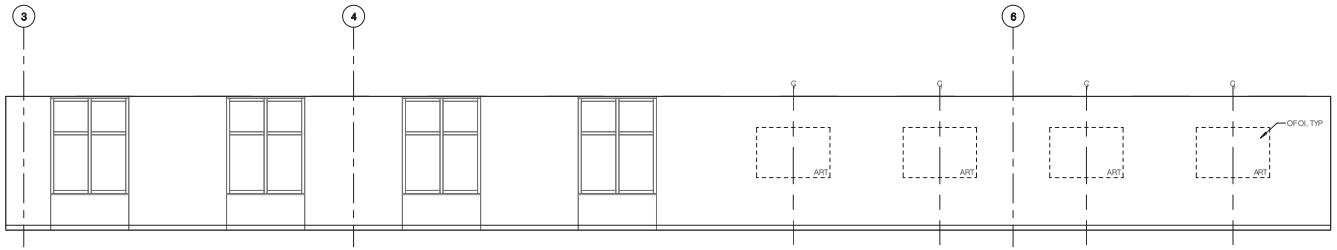
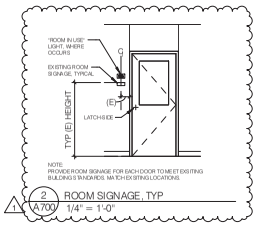
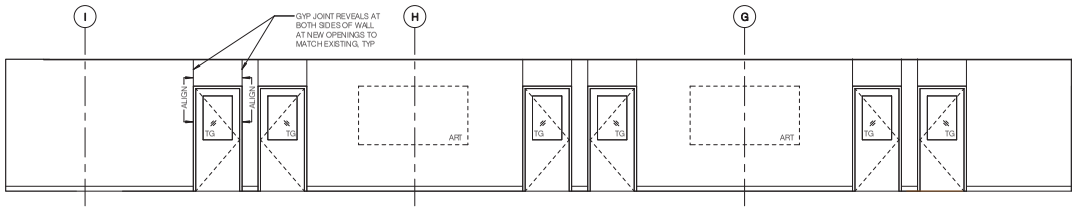


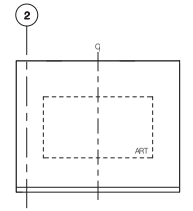
1 A700 ROOM 4200 OPEN OFFICE - WEST
1/4" = 1'-0"



2 A700 ROOM SIGNAGE, TYP
1/4" = 1'-0"

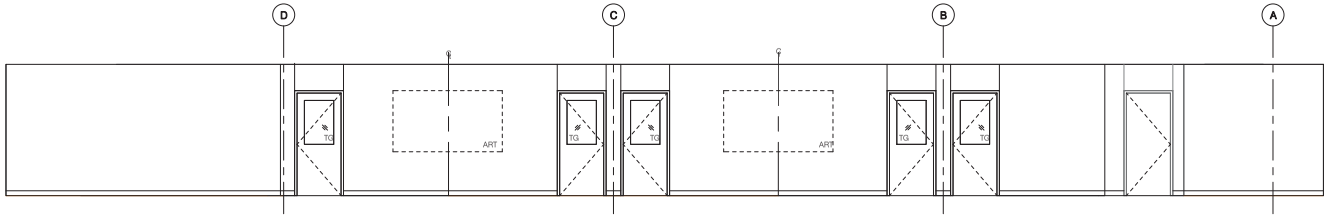


3 A700 ROOM 4200 OPEN OFFICE - NORTH
1/4" = 1'-0"

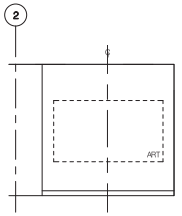


4 A700 ROOM 4977A HEARTH - WEST
1/4" = 1'-0"

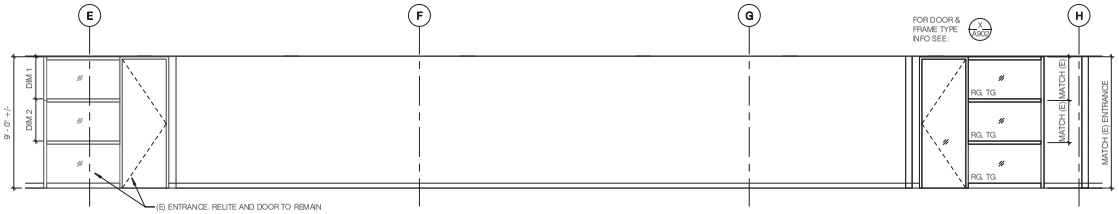
5 A700 ROOM 4977A HEARTH - EAST
1/4" = 1'-0"



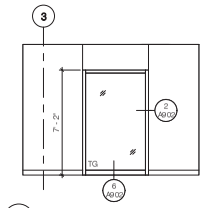
6 A700 ROOM 4977 OPEN OFFICE - NORTH
1/4" = 1'-0"



7 A700 4977B HEARTH - WEST
1/4" = 1'-0"



8 A700 ROOM H4700 HALLWAY - SOUTH
1/4" = 1'-0"



9 A700 ROOM 4727 - EXEC. OFFICE - WEST
1/4" = 1'-0"

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A700

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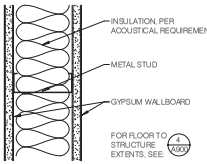
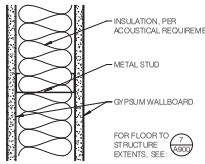


ACOUSTIC PARTITION

C3.4A ^

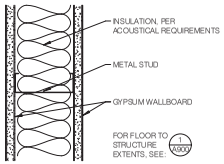
SOUND RATING NOTE:
STC 45



FIRE RATED PARTITION

C2.4A1

FIRE RATING NOTE:
@ 1 HR RATED LOCATIONS: ASSEMBLY SHALL CONFORM TO UL DESIGN NO.: U419



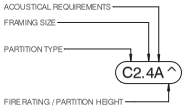
TYPICAL PARTITION

C1.4A=

GENERAL NOTES

1. COORDINATE WALLS TAGGED IN DRAWINGS WITH CONFIGURATIONS SHOWN ON THIS SHEET.
2. METAL STUDS - 33 MILS U.O.N. OR AS REQUIRED BY FIRE RATING OR SPAN, WHICHEVER IS STRICTEST.
3. METAL STUD SPACING AT 16" OC U.O.N., OR AS REQUIRED BY FIRE RATING, WHICHEVER IS STRICTEST.
4. 5/8" GYPSUM WALLBOARD, U.O.N.
5. WALLS TO BE FULLY BRACED (SHEATHED) TO ABOVE FINISH CEILING, U.O.N. 8'-0" MAX SPAN ABOVE BRACING.
6. MECHANICAL BRACING SHALL BE AT MAX SPACING INDICATED OR SHEATHING BOTH SIDES OF WALL.
7. ATTACH WALLS TO FLOOR OR FLOOR STRUCTURE ABOVE, U.O.N.
8. MAINTAIN FIRE RATING AROUND STRUCTURAL ELEMENTS AND BEHIND AND AROUND FIRE EXTINGUISHER CABINETS, ELECTRICAL CABINETS, AND OTHER RECESSESS.
9. PERIMETER PENETRATIONS OF SOUND-RATED PARTITIONS SHALL BE ACOUSTICALLY SEALED. ACHIEVE INDICATED STC RATING WHEN NOTED.
10. PARTITIONS AND CEILINGS AT ALL GRAB BARS, PLUMBING FIXTURES, WALL CABINETS, HARDWARE, WALL MOUNTED LIGHT FIXTURES AND ANY WALL MOUNTED ACCESSORIES REQUIRING SUPPORT SHALL HAVE SOLID WOOD BLOCKING OR APPROVED SHEET METAL BACKING SECURED TO WALL FRAMING.
11. FINISH MATERIALS SUCH AS TILE, WALL PANELING, TRIM, BASE, ETC. ARE NOT SHOWN AS AN INTEGRAL PART OF PARTITION TYPE. REFER TO FINISH PLAN AND INTERIOR ELEVATIONS.

INTERIOR PARTITION TYPE TAG

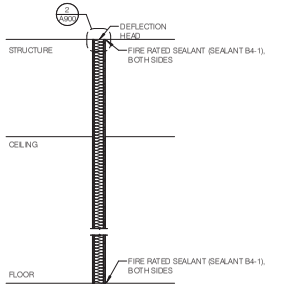


STUD FRAMING SIZE

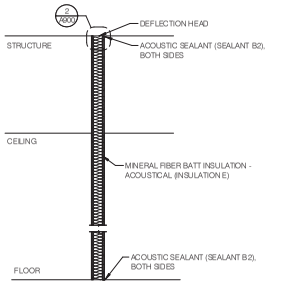
ID	SIZE
1	1 5/8"
2	2 1/2"
3	3 5/8"
4	4"
6	6"
8	8"

ACOUSTICAL REQUIREMENTS

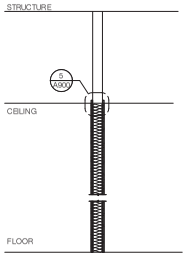
ID	REQUIREMENT
N	NO INSULATION
A	UNFACED SOUND ATTENUATION BATT, FULL HEIGHT OF CAVITY, ALL STUD BAYS



7 A900 FIRE RATED INTERIOR WALL AT CORRIDOR
1/2" = 1'-0"

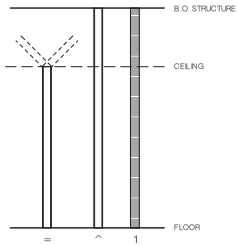


4 A900 ACOUSTICAL INTERIOR WALL
1/2" = 1'-0"



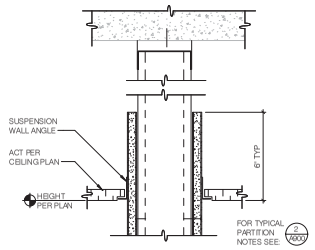
1 A900 TYPICAL INTERIOR WALL
1/2" = 1'-0"

PARTITION HEIGHT DESIGNATION

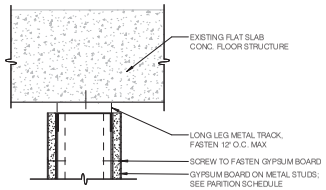


KEY

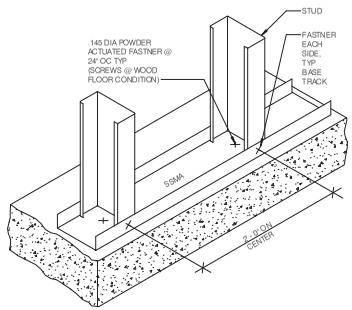
=	TO UNDERSIDE OF CEILING. BRACE FRAMING AS REQUIRED
^	EXTEND STUDS AND GYPSUM WALLBOARD TO B.O. STRUCTURE ABOVE
1	(1) HOUR FIRE RATED ASSEMBLY



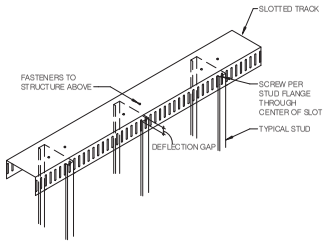
5 A900 PARTITION DETAIL AT ACT
3" = 1'-0"



2 A900 DEFLECTION HEAD
3" = 1'-0"



6 A900 TYPICAL FRAMING CONDITION - ATTACHMENT TO SLAB
NOT TO SCALE



3 A900 DEFLECTION HEAD - SLOTTED TRACK
NOT TO SCALE

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PARTITION TYPES AND DETAILS

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NWCB Technical Document 12/13

SUSPENDED CEILINGS
401

Suspension Systems for Acoustical Lay-in Ceilings Seismic Design Categories D, E & F

This document has been revised based on current Building Code standards. In all buildings, other than structures classified as essential facilities, **suspended ceilings installed in accordance with the prescriptive provisions of the 401 document are deemed to comply with the current building code interpretation.**

This document provides the IBC-2012 referenced standards for the installation of suspension systems for acoustical lay-in ceilings. Incorporation of this document will provide a more uniform standard for installation and inspection. This document is designed to accomplish the intent of the International Building Code (IBC) with regard to the requirements for seismic design category D, E and F for suspended ceilings and related items. Unless supported by engineering, the suspension system shall be installed per these requirements and those of the referenced documents. Manufacturers' recommendations should be followed where applicable.

General Recommendations

- Referenced sources per hierarchy: 2012 International Building Code (IBC), American Society of Civil Engineers (ASCE 7-10), American Society of Testing Materials (ASTM C 635, ASTM C 636, ASTM E 580/E 580M), and Ceilings and Interior Systems Construction Association (CISCA).
- Partitions that are tied to the ceiling and all partitions greater than 6 feet in height shall be laterally braced to the structure. Bracing shall be independent of the ceiling splay bracing system. *Source: ASCE 7-10 Section 13.5.6.1*
- For further information on bracing of non-load bearing partitions refer to NWCB Technical Document #200-501.
- All main beams are to be Heavy Duty (HD). *Source: ASTM E580 Section 5.7.1*
- Ceilings less than or equal to 144 ft² and surrounded by walls connected to the structure above are exempt from the seismic design requirements. *Source ASTM E580 Section 1.4*
- These recommendations are intended for suspended ceilings and related components in areas that require resistance to the effects of earthquake motions. *Source: ASTM E580 Section 3.2*
- All wire ties are to be three tight turns around itself within three inches. Twelve gage Hanger wire spaced 4 foot on center (figure 1). *Source: ASTM C636 Section 5.5.4*
- Changes in ceiling planes will require positive bracing. *Source: ASTM E580 Section 5.2.6.6*

figure 1

NWCB
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2625 Eastlake Ave E Ste 350 | Seattle, WA 98102
tel 206-524-4243 | email info@nwcb.org
OREGON
tel 503-295-0333
email oregon@nwcb.org

© NORTHWEST WALL AND CEILING BUREAU

figure 2
Lateral force Bracing

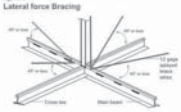


figure 3
Maximum Recommended Lengths for Vertical Struts

EMT CONDUIT	
½" EMT conduit	up to 5'10"
¾" EMT conduit	up to 7'8"
1" EMT conduit	up to 9'8"
METAL STUDS	
Single 1½" metal stud (20 gage)	up to 12'0"
Back-to-back 1½" metal stud (20 gage)	up to 15'0"
Single 2 ½" metal stud (20 gage)	up to 13'6"
Back-to-back 2 ½" metal stud (25 gage)	up to 15'0"

Source: Portland Building Department
Note: Plenum areas greater than 1'0" will require engineering calculations.

figure 4a
Attached Wall Molding Requirements

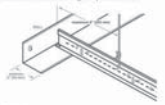
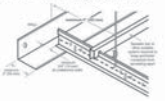


figure 4b
Unattached Wall Molding Requirements



Lateral Force Bracing *(figures 2 and 3)*

- Ceilings constructed of screw-or-nail-attached gypsum board on one level that are surrounded by and connected to walls or soffits that are laterally braced to the structure above are exempt from seismic design requirements. *Source: ASCE 7-10 Section 13.5.6.3.3 Exception 3, ASTM E580 Section 1.7*
- Ceiling areas of 1000 ft² or less shall be exempt from later force bracing requirements. *Source: ASTM E580 Section 1.6*
- Lateral force bracing is the use of vertical struts (compression posts) and splay wires (see figure 2).
- Lateral Force Bracing shall be 12 feet on center (maximum) and begin no farther than 6 feet from walls. *Source: ASTM E580 Section 5.2.6.2*
- Seismic splay wires are to be four 12 gage wires attached to the main beam. Wires are arrayed 90° from each other and at an angle not exceeding 45° from the plane of the ceiling. *Source: ASTM E580 Section 5.2.6.2*
- Seismic splay wires shall be attached to the grid and to the structure in such a manner that they can support a design load of not less than 200 pounds or the actual design load, with a safety factor of 2, whichever is greater (figure 6b). *Source: CISCA annex 3-4*
- Power Actuated Fasteners (PAF's), when used for seismic application as part of the prescriptive path in Seismic Design Categories D, E and F, shall have an ICC-ES approval for seismic applications and shall require "special inspection" irrespective of the type of occupancy category the structure is in. PAF anchors for kicker wires (splayed wires installed for purposes other than seismic restraint) are exempt from this requirement. *Source: State of Oregon, Building Codes Division*
- Splay wires are to be within 2 inches of the connection of the vertical strut to suspended ceiling. *Source: ASTM E580 Section 5.2.6.3*
- Rigid bracing may be used in lieu of splay wires. *Source: ASTM E580 Section 5.2.6.4*
- Ceilings with plenums less than 12 inches to structure are not required to have lateral force bracing. *Source: Portland Building Department*
- Vertical struts must be positively attached to the suspension systems and the structure above. *Source: ASTM E580 Section 5.2.6.2*
- The vertical strut may be EMT conduit, metal studs or a proprietary compression post (see figure 3).

Wall Moldings *(figures 4a and 4b)*

- Wall moldings (perimeter closure angles) are required to have a horizontal flange 2 inches wide. One end of the ceiling grid shall be attached to the wall molding, the other end shall have a ¾ inch clearance from the wall and free to slide. *Source: ASTM E580 Section 5.2.3, Section 5.2.3*
- Where substantiating documentation has been provided to the local jurisdiction, perimeter clips may be used to satisfy the requirements for the 2-inch closure angle. *Source: State of Oregon, Building Codes Division*
- The grid shall be attached at two adjacent walls (pop rivets or approved method). Soffits extending to a point at least level with the bottom plane of the grid and independently supported and laterally braced to the structure above are deemed to be

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figure 5a

figure 5b + Countersloping

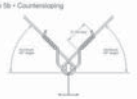

figure 6a

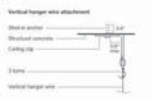

figure 6b

equivalent to walls. *Source: State of Oregon, Building Codes Division, ASTM E580 Section 5.2.3, Section 5.2.8.1*

Spreader Bars *(figure 4b)*

- Terminal ends of main runners and cross members shall be tied together or have some other approved means to prevent their spreading. Stabilizer bars, cross tees or other means to prevent spreading shall occur within 8 in. of each wall. *Source: ASTM E580 Section 5.2.4*
- Spreader bars are not required at perimeters where runners are attached directly to closure angles.
- Spreader bars are not required if a 90 degree intersecting cross or main is within 8 inches of the perimeter wall.
- Where substantiating documentation has been provided to the local jurisdiction, perimeter clips may be used to satisfy the requirements for spreader bars. *Source: State of Oregon, Building Codes Division*

Hanger (Suspension) Wires *(figures 5a and 5b)*

- Hanger and perimeter wires must be plumb within 1 in 6 unless (figure 5a) counter sloping wires are provided (figure 5b). *Source: ASTM C636 Section 5.1.4*
- Hanger wires shall be 12 gage and spaced 4 feet on center or 10 gage spaced 5 feet on center. *Source: ASTM C636 Section 5.1*
- Any connection device at the supporting construction shall be capable of carrying not less than 100 pounds. *Source: CISCA Annex 3-4*
- Powder Actuated Fasteners (PAFs) are an approved method of attachment for hanger wires. *Source: State of Oregon, Building Codes Division*
- Terminal ends of each main beam and cross tee must be supported within 8 inches of each wall with a perimeter wire (see figure 4 & 5 a). *Source: ASTM E580 Section 5.2.6*
- Wires shall not attach to or bend around interfering material or equipment. A trapeze or equivalent device shall be used where obstructions preclude direct suspension. Trapeze suspensions shall be sized to resist the dead load and lateral forces appropriate for the seismic category. *Source: ASTM E580 Section 5.2.7.4*

Electrical fixtures

- Light fixtures weighing less than 10 pounds shall have one 12 gage hanger wire connected from the fixture to the structure above. This wire may be slack. *Source: ASTM E580 Section 5.3.4*
- Light fixtures weighing more than 10 pounds and less than 56 lbs. shall have two 12 gage wires attached at opposing corners of the light fixture to the structure above. These wires may be slack. *Source: ASTM E580 Section 5.3.5*
- Light Fixtures weighing more than 56 lbs. shall be supported directly from the structure above by approved hangers. *Source: ASTM E580 Section 5.3.6*
- Pendant mounted fixtures shall be directly supported from the structure above using a 9 gage wire or an approved alternate support without using the ceiling suspension system for direct support. *Source: ASTM E580 Section 5.3.7*
- Tandem fixtures may utilize common wires.

Mechanical Services

- Terminals or services weighing less than 20 lbs. shall be positively attached to the ceiling suspension main runners or to cross runners that have the same carrying capacity as the main runners. *Source: ASTM E580 Section 5.4.1*

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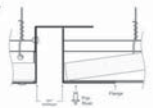
figure 7



- Terminals or services weighing 20 lbs. but not more than 56 lbs. shall have, in addition to 5.4.1, two 12 gage wires connecting them to the ceiling system hangers or the structure above. These wires may be slack. *Source: ASTM E580 Section 5.4.2*
- Terminals or services weighing more than 56 lbs. shall be supported directly from the structure above by approved hangers. *Source: ASTM E580 Section 5.4.3*

Seismic Separation Joints *(figure 7)*

- For ceiling areas exceeding 2,500 square feet, a seismic separation joint or full height wall partition that breaks the ceiling shall be provided unless analyses are performed of the ceilings bracing system, closure angles and penetrations to provide sufficient clearance. *Source: ASCE 7-10 Section 13.5.8.2.3.b*
- The layout and location of the seismic separation joint shall be per the designer of record and noted on the plans. If a seismic separation joint is required by the designer, the designer may use the generic joint detailed in this document or a proprietary joint. The amount of free movement (gap design) shall be a minimum of ¼ inch. *Source: State of Oregon, Building Codes Division*
- In lieu of seismic separation joints, the ceiling may be divided into areas less than 2500 square feet by the use of partitions or soffits as follows: partitions shall extend a minimum of 6 inches above the level of the plane of the grid and shall be independently braced to the structure above. Soffits shall extend to a point at least level with the bottom plane of the grid and shall be independently supported and laterally braced to the structure above. *Source: State of Oregon Building Codes Division, ASTM E580 Section 5.2.6.1*

Sprinklers

- For ceilings without rigid bracing, sprinkler head penetrations shall have a 2 inch oversize ring, sleeve or adapter through the ceiling tile to allow free movement of at least 1 inch in all horizontal directions. Flexible head design that can accommodate 1 inch free movement shall be permitted as an alternate. *Source: ASTM E580 Section 5.2.6.5*

Glossary for this Document *(regional terminology may vary)*

CROSS TEES The cross member that interlock with the main beams, also known as cross runners or cross T-bars.

DIFFUSER A circular or rectangular metal grill used for the passage of air from a ducted system.

ESSENTIAL SERVICE BUILDINGS Any buildings designed to be used by public agencies as a fire station, police station, emergency operations center, State Patrol office, sheriff's office, or emergency communication dispatch center.

GRID The main beams and cross tees of the suspension system.

HANGER WIRE 10 or 12 gage soft annealed wire used as primary support for the grid system. Also called suspension wires.

LATERAL FORCE BRACING The bracing method used to prevent ceiling uplift or restrict lateral movement during a seismic event. Lateral force bracing consists of vertical struts and splay wires.

MAIN BEAM The primary suspension member supported by hanger wires, also known as the main runner, carrying tee, carrying runner or mains.

MOLDING/CLOSURE ANGLE A light gauge metal angle or channel fastened to the perimeter wall or partition to support the perimeter ends of an acoustical ceiling grid.

PERIMETER CLIPS Proprietary angle bracket attached directly to the wall molding/closure angle which allows for ½" movement in the event of seismic activity and interlocks properly with ends of grid system.

PERIMETER WIRES Hanger wires placed within eight inches of the surrounding walls.

PLENUM The space above a suspended ceiling.

SLACK WIRE A 12 gage wire that is not tight or taut.

SPREADER or SPACER BAR A bar with notches to prevent the suspension system from separating, also called a stabilizer bar.

SPLAY WIRES Wires installed at an angle rather than perpendicular to the grid.

VERTICAL STRUTS The rigid vertical member used in lateral force bracing of the suspension system. Also known as compression posts, seismic pods, seismic struts. Common materials are electrical conduit (EMT), metal studs or proprietary products.

The NWCB has been serving the construction industry for over forty years. It is recognized as a technical authority, educational body and spokesperson for the wall and ceiling industry. It provides services to architects and the construction community on all matters relating to the diversified wall and ceiling industry. As the industry's development and coordination organization, the NWCB saw the need to establish a document to provide clarification and the intent of NEHRP (National Earthquake Hazards Reduction Program) an agency of FEMA (Federal Emergency Management Agency). It is meant to serve as a set of recommendations and is not intended for any specific construction project. This technical document is to serve as a guideline and it is not intended for any specific construction projects. NWCB makes no express or implied warranty or guarantee of the techniques, construction methods or materials identified herein.

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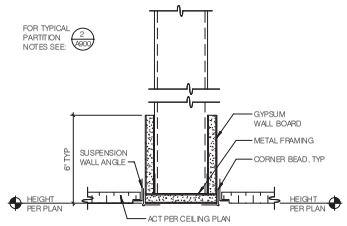
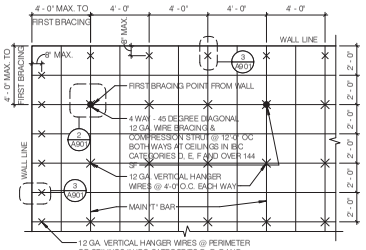
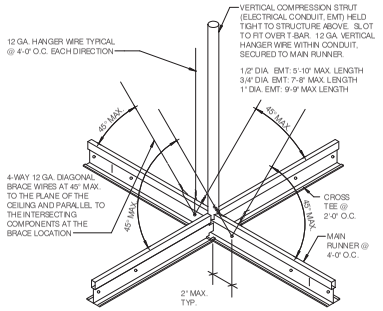


5 A901 CEILING TRANSITION - ACT TO GYPSUM BOARD BULKHEAD
3" = 1'-0"

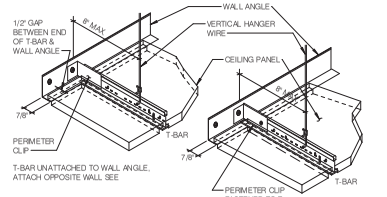


NOTE:
THE ABOVE DIAGRAM SHOWS THE MAXIMUM SPACING OF SUPPORT AND BRACING ELEMENTS. COORDINATE WITH MECHANICAL AND ELECTRICAL ABOVE CEILING ELEMENTS WHILE MAINTAINING MAXIMUM SPACING SHOWN.

1 A901 DIAGRAM CEILING PLAN - ACOUSTIC CEILING PANELS
NOT TO SCALE



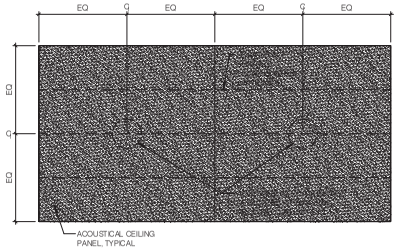
2 A901 CEILING SEISMIC BRACING DIAGRAM
NOT TO SCALE



NOTE:
CUT EDGE OF TILE WHERE REQUIRED. WHERE CUT, ROUTE CUT TILE FACE TO MATCH RECESSED JOINTS ELSEWHERE.

FOR CEILINGS IN IBC CATEGORIES D, E, F, AND 144 SF

3 A901 CEILING - WALL CONDITION
NOT TO SCALE



4 A901 CEILING MOUNT LOCATIONS
NOT TO SCALE

Oregon State University

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Date: 9 October 2018
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Revisions:

Drawn by: AN/DC
Checked by: DR
Sheet:
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CONSTRUCTION SET

A901

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DOOR SCHEDULE

ROOM NAME	NO.	TYPE	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	HARDWARE GROUP	ASSEMBLY RATING	NOTES
OPEN OFFICE	3729	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	3731	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	3732	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	3772	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	3773	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	3774	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
HOTELING OFFICE	4063	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	2	–	
HOTELING OFFICE	4064	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	2	–	
HOTELING OFFICE	4065	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	2	–	
CONF RM	4146	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	3	–	
OFFICE	4201	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4202	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4203	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4204	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4205	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4206	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
EXEC OFFICE	4208	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OPEN OFFICE	4209	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4210	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4211	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
MULTIMEDIA TEAM	4563	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	3	–	
HEARTH	4943A	A	3' - 0"	8' - 9 1/2"	WD	CLR	2	ALUM	PT	4	20-MIN	MATCH EXISTING ENTRANCE. SEE ELEV.
OFFICE	4983	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4984	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4985	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4986	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	
OFFICE	4987	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	–	

ABBREVIATIONS: DOOR SCHEDULE

MATERIAL:
ALUM ALUMINUM
HM HOLLOW METAL
STL STEEL
WD WOOD
GL GLASS
RG RATED GLASS, 20 MINUTES
TG TEMPERED GLAZING, ANSI Z97.1 CLASS A

REFER TO MAIN ABBREVIATION LIST FOR ADDITIONAL ABBREVIATIONS.

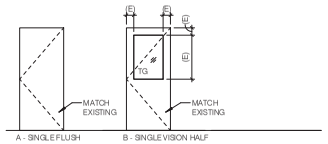
FINISH:
ANOD ANODIZED
CLR CLEAR
PT # PAINT

LOCK FUNCTION:
PA PASSAGE
PR PRIVACY
E ENTRANCE/OFFICE
C CLASSROOM
S STOREROOM
PP PUSH/PULL

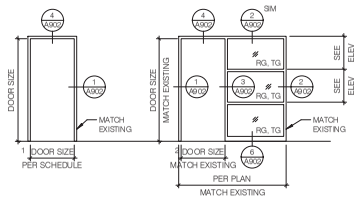
DOOR SCHEDULE GENERAL NOTES

1. THICKNESS OF DOOR 1 3/4" UNLESS NOTED OTHERWISE.
2. PROVIDE ADA COMPLIANT LEVER HARDWARE AT ALL HINGED DOORS, TYPICAL.
3. PROVIDE DOOR SILENCERS WHERE GASKETING IS NOT SPECIFIED. THE COLOR OF BRUSH GASKETING (IF USED) SHALL MATCH THE COLOR OF SURROUNDING FRAME.
4. ALL GLAZING IN DOORS AND FRAMES TO BE TEMPERED GLAZING (TG) OR LAMINATED GLAZING (LG), UNLESS OTHERWISE NOTED.
5. EACH PANE OF TEMPERED OR LAMINATED GLASS SHALL BE PERMANENTLY IDENTIFIED BY MANUFACTURER WITH A MARK THAT ONCE APPLIED, CANNOT BE REMOVED WITHOUT BEING DESTROYED.
6. THE OPENING FORCE OF DOORS ALONG AN ACCESSIBLE ROUTE SHALL NOT EXCEED 8 1/2 POUNDS-FORCE FOR EXTERIOR DOORS AND 5 POUNDS-FORCE FOR INTERIOR DOORS.
7. WHERE 'MATCH EXISTING' IS INDICATED, MATCH THE DIMENSIONS, MATERIALS, FINISHES AND DETAILS OF IMMEDIATELY ADJACENT EXISTING DOORS AND FRAMES. MULTIPLE TYPES OF DOORS AND FRAMES EXIST WITHIN THE PROJECT SCOPE. CONFIRM ASSUMPTIONS WITH ARCHITECT.

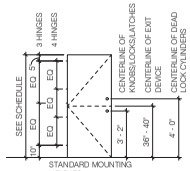
DOOR TYPE LEGEND



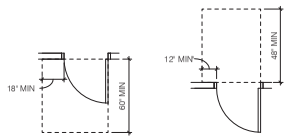
FRAME TYPE LEGEND

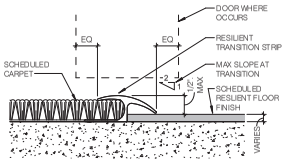


STANDARD MOUNTING HEIGHTS

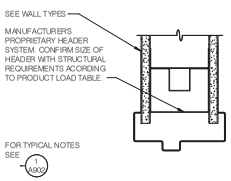


TYPICAL DOOR CLEARANCES

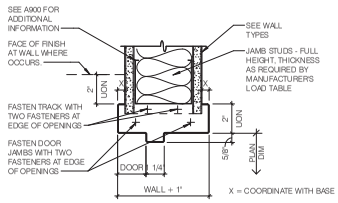




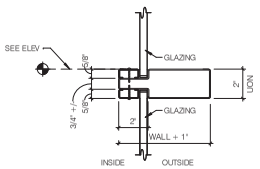
7 / A902 CARPET TO RESILIENT
12" = 1'-0"



4 / A902 HM DOOR FRAME - HEAD
3" = 1'-0"



1 / A902 HM DOOR FRAME - JAMB
3" = 1'-0"



5 / A902 HM RELITE FRAME - HORIZ. MULLION
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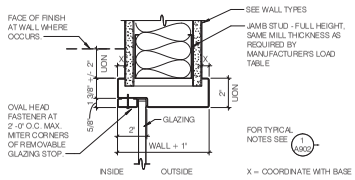
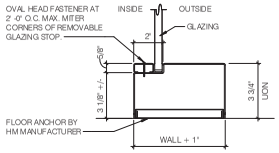
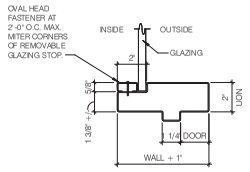


2 / A902 HM RELITE FRAME - JAMB
3" = 1'-0"



6 / A902 HM RELITE FRAME - BASE
3" = 1'-0"



3 / A902 HM RELITE FRAME AT DOOR
3" = 1'-0"

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HEA Project no. 17050
Date: 9 October 2018
CONSTRUCTION SET

Revisions:

1	11.09.18	Addendum 1

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Sheet:
DOOR SCHEDULE & DETAILS

CONSTRUCTION SET

A902

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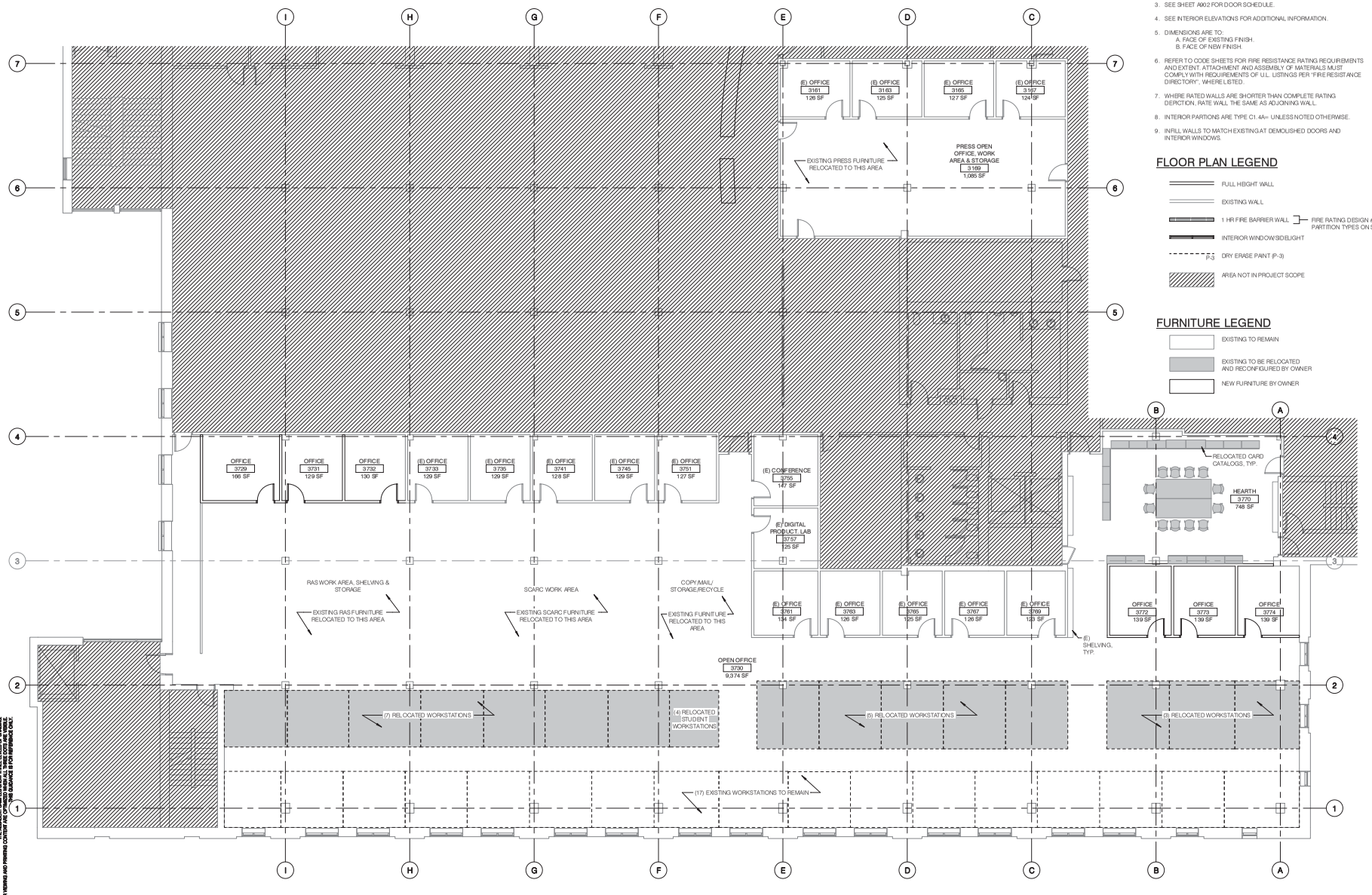

FLOOR PLAN NOTES

1. SEE SHEET A000 FOR GENERAL NOTES.
2. SEE SHEET A900 FOR INTERIOR PARTITION TYPES.
3. SEE SHEET A902 FOR DOOR SCHEDULE.
4. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
5. DIMENSIONS ARE TO:
   A. FACE OF EXISTING FINISH.
   B. FACE OF NEW FINISH.
6. REFER TO CODE SHEETS FOR FIRE RESISTANCE RATING REQUIREMENTS AND EXTENT, ATTACHMENT AND ASSEMBLY OF MATERIALS MUST COMPLY WITH REQUIREMENTS OF U.L. LISTINGS PER "FIRE RESISTANCE DIRECTORY", WHERE LISTED.
7. WHERE RATED WALLS ARE SHORTER THAN COMPLETE RATING DEPICTION, RATE WALL THE SAME AS ADJOINING WALL.
8. INTERIOR PARTIONS ARE TYPE C1.4A= UNLESS NOTED OTHERWISE.
9. INFILL WALLS TO MATCH EXISTING AT DEMOLISHED DOORS AND INTERIOR WINDOWS.

FLOOR PLAN LEGEND

- FULL HEIGHT WALL
- EXISTING WALL
- 1 HR FIRE BARRIER WALL — FIRE RATING DESIGN # PER PARTITION TYPES ON SHEET A900
- INTERIOR WINDOW/SIDELIGHT
- P-3 DRY ERASE PAINT (P-3)
- AREA NOT IN PROJECT SCOPE

FURNITURE LEGEND

- EXISTING TO REMAIN
- EXISTING TO BE RELOCATED AND RECONFIGURED BY OWNER
- NEW FURNITURE BY OWNER

1 A930 FURNITURE PLAN - THIRD FLOOR
1/8" = 1'-0"

PROJECT NORTH

0 2 4 8 16

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FURNITURE PLAN - THIRD FLOOR

CONSTRUCTION SET

A930

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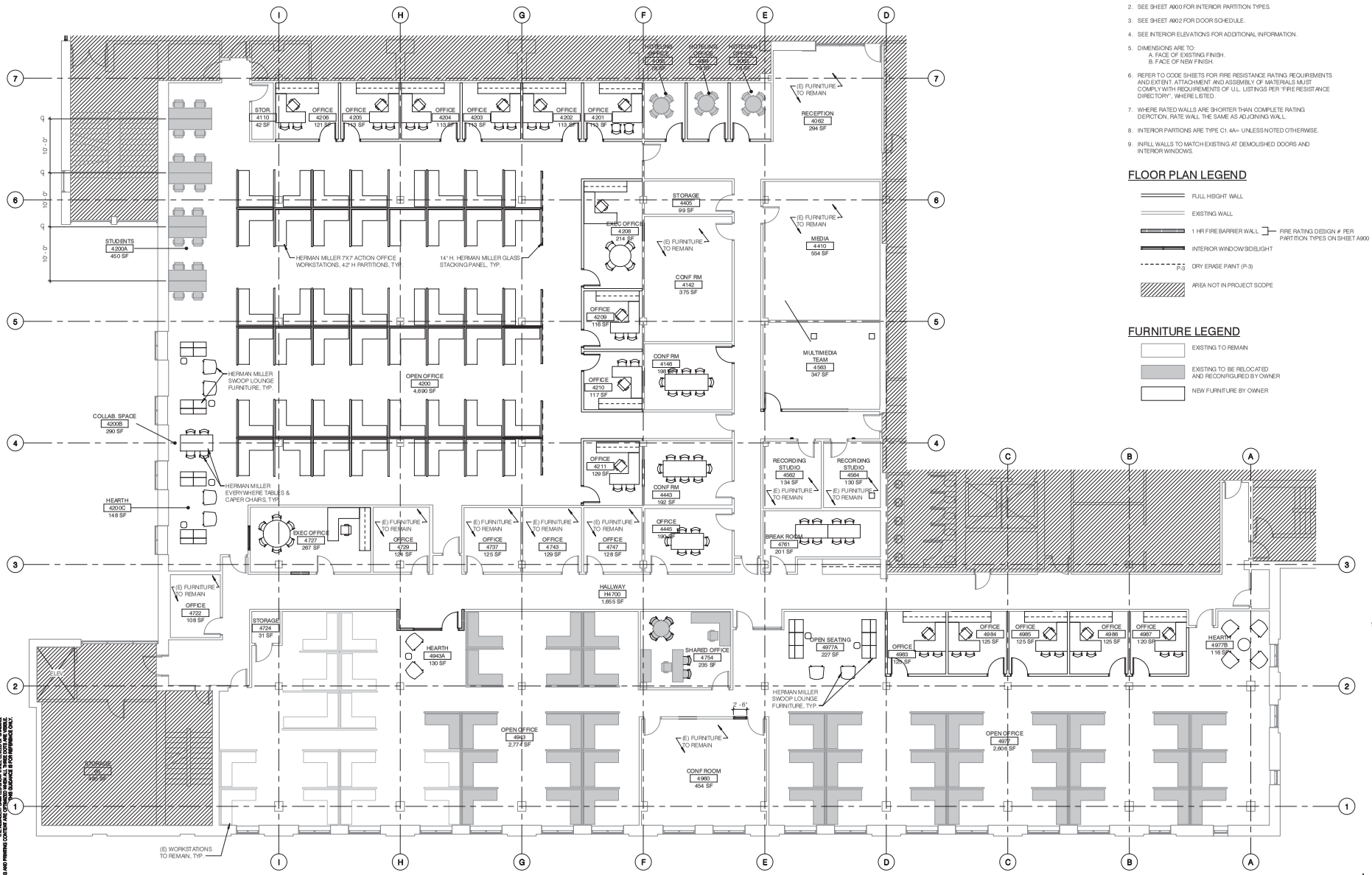

FLOOR PLAN NOTES

1. SEE SHEET A300 FOR GENERAL NOTES.
2. SEE SHEET A900 FOR INTERIOR PARTITION TYPES.
3. SEE SHEET A902 FOR DOOR SCHEDULE.
4. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
5. DIMENSIONS ARE TO:
   A. FACE OF EXISTING FINISH.
   B. FACE OF NEW FINISH.
6. REFER TO CODE SHEETS FOR FIRE RESISTANCE RATING REQUIREMENTS AND EXTENT, ATTACHMENT AND ASSEMBLY OF MATERIALS MUST COMPLY WITH REQUIREMENTS OF U.L. LISTINGS PER "FIRE RESISTANCE DIRECTORY", WHERE LISTED.
7. WHERE RATED WALLS ARE SHORTER THAN COMPLETE RATING DEPICTION, RATE WALL THE SAME AS ADJOINING WALL.
8. INTERIOR PARTIONS ARE TYPE C1.4A= UNLESS NOTED OTHERWISE.
9. INFILL WALLS TO MATCH EXISTING AT DEMOLISHED DOORS AND INTERIOR WINDOWS.

FLOOR PLAN LEGEND

- FULL HEIGHT WALL
- EXISTING WALL
- 1 HR FIRE BARRIER WALL — FIRE RATING DESIGN # PER PARTITION TYPES ON SHEET A900
- INTERIOR WINDOW/SIDELIGHT
- P-3 DRY ERASE PAINT (P-3)
- AREA NOT IN PROJECT SCOPE

FURNITURE LEGEND

- EXISTING TO REMAIN
- EXISTING TO BE RELOCATED AND RECONFIGURED BY OWNER
- NEW FURNITURE BY OWNER

1 A931 FURNITURE PLAN - FOURTH FLOOR
1/8" = 1'-0"

PROJECT NORTH

0 2 4 8 16

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FURNITURE PLAN - FOURTH FLOOR

CONSTRUCTION SET

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PLUMBING LEGEND

PIPING

SYMBOL	ABBREV.	DESCRIPTION
FIRE PROTECTION PIPING:		
F	F	FIRE SPRINKLER SUPPLY
PLUMBING PIPING:		
CW	CW	POTABLE COLD WATER
HW	HW	POTABLE HOT WATER
HWR	HWR	POTABLE HOT WATER RETURN
SD	SD	STORM DRAIN
OD	OD	OVERFLOW DRAIN

SYMBOL	ABBREV.	DESCRIPTION
		PIPING UP
		PIPING DOWN
S = .01		SLOPE OF PIPE IN DECIMALS OF FEET
		CAPPED PIPE
		PIPE REDUCING FITTING: CONCENTRIC, ECCENTRIC
		DIRECTION OF FLOW
		UNION
	DV	DRAIN VALVE
	BV	BALL VALVE
	COTG, FCO	CLEANOUT TO GRADE, FLOOR CLEANOUT
	WCO	WALL CLEANOUT
	FD	FLOOR DRAIN
		WATER HAMMER ARRESTOR

GENERAL

SYMBOL	ABBREVIATION	DESCRIPTION
(E)		EXISTING
OR dia		DIAMETER
		NEW TO EXISTING POINT OF CONNECTION
		NOTE REFERENCE MARKER
2 / M-123	2 / M-507	PLAN OR DETAIL NUMBER / SHEET NUMBER — PLAN OR DETAIL REFERENCE MARKER
A / M-401		SECTION LETTER / SHEET NUMBER — SECTION REFERENCE MARKER
EF 2		EQUIPMENT TYPE / EQUIPMENT NUMBER — EQUIPMENT MARKER
208		ROOM NUMBER
		EXISTING SHOWN LIGHT
		NEW WORK SHOWN BOLD
		EXISTING TO BE REMOVED
		AREA NOT IN PROJECT SCOPE

ABBREVIATIONS

ACH	AIR CHANGES PER HOUR	IN WC	INCHES WATER COLUMN
AFF	ABOVE FINISHED FLOOR	IPLV	INTEGRATED PART LOAD VALUE
AFS	AUTOMATIC FIRE SPRINKLER	IW	INDIRECT WASTE
AL	ALUMINUM	LBS	POUNDS
ALT	ALTERNATE	LWT	LEAVING WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM	Ma	MILLIAMPERE
BHP	BRAKE HORSEPOWER	MAX	MAXIMUM
BOP	BOTTOM OF PIPE	MBH	THOUSAND BTUs per HOUR
BTUH	BRITISH THERMAL UNITS PER HOUR	MCA	MINIMUM CIRCUIT AMPS
CFH	CUBIC FEET per HOUR	MFGR	MANUFACTURER
CFM	CUBIC FEET per MINUTE	MIN	MINIMUM
CMU	CONCRETE MASONRY UNIT	MOP	MAX. OVERCURRENT PROTECTION
CONC	CONCRETE	NC	NOISE CRITERIA
CONT	CONTINUATION	NC	NORMALLY CLOSED
DB	DRY BULB	NIC	NOT IN CONTRACT
Dba	DECIBELS ACOUSTIC	NO	NORMALLY OPEN
DN	DOWN	NPLV	NON-STANDARD PART LOAD VALUE
DP	DIFFERENTIAL PRESSURE	NPSH	NET POSITIVE SUCTION HEAD
EFF	EFFICIENCY	OFCI	OWNER FURNISHED/CONTRACTOR INSTALLED
EWT	ENTERING WATER TEMPERATURE	PD	PRESSURE DROP
FLA	FULL LOAD AMPS	PH	PHASE
FPM	FEET PER MINUTE	PPH	POUNDS per HOUR
FT	FEET	PSI	POUNDS per SQUARE INCH GAUGE
FT WC	FEET WATER COLUMN	RD	ROOF DRAIN
FUT	FUTURE	REQD	REQUIRED
GPH	GALLONS PER HOUR	RH	RELATIVE HUMIDITY
GPM	GALLONS PER MINUTE	RPM	REVOLUTIONS per MINUTE
GYP BD	GYPSUM WALL BOARD	SS	STAINLESS STEEL
HP	HORSEPOWER	STL	STEEL
HVAC	HEATING, VENTILATING, & AIR CONDITIONING	TYP	TYPICAL
HZ	HERTZ (CYCLES PER SECOND)	VFD	VARIABLE FREQUENCY DRIVE
IAQ	INDOOR AIR QUALITY	WB	WET BULB
IE	INVERT ELEVATION	WC	WATER COLUMN
IN	INCHES	WG	WATER GAUGE

GENERAL NOTES

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2. SIZE AND LOCATION OF ALL PIPING AND OTHER MECHANICAL EQUIPMENT IS APPROXIMATE. CONTRACTOR SHALL SITE VERIFY THE EXACT LOCATION OF EXISTING AND CONSTRUCT ALL WORK FROM FIELD DIMENSIONS. CONTRACTOR SHALL MAKE ADJUSTMENTS NECESSARY TO ACCOMMODATE MINOR DEVIATIONS AT NO COST TO OWNER.
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5. DRAWINGS AND SPECIFICATIONS SHALL BE STAMPED AND SIGNED BY REGISTERED PROFESSIONAL ENGINEER RESPONSIBLE FOR DESIGN.

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PLUMBING LEGEND & GENERAL NOTES

P001

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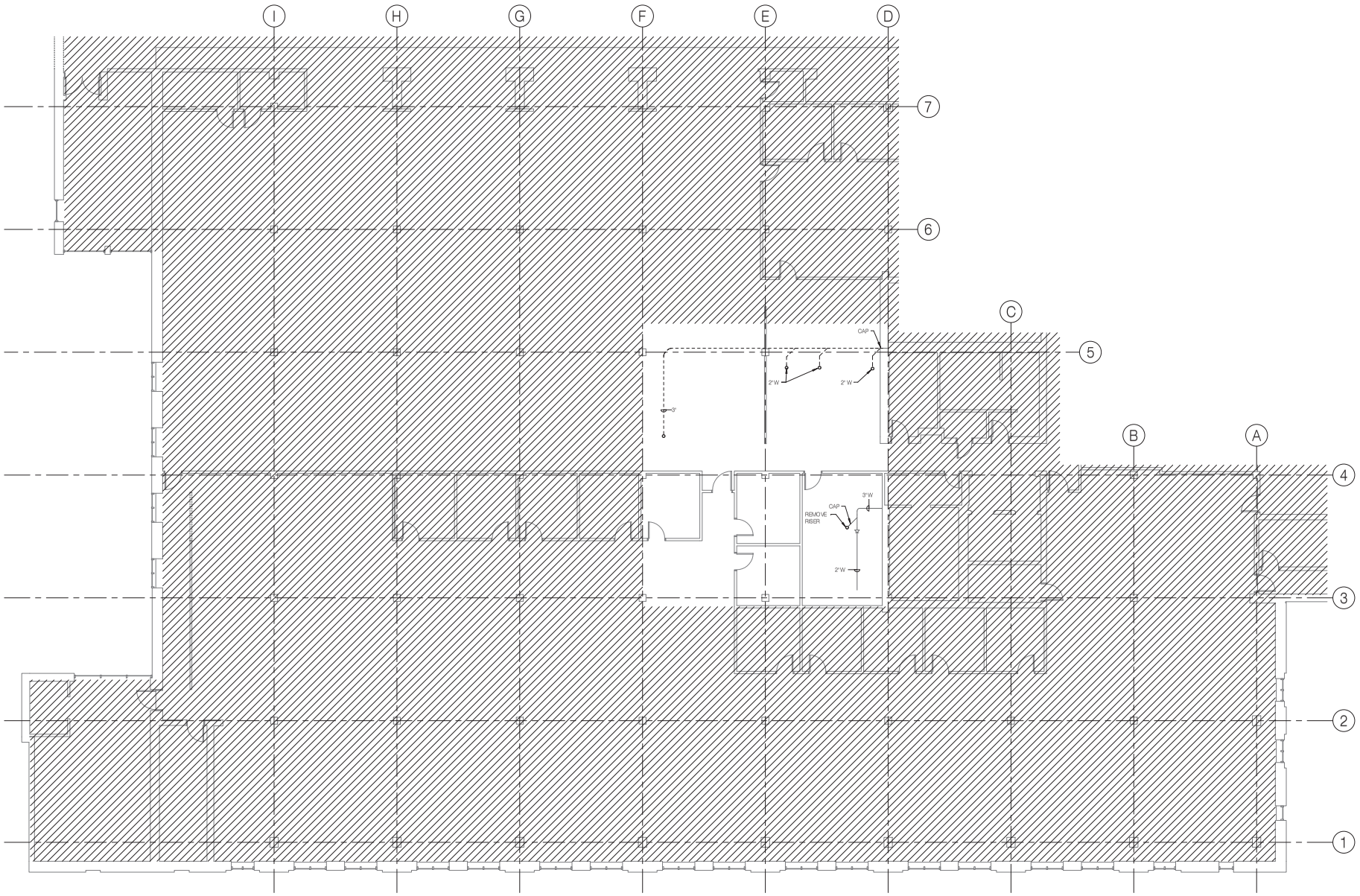

NORTH

1 PLUMBING DEMOLITION PLAN - THIRD FLOOR
1/8" = 1'-0"

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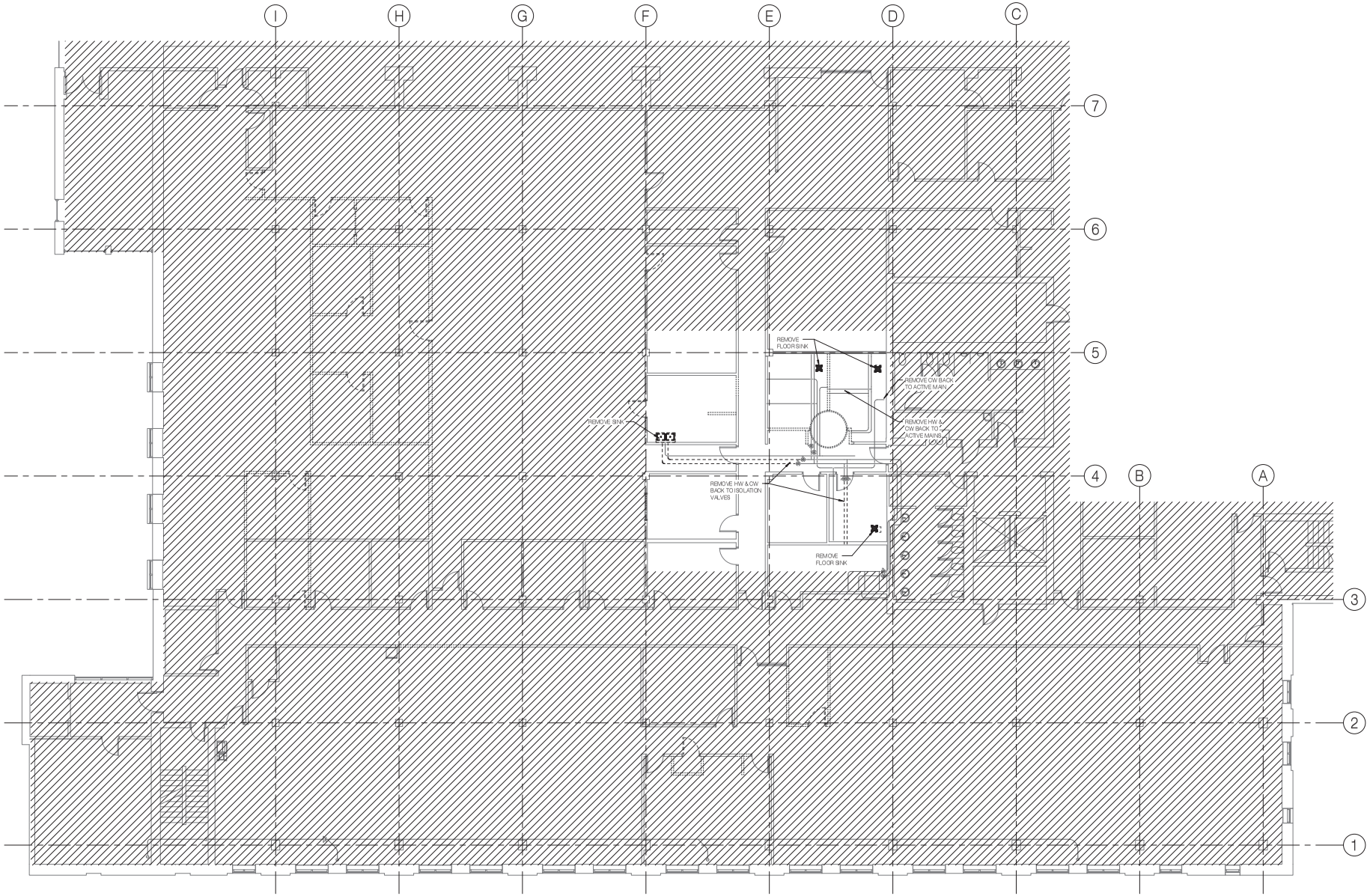

NORTH

1 PLUMBING DEMOLITION PLAN - FOURTH FLOOR
1/8" = 1'-0"

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PLUMBING DEMOLITION - FOURTH FLOOR

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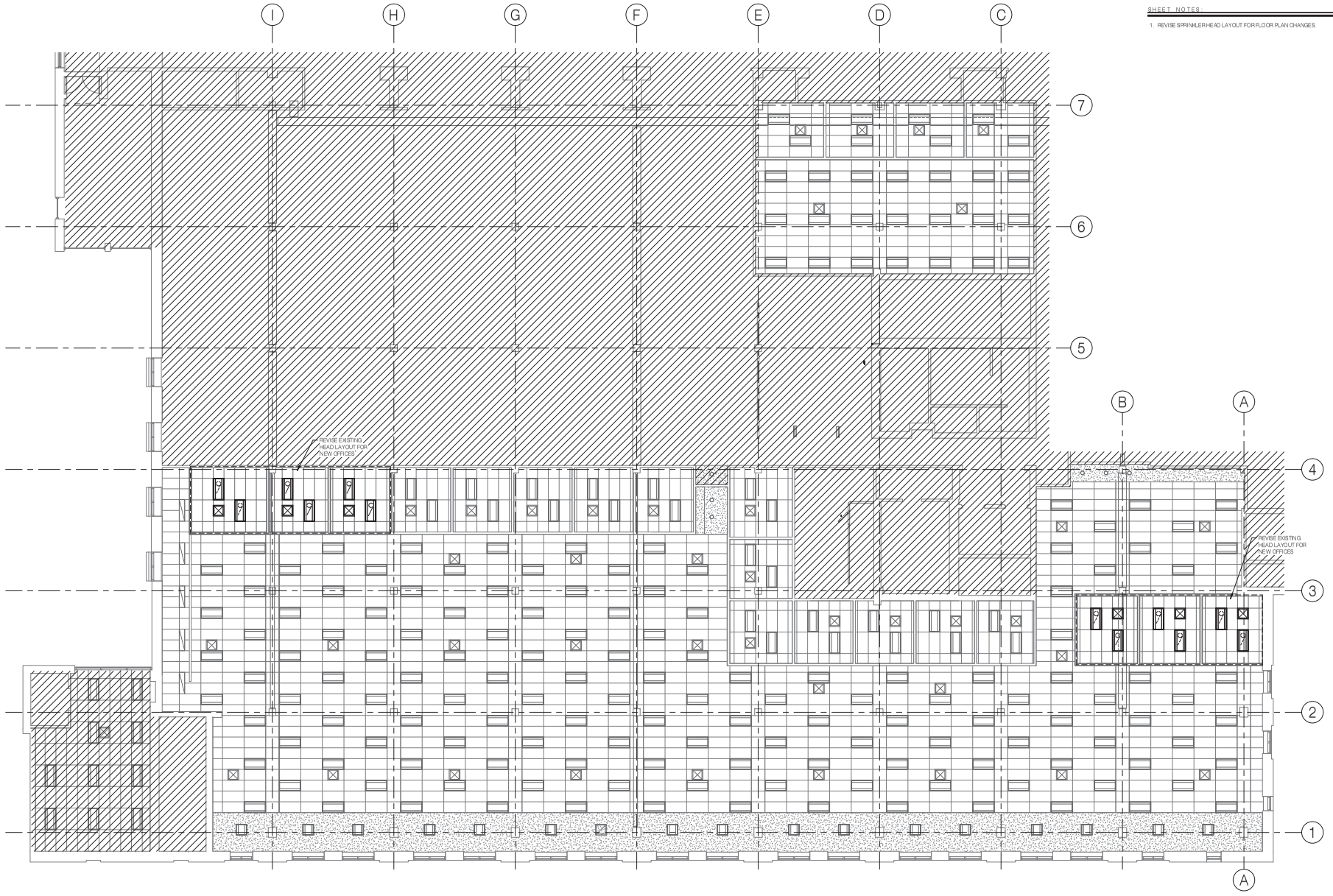
SHEET NOTES:

1. REVISE SPRINKLER HEAD LAYOUT FOR FLOOR PLAN CHANGES.



NORTH

1 Level 3
1/8" = 1'-0"

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PLUMBING/FIRE PROTECTION PLAN - THIRD FLOOR

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SHEET NOTES:

1. REVISE SPRINKLER HEAD LAYOUT FOR FLOOR PLAN CHANGES.

NORTH

1 4TH FLOOR
1/8" = 1'-0"

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MECHANICAL LEGEND

PIPING

SYMBOL	ABBREV.	DESCRIPTION
		PIPING UP
		PIPING DOWN
S = .01		SLOPE OF PIPE IN DECIMALS OF FEET
		CAPPED PIPE
		PIPE REDUCING FITTING: CONCENTRIC, ECCENTRIC
		DIRECTION OF FLOW
		UNION
	DV	DRAIN VALVE
	BV	BALL VALVE
	AV	AUTOMATIC CONTROL VALVE: 2-WAY

DUCTWORK

DOUBLE-LINE SYMBOL	SINGLE-LINE SYMBOL	DESCRIPTION
	SA	RECTANGULAR SUPPLY AIR DUCT UP
	RA	RECTANGULAR RETURN AIR DUCT UP
	EA	RECTANGULAR EXHAUST AIR UP
		RECTANGULAR SUPPLY AIR DUCT UP
		RECTANGULAR RETURN AIR DN
		RECTANGULAR EXHAUST AIR or OUTSIDE AIR DN
		ROUND DUCTWORK UP
		ROUND DUCTWORK DOWN
		TURN VANE ELBOW
		STANDARD RADIUS ELBOW
		FLEXIBLE DUCT CONNECTION
12x6	12x6	DUCT SIZE: WIDTH x DEPTH
SD-1 6x6-3W 100		DIFFUSER TYPE SIZE - BLOW PATTERN (IF NOT 4-WAY) AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
RG-1 10x6 200		GRILLE TYPE SIZE AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
EG-1 10x6 200		GRILLE TYPE SIZE AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
SD-1 10x6 200		DIFFUSER OR GRILLE TYPE SIZE AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
SD - 2 48-2-1'0"9 200		SLOT DIFFUSER TYPE LENGTH - # OF SLOTS - INLET SIZE AIR VOLUME IN CUBIC FEET per MINUTE (CFM)
		INTERNALLY LINED OR DOUBLE WALL DUCTWORK
		MANUAL VOLUME DAMPER
	FD	COMBINATION FIRE/SMOKE DAMPER
		CONCENTRIC TRANSITION
		ECCENTRIC TRANSITION
RECT. ROUND		RECTANGULAR TO ROUND TRANSITION
		45 DEGREE LATERAL, BRANCH, ROUND
		45 DEGREE ENTRY BRANCH, ROUND OR RECTANGULAR
		CONICAL BRANCH, ROUND

GENERAL

SYMBOL	ABBREVIATION	DESCRIPTION
(E)		EXISTING
OR dia		DIAMETER
		NEW TO EXISTING POINT OF CONNECTION
2		NOTE REFERENCE MARKER
2 / M-12 — 2 / M-501	PLAN OR DETAIL NUMBER / SHEET NUMBER	PLAN OR DETAIL REFERENCE MARKER
A / M-401	SECTION LETTER / SHEET NUMBER	SECTION REFERENCE MARKER
EF / 2	EQUIPMENT TYPE / EQUIPMENT NUMBER	EQUIPMENT MARKER
208		ROOM NUMBER
		EXISTING SHOWN LIGHT
		NEW WORK SHOWN BOLD
		EXISTING TO BE REMOVED
		AREA NOT IN PROJECT SCOPE

CONTROLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PROCESS PIPING SIGNAL	AI / ALARM	BAS INPUT/OUTPUT POINT AI = ANALOG INPUT AO = ANALOG OUTPUT C = COMMUNICATION DI = DIGITAL INPUT DO = DIGITAL OUTPUT FUNCTION DESIGNATION S/S = START/STOP
	ELECTRICAL SIGNAL		
AHU-1	SPACE SENSOR UNIT		
CO2/AHU-1 SENSOR	SPACE CARBON DIOXIDE		
T	TEMPERATURE MEASUREMENT		
G — CO	GAS CONNECTION CO2 CO		
A	ACTUATOR - ELECTRIC		

ABBREVIATIONS

ACH	AIR CHANGES PER HOUR
AFF	ABOVE FINISHED FLOOR
AFS	AUTOMATIC FIRE SPRINKLER
AL	ALUMINUM
ALT	ALTERNATE
APD	AIR PRESSURE DROP
BAS	BUILDING AUTOMATION SYSTEM
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET per HOUR
CFM	CUBIC FEET per MINUTE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUATION
DB	DRY BULB
dba	DECIBELS ACOUSTIC
DN	DOWN
DP	DIFFERENTIAL PRESSURE
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY ERFICIENCY RATIO
EFF	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FT	FEET
FT WC	FEET WATER COLUMN
FUT	FUTURE
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GYP BD	GYPSUM WALL BOARD
HP	HORSEPOWER
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HZ	HERTZ (CYCLES PER SECOND)
IAQ	INDOOR AIR QUALITY
IE	INVERT ELEVATION
IN	INCHES
IN WC	INCHES WATER COLUMN
IPLV	INTEGRATED PART LOAD VALUE
IW	INDIRECT WASTE
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
Ma	MILLIAMPERE
MAX	MAXIMUM
MBH	THOUSAND BTUs per HOUR
MCA	MINIMUM CIRCUIT AMPS
MFGR	MANUFACTURER
MIN	MINIMUM
MOP	MAX. OVERCURRENT PROTECTION
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPLV	NON-STANDARD PART LOAD VALUE
NPSH	NET POSITIVE SUCTION HEAD
OFCI	OWNER FURNISHED/ CONTRACTOR INSTALLED
PD	PRESSURE DROP
PH	PHASE
PPH	POUNDS per HOUR
PSI	POUNDS per SQUARE INCH GAUGE
REQ'D	REQUIRED
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS per MINUTE
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SUPPLY FAN
SS	STAINLESS STEEL
STL	STEEL
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE

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Revisions:

Drawn by: TKO
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MECHANICAL LEGEND & GENERAL NOTES

CONSTRUCTION SET

M001

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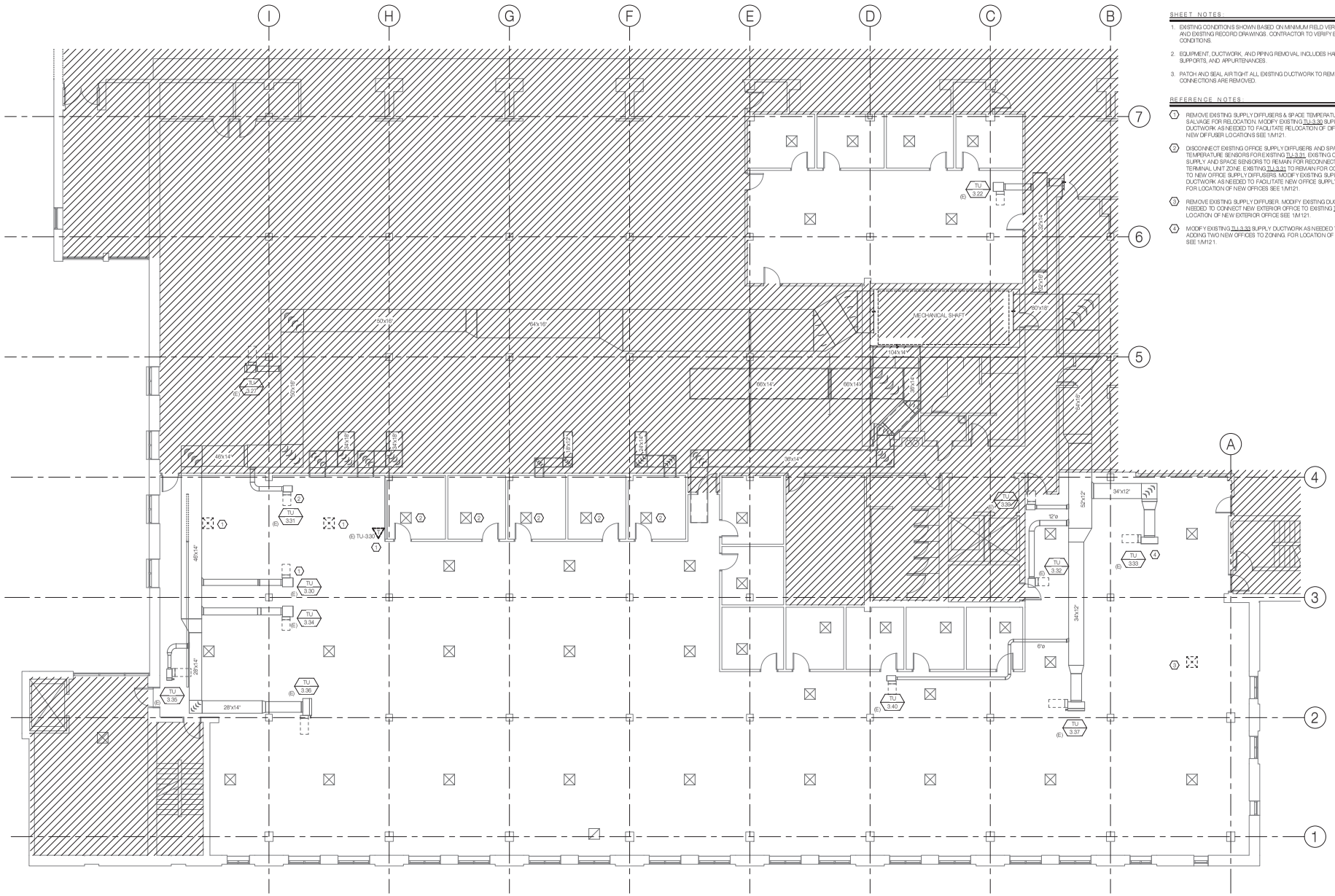

NORTH

1 MECHANICAL DEMOLITION PLAN - THIRD FLOOR
1/8" = 1'-0"

SHEET NOTES:

1. EXISTING CONDITIONS SHOWN BASED ON MINIMUM FIELD VERIFICATION AND EXISTING RECORD DRAWINGS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.
2. EQUIPMENT, DUCTWORK, AND PIPING REMOVAL INCLUDES HANGERS, SUPPORTS, AND APPURTENANCES.
3. PATCH AND SEAL AIR TIGHT ALL EXISTING DUCTWORK TO REMAIN, WHERE CONNECTIONS ARE REMOVED.

REFERENCE NOTES:

1. REMOVE EXISTING SUPPLY DIFFUSERS & SPACE TEMPERATURE SENSOR, SALVAGE FOR RELOCATION. MODIFY EXISTING TU-3.30 SUPPLY DUCTWORK AS NEEDED TO FACILITATE RELOCATION OF DIFFUSERS. FOR NEW DIFFUSER LOCATIONS SEE 1/M121.
2. DISCONNECT EXISTING OFFICE SUPPLY DIFFUSERS AND SPACE TEMPERATURE SENSORS FOR EXISTING TU-3.31. EXISTING OFFICE SUPPLY AND SPACE SENSORS TO REMAIN FOR RECONNECTION TO NEW TERMINAL UNIT ZONE. EXISTING TU-3.31 TO REMAIN FOR CONNECTION TO NEW OFFICE SUPPLY DIFFUSERS. MODIFY EXISTING SUPPLY DUCTWORK AS NEEDED TO FACILITATE NEW OFFICE SUPPLY DIFFUSERS. FOR LOCATION OF NEW OFFICES SEE 1/M121.
3. REMOVE EXISTING SUPPLY DIFFUSER. MODIFY EXISTING DUCTWORK AS NEEDED TO CONNECT NEW EXTERIOR OFFICE TO EXISTING TU-3.37. FOR LOCATION OF NEW EXTERIOR OFFICE SEE 1/M121.
4. MODIFY EXISTING TU-3.33 SUPPLY DUCTWORK AS NEEDED TO FACILITATE ADDING TWO NEW OFFICES TO ZONING. FOR LOCATION OF NEW OFFICES SEE 1/M121.

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MECHANICAL DEMOLITION - THIRD FLOOR

CONSTRUCTION SET

M101

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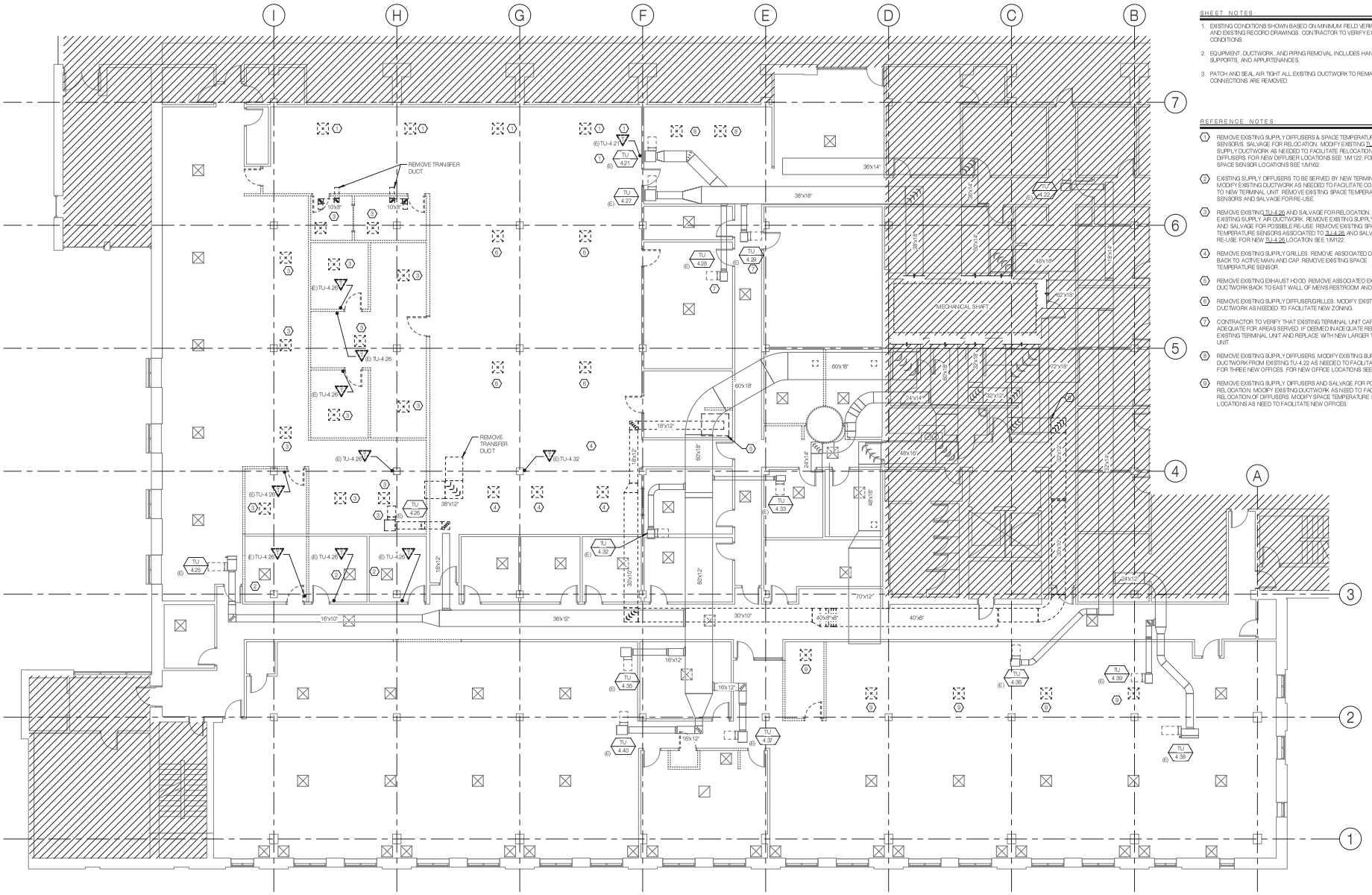

NORTH

1 MECHANICAL DEMOLITION PLAN - FOURTH FLOOR
1/8" = 1'-0"

SHEET NOTES:

1. EXISTING CONDITIONS SHOWN BASED ON MINIMUM FIELD VERIFICATION AND EXISTING RECORD DRAWINGS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.
2. EQUIPMENT, DUCTWORK, AND PIPING REMOVAL INCLUDES HANGERS, SUPPORTS, AND APPURTENANCES.
3. PATCH AND SEAL AIR TIGHT ALL EXISTING DUCTWORK TO REMAIN, WHERE CONNECTIONS ARE REMOVED.

REFERENCE NOTES:

1. REMOVE EXISTING SUPPLY DIFFUSERS & SPACE TEMPERATURE SENSOR/S. SALVAGE FOR RELOCATION. MODIFY EXISTING TU-4.21 SUPPLY DUCTWORK AS NEEDED TO FACILITATE RELOCATION OF DIFFUSERS. FOR NEW DIFFUSER LOCATIONS SEE 1/M122. FOR NEW SPACE SENSOR LOCATIONS SEE 1/M162.
2. EXISTING SUPPLY DIFFUSERS TO BE SERVED BY NEW TERMINAL UNIT. MODIFY EXISTING DUCTWORK AS NEEDED TO FACILITATE CONNECTION TO NEW TERMINAL UNIT. REMOVE EXISTING SPACE TEMPERATURE SENSORS AND SALVAGE FOR RE-USE.
3. REMOVE EXISTING TU-4.26 AND SALVAGE FOR RELOCATION. REMOVE EXISTING SUPPLY AIR DUCTWORK. REMOVE EXISTING SUPPLY DIFFUSERS AND SALVAGE FOR POSSIBLE RE-USE. REMOVE EXISTING SPACE TEMPERATURE SENSORS ASSOCIATED TO TU-4.26 AND SALVAGE FOR RE-USE. FOR NEW TU-4.26 LOCATION SEE 1/M122.
4. REMOVE EXISTING SUPPLY GRILLES. REMOVE ASSOCIATED DUCTWORK BACK TO ACTIVE MAIN AND CAP. REMOVE EXISTING SPACE TEMPERATURE SENSOR.
5. REMOVE EXISTING EXHAUST HOOD. REMOVE ASSOCIATED EXHAUST DUCTWORK BACK TO EAST WALL OF MENS RESTROOM AND CAP.
6. REMOVE EXISTING SUPPLY DIFFUSERS/GRILLES. MODIFY EXISTING SUPPLY DUCTWORK AS NEEDED TO FACILITATE NEW ZONING.
7. CONTRACTOR TO VERIFY THAT EXISTING TERMINAL UNIT CAPACITY IS ADEQUATE FOR AREAS SERVED. IF DEEMED INADEQUATE REMOVE EXISTING TERMINAL UNIT AND REPLACE WITH NEW LARGER TERMINAL UNIT.
8. REMOVE EXISTING SUPPLY DIFFUSERS. MODIFY EXISTING SUPPLY AIR DUCTWORK FROM EXISTING TU-4.22 AS NEEDED TO FACILITATE SUPPLY FOR THREE NEW OFFICES. FOR NEW OFFICE LOCATIONS SEE 1/M122.
9. REMOVE EXISTING SUPPLY DIFFUSERS AND SALVAGE FOR POSSIBLE RELOCATION. MODIFY EXISTING DUCTWORK AS NEED TO FACILITATE RELOCATION OF DIFFUSERS. MODIFY SPACE TEMPERATURE SENSOR LOCATIONS AS NEED TO FACILITATE NEW OFFICES.

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MECHANICAL DEMOLITION - FOURTH FLOOR

CONSTRUCTION SET

M102

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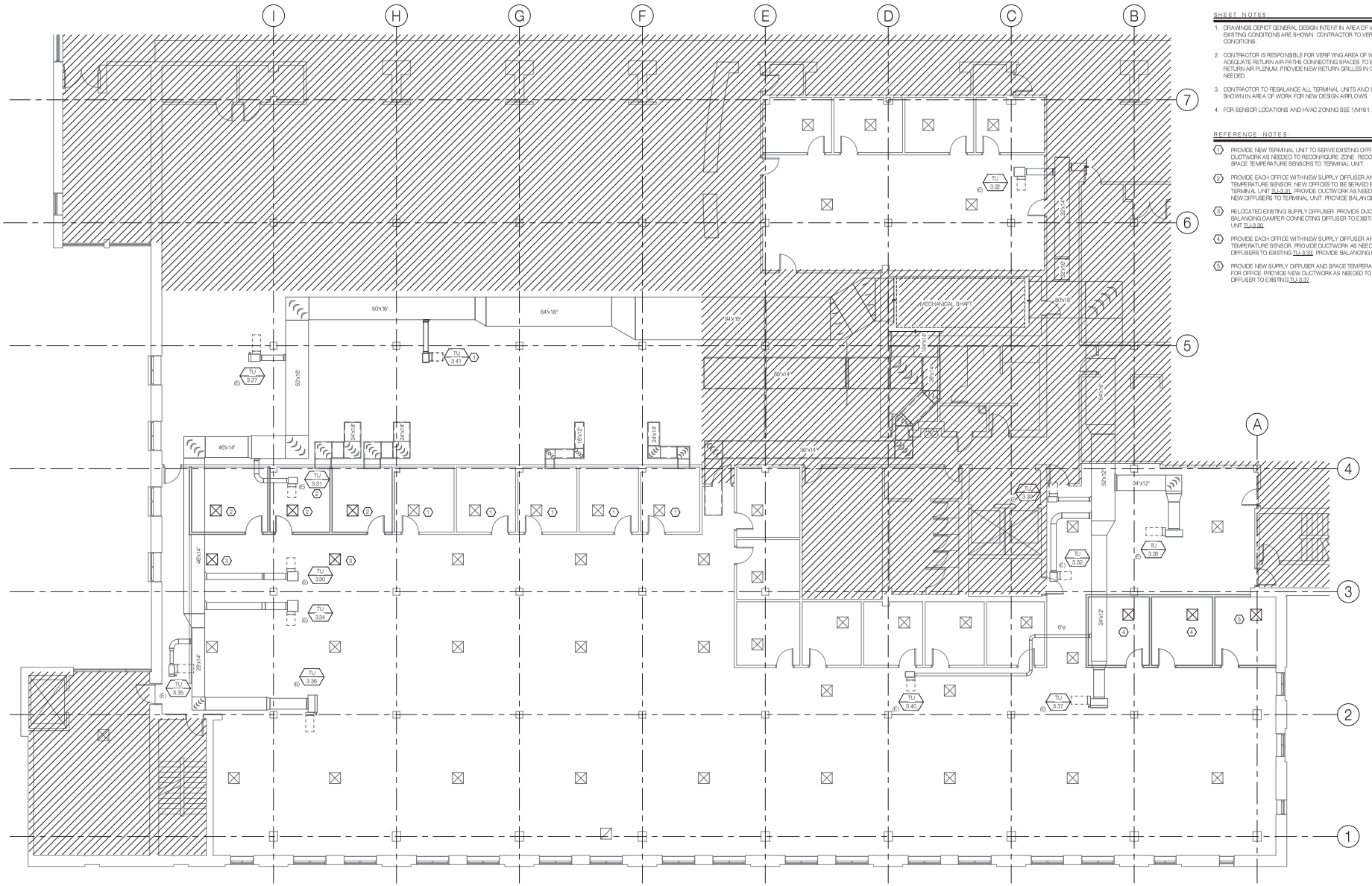

NORTH

1 AIR DISTRIBUTION PLAN - THIRD FLOOR
1/8" = 1'-0"

SHEET NOTES:

1. DRAWINGS DEPICT GENERAL DESIGN INTENT IN AREA OF WORK. NOT AL EXISTING CONDITIONS ARE SHOWN. CONTRACTOR TO VERIFY EXISTING CONDITIONS.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AREA OF WORK HAVE ADEQUATE RETURN AIR PATHS CONNECTING SPACES TO EXISTING OPEN RETURN AIR PLENUM. PROVIDE NEW RETURN GRILLES IN CEILING AS NEEDED.
3. CONTRACTOR TO REBALANCE ALL TERMINAL UNITS AND SUPPLY OUTLETS SHOWN IN AREA OF WORK FOR NEW DESIGN AIRFLOWS.
4. FOR SENSOR LOCATIONS AND HVAC ZONING SEE 1/M161.

REFERENCE NOTES:

1. PROVIDE NEW TERMINAL UNIT TO SERVE EXISTING OFFICES. PROVIDE DUCTWORK AS NEEDED TO RECONFIGURE ZONE. RECONNECT EXISTING SPACE TEMPERATURE SENSORS TO TERMINAL UNIT.
2. PROVIDE EACH OFFICE WITH NEW SUPPLY DIFFUSER AND SPACE TEMPERATURE SENSOR. NEW OFFICES TO BE SERVED BY EXISTING TERMINAL UNIT TU-3.31. PROVIDE DUCTWORK AS NEEDED TO CONNECT NEW DIFFUSERS TO TERMINAL UNIT. PROVIDE BALANCING DAMPERS.
3. RELOCATED EXISTING SUPPLY DIFFUSER. PROVIDE DUCTWORK AND BALANCING DAMPER CONNECTING DIFFUSER TO EXISTING TERMINAL UNIT TU-3.30.
4. PROVIDE EACH OFFICE WITH NEW SUPPLY DIFFUSER AND SPACE TEMPERATURE SENSOR. PROVIDE DUCTWORK AS NEED TO CONNECT DIFFUSERS TO EXISTING TU-3.33. PROVIDE BALANCING DAMPERS.
5. PROVIDE NEW SUPPLY DIFFUSER AND SPACE TEMPERATURE SENSOR FOR OFFICE. PROVIDE NEW DUCTWORK AS NEEDED TO CONNECT DIFFUSER TO EXISTING TU-3.33.

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AIR DISTRIBUTION PLAN - THIRD FLOOR

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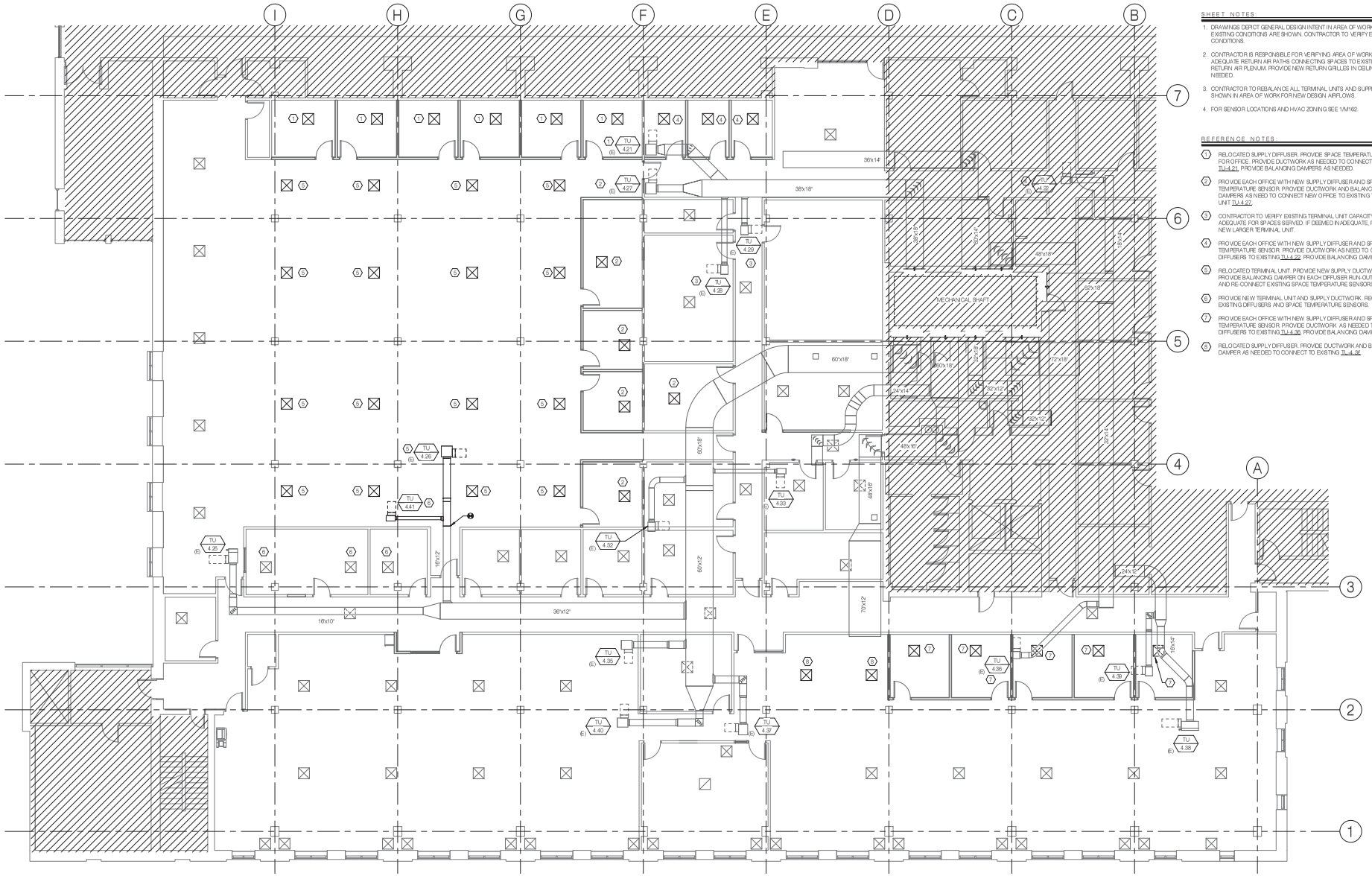

NORTH

1 AIR DISTRIBUTION PLAN - FOURTH FLOOR
1/8" = 1'-0"

SHEET NOTES:

1. DRAWINGS DEPICT GENERAL DESIGN INTENT IN AREA OF WORK. NOT ALL EXISTING CONDITIONS ARE SHOWN. CONTRACTOR TO VERIFY EXISTING CONDITIONS.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AREA OF WORK HAVE ADEQUATE RETURN AIR PATHS CONNECTING SPACES TO EXISTING OPEN RETURN AIR PLENUM. PROVIDE NEW RETURN GRILLES IN CEILING AS NEEDED.
3. CONTRACTOR TO REBALANCE ALL TERMINAL UNITS AND SUPPLY OUTLETS SHOWN IN AREA OF WORK FOR NEW DESIGN AIRFLOWS.
4. FOR SENSOR LOCATIONS AND HVAC ZONING SEE 1/M162.

REFERENCE NOTES:

1. RELOCATED SUPPLY DIFFUSER. PROVIDE SPACE TEMPERATURE SENSOR FOR OFFICE. PROVIDE DUCTWORK AS NEEDED TO CONNECT TO EXISTING TU-4.21. PROVIDE BALANCING DAMPERS AS NEEDED.
2. PROVIDE EACH OFFICE WITH NEW SUPPLY DIFFUSER AND SPACE TEMPERATURE SENSOR. PROVIDE DUCTWORK AND BALANCING DAMPERS AS NEED TO CONNECT NEW OFFICE TO EXISTING TERMINAL UNIT TU-4.27.
3. CONTRACTOR TO VERIFY EXISTING TERMINAL UNIT CAPACITY IS ADEQUATE FOR SPACES SERVED. IF DEEMED INADEQUATE, PROVIDE NEW LARGER TERMINAL UNIT.
4. PROVIDE EACH OFFICE WITH NEW SUPPLY DIFFUSER AND SPACE TEMPERATURE SENSOR. PROVIDE DUCTWORK AS NEED TO CONNECT DIFFUSERS TO EXISTING TU-4.22. PROVIDE BALANCING DAMPERS.
5. RELOCATED TERMINAL UNIT. PROVIDE NEW SUPPLY DUCTWORK. PROVIDE BALANCING DAMPER ON EACH DIFFUSER RUN-OUT. RE-LOCATE AND RE-CONNECT EXISTING SPACE TEMPERATURE SENSORS.
6. PROVIDE NEW TERMINAL UNIT AND SUPPLY DUCTWORK. RECONNECT EXISTING DIFFUSERS AND SPACE TEMPERATURE SENSORS.
7. PROVIDE EACH OFFICE WITH NEW SUPPLY DIFFUSER AND SPACE TEMPERATURE SENSOR. PROVIDE DUCTWORK AS NEEDED TO CONNECT DIFFUSERS TO EXISTING TU-4.36. PROVIDE BALANCING DAMPERS.
8. RELOCATED SUPPLY DIFFUSER. PROVIDE DUCTWORK AND BALANCING DAMPER AS NEEDED TO CONNECT TO EXISTING TU-4.36.

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HEA Project no. 17050
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AIR DISTRIBUTION PLAN - FOURTH FLOOR

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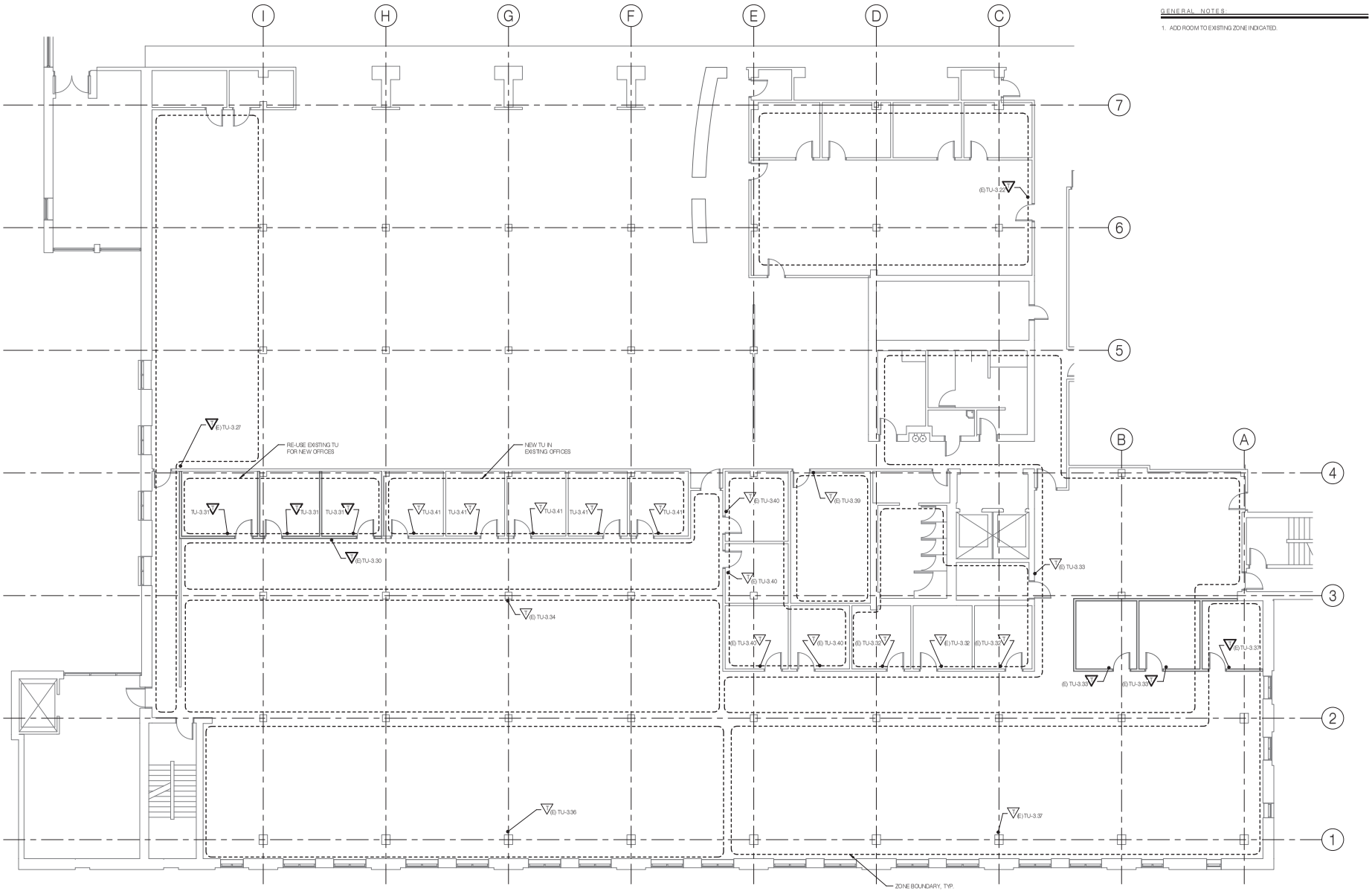
GENERAL NOTES:

1. ADD ROOM TO EXISTING ZONE INDICATED.



NORTH

1 HVAC ZONING PLAN - THIRD FLOOR

1/8" = 1'-0"

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ZONING PLAN - THIRD FLOOR

CONSTRUCTION SET

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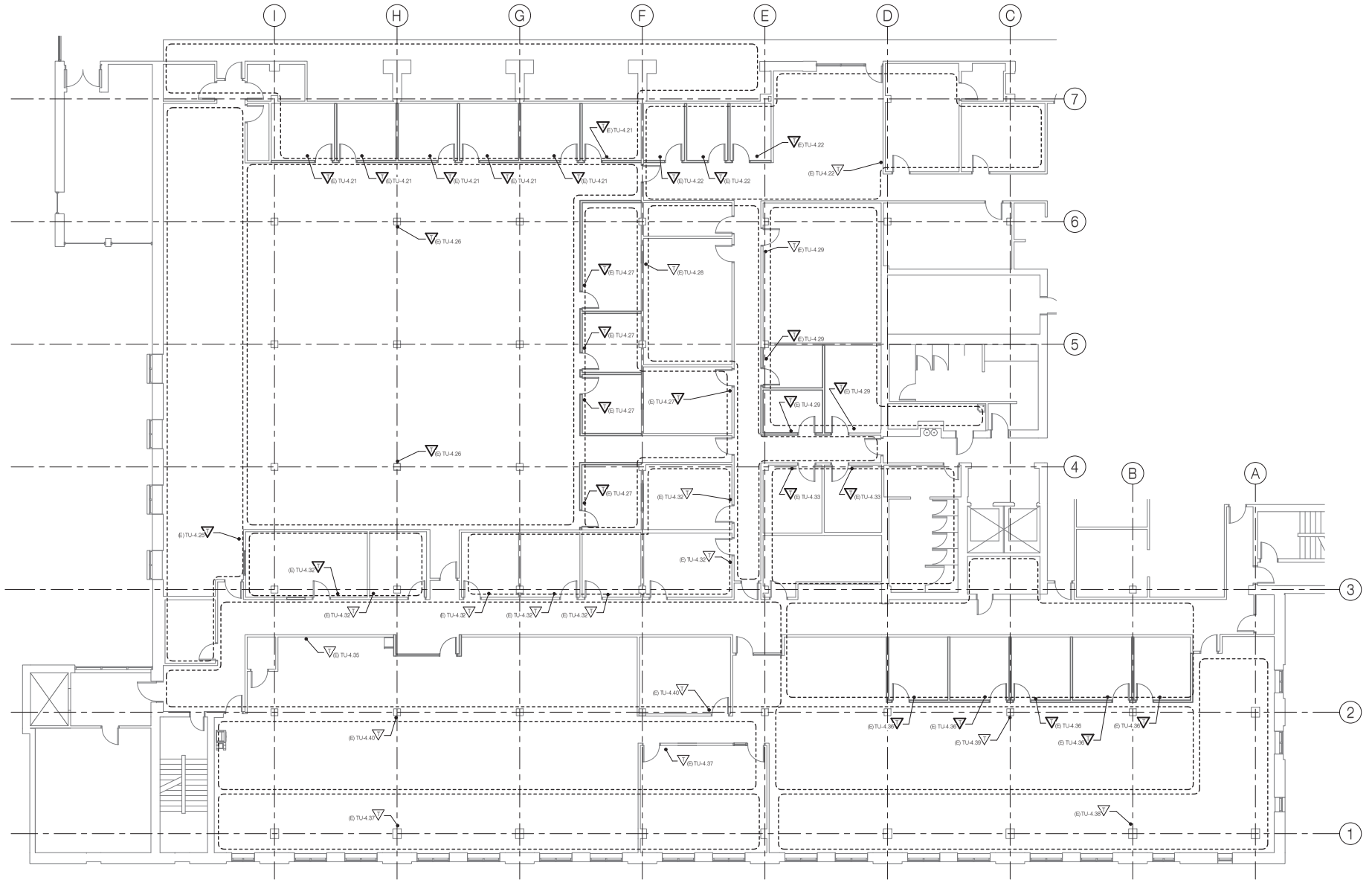

NORTH

1 HVAC ZONING PLAN - FOURTH FLOOR
1/8" = 1'-0"

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HEA Project no. 17050
Date: AUGUST 17, 2018
CONSTRUCTION SET
Revisions:

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ZONING PLAN - FOURTH FLOOR

CONSTRUCTION SET

M162

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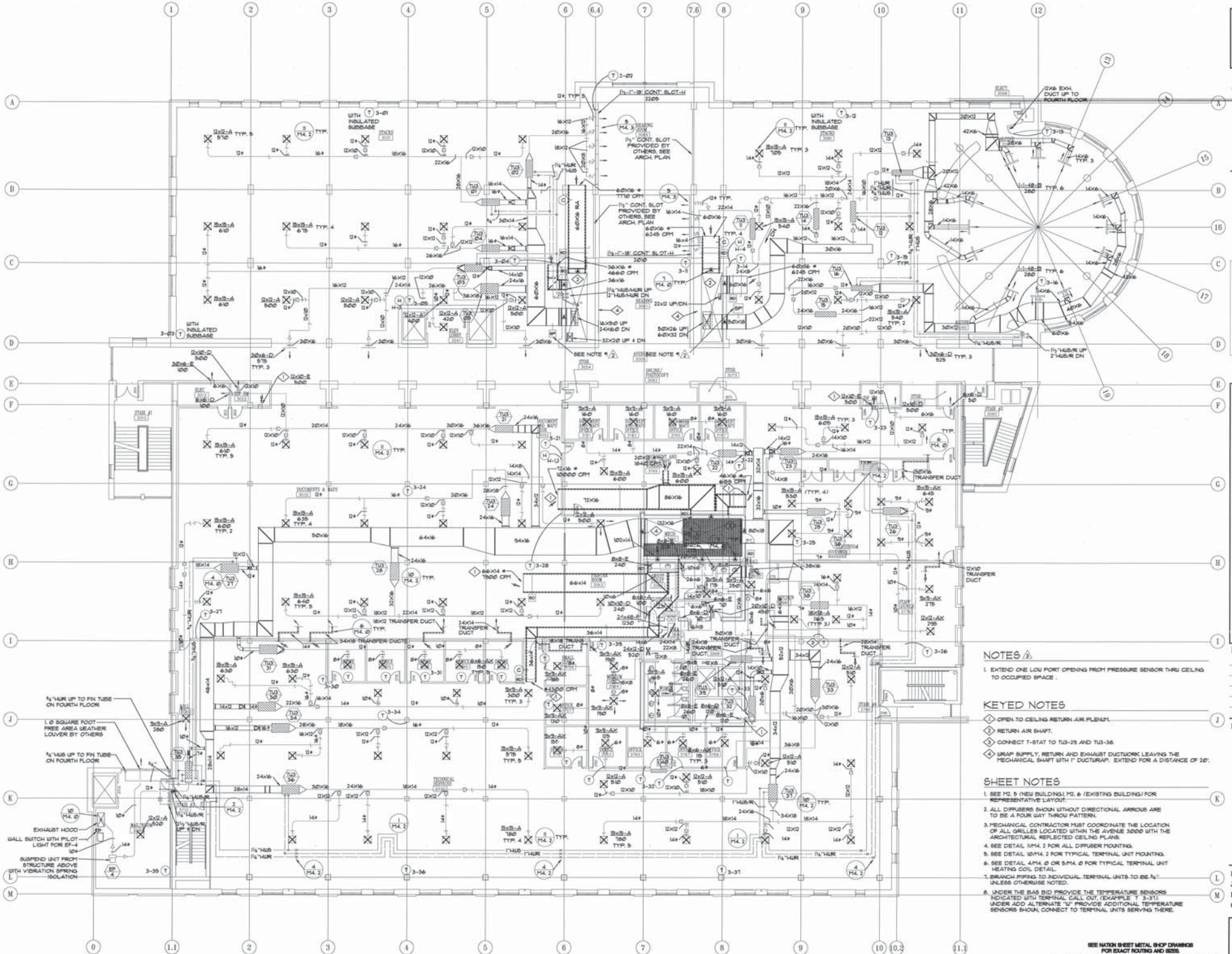

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DATE: MARCH 1, 1999

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NOTES

1. EXTEND ONE LOU PORT OPENING FROM PRESSURE SENSOR THRU CEILING TO OCCUPIED SPACE.

KEYED NOTES

1. OPEN TO CEILING RETURN AIR PLENUM.
2. RETURN AIR SHAFT.
3. CONNECT T-STAT TO TU3-29 AND TU3-38.
4. WRAP SUPPLY, RETURN AND EXHAUST DUCTWORK LEAVING THE MECHANICAL SHAFT WITH 1" DUCTWRAP. EXTEND FOR A DISTANCE OF 20'.

SHEET NOTES

1. SEE M2.5 (NEW BUILDING) M2.6 (EXISTING BUILDING) FOR REPRESENTATIVE LAYOUT.
2. ALL DIFFUSERS SHOWN WITHOUT DIRECTIONAL ARROWS ARE TO BE A FOUR WAY THROW PATTERN.
3. MECHANICAL CONTRACTOR MUST COORDINATE THE LOCATION OF ALL GRILLES LOCATED WITHIN THE AVENUE 3000 WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.
4. SEE DETAIL 11/M4.2 FOR ALL DIFFUSER MOUNTING.
5. SEE DETAIL 10/M4.2 FOR TYPICAL TERMINAL UNIT MOUNTING.
6. SEE DETAIL 4/M4.6 OR 5/M4.6 FOR TYPICAL TERMINAL UNIT HEATING COIL DETAIL.
7. BRANCH PIPING TO INDIVIDUAL TERMINAL UNITS TO BE ¾" UNLESS OTHERWISE NOTED.
8. UNDER THE BAS BID PROVIDE THE TEMPERATURE SENSORS INDICATED WITH TERMINAL CALL OUT, (EXAMPLE T 3-31). UNDER ADD ALTERNATE "U" PROVIDE ADDITIONAL TEMPERATURE SENSORS SHOWN, CONNECT TO TERMINAL UNITS SERVING THERE.

SEE NATKIN SHEET METAL SHOP DRAWINGS FOR EXACT ROUTING AND SIZES.

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Drawing Title
PLAN
THIRD FLOOR
HVAC

1/8" = 1'-0"

Revision:

Date: MARCH 1, 1999
Job No.: 9805
Drawn by: BAS
Checked by: RLH

Drawing No.
M2.3

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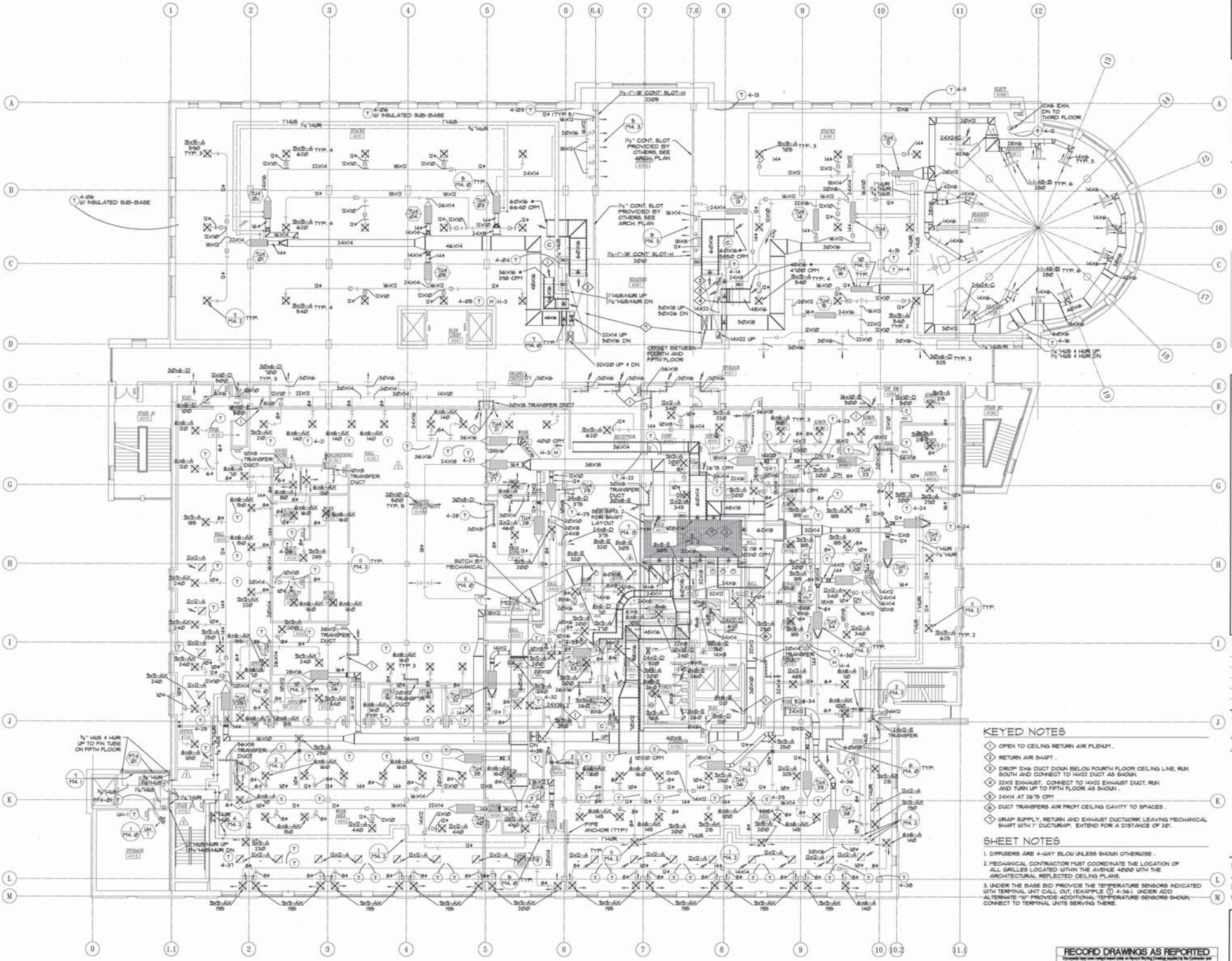

KEYED NOTES

1. OPEN TO CEILING RETURN AIR PLENUM.
2. RETURN AIR SHAFT.
3. DROP 12X6 DUCT DOWN BELOW FOURTH FLOOR CEILING LINE, RUN SOUTH AND CONNECT TO 14X22 DUCT AS SHOWN.
4. 22X12 EXHAUST. CONNECT TO 14X22 EXHAUST DUCT, RUN AND TURN UP TO FIFTH FLOOR AS SHOWN.
5. 24X14 AT 26'75 CFM
6. DUCT TRANSFERS AIR FROM CEILING CAVITY TO SPACES.
7. WRAP SUPPLY, RETURN AND EXHAUST DUCTWORK LEAVING MECHANICAL SHAFT WITH 1" DUCTWRAP. EXTEND FOR A DISTANCE OF 20'.

SHEET NOTES

1. DIFFUSERS ARE 4-WAY BLOW UNLESS SHOWN OTHERWISE.
2. MECHANICAL CONTRACTOR MUST COORDINATE THE LOCATION OF ALL GRILLES LOCATED WITHIN THE AVENUE 4000 WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.
3. UNDER THE BASE BID PROVIDE THE TEMPERATURE SENSORS INDICATED WITH TERMINAL UNIT CALL OUT, (EXAMPLE (T) 4-36). UNDER ADD ALTERNATE "W" PROVIDE ADDITIONAL TEMPERATURE SENSORS SHOWN, CONNECT TO TERMINAL UNITS SERVING THERE.

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DATE: MARCH 1, 1999

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Drawing Title
PLAN
FOURTH FLOOR
HVAC

1/8" = 1'-0"

Revision:
1. ADDENDUM NO. 1 APRIL 1, 1996
2. JULY 22, 1996

Date: MARCH 1, 1999
Job No.: 9005
Drawn by: BAS
Checked by: RLH

Drawing No.
M2.4

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ELECTRICAL LEGEND

LOW-VOLTAGE ELECTRICAL CONDUCTORS & CABLES

NEW CONCEALED RACEWAY AND WIRE. NUMBER OF SLASHES INDICATES NUMBER OF CONDUCTORS IF MORE THAN TWO. SIZE OTHER THAN #12 AS NOTED. (APPLIES TO ALL WIRING SYMBOLS)

UNDERGROUND OR UNDERFLOOR RACEWAY

HOMERUN

GROUNDING & BONDING FOR ELECTRICAL SYSTEMS

GROUND

RACEWAYS & BOXES FOR ELECTRICAL SYSTEMS

CONDUIT UP

CONDUIT DOWN

FLEXIBLE CONNECTION

JUNCTION BOX

STUB

CABLE TRAY FOR ELECTRICAL SYSTEMS

CT — CABLE TRAY

LIGHTING CONTROL EQUIPMENT

OS/A — CEILING MOUNTED OCCUPANCY SENSOR SUBSCRIPT INDICATES TYPE

R — RELAY

LIGHTING CONTROL PANEL

LOW-VOLTAGE DISTRIBUTION

ELECTRICAL EQUIPMENT AS INDICATED DRAWINGS

PANELBOARDS

LV-1 / 208 / 225 / 3PH 4W — PANELBOARD - VOLTAGE AND SIZE AS NOTED

SURFACE BRANCH PANELBOARD (120/208V)

SURFACE BRANCH PANELBOARD (277/480V)

RECESSED BRANCH PANELBOARD (120/208V)

RECESSED BRANCH PANELBOARD (277/480V)

ELECTRICAL CABINETS & ENCLOSURES

CABINET, SURFACE MOUNTED. TYPE AS NOTED.

ELECTRICAL EQUIPMENT AS INDICATED ON DRAWINGS

WIRING DEVICES

WALL SWITCH, 'a'= CIRCUITS CONTROLLED, 'K'= KEY SWITCH, 'P'= W/PILOT LIGHT, '2'= DOUBLE POLE, '3'= THREE-WAY, 'M'= AUTOMATIC WALL SWITCH, 'D'= DIMMING SWITCH, 'TS'= DIGITAL TIMER SWITCH

L6-30 — SPECIAL RECEPTACLE, NEMA CONFIGURATION INDICATED

GFI WP — DUPLEX RECEPTACLE. WP= WEATHERPROOF, "GFI"= GROUND FAULT CIRCUIT INTERRUPTER TYPE

44" a — DUPLEX RECEPTACLE MOUNTED ABOVE STANDARD HEIGHT. HEIGHT INDICATED IN INCHES. WHERE NO HEIGHT INDICATED, MOUNT ABOVE COUNTERTOP.

DEDICATED DUPLEX RECEPTACLE WITH ISOLATED GROUND

DUPLEX RECEPTACLE, EMERGENCY POWER

QUAD RECEPTACLE

QUAD RECEPTACLE, EMERGENCY POWER

SINGLE RECEPTACLE

EQUIPMENT CONNECTION

SURFACE RECEPTACLE RACEWAY

POWER POLE

MOTOR & CIRCUIT DISCONNECTS

COMBINATION DISCONNECT AND MAGNETIC STARTER

DISCONNECT SWITCH

FUSED DISCONNECT SWITCH

MAGNETIC STARTER

MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION & LOCKABLE OFF COVER

M — MOTOR CONNECTION

LIGHTING FIXTURES

A1 — FIXTURE IDENTIFIER. FIXTURE TYPE "A1" SEE LIGHTING FIXTURE SCHEDULE.

SURFACE-MOUNT FIXTURE - DRAWN TO SCALE WHERE POSSIBLE

RECESSED FIXTURE - DRAWN TO SCALE WHERE POSSIBLE

RECESSED FIXTURE - SHADING INDICATES EMERGENCY BATTERY BALLAST, UNINTERRUPTED POWER SUPPLY OR EMERGENCY POWER BY GENERATOR (APPLIES TO ALL LUMINAIRES).

LINEAR WALL-MOUNTED LUMINAIRE

SURFACE WALL MOUNT LUMINAIRE

EXIT SIGN, WALL MOUNT - SHADED AREAS INDICATE FACES

EXIT SIGN, CEILING MOUNT - SHADED AREAS INDICATE FACES

EXIT SIGN WITH EMERGENCY LIGHTS, CEILING MOUNTED

DATA COMMUNICATIONS

COMBINATION PHONE/DATA PORT SHOWING QUANTITY OF EACH TYPE. V= VOICE (PHONE)/D=DATA

WAP — WIRELESS ACCESS POINT

FIRE DETECTION & ALARM

FIRE ALARM SYSTEM MANUAL PULL STATION

V — FIRE ALARM SYSTEM HORN: V= VOICE, WP= WEATHERPROOF

FIRE ALARM SYSTEM HORN/STROBE. MOUNT AT 84" A.F.F.

FIRE ALARM STROBE

FAAP — FIRE ALARM ANNUNCIATOR PANEL

DH — FIRE ALARM MAGNETIC DOOR HOLDER

FIRE ALARM FLOW SWITCH

FIRE ALARM TAMPER SWITCH

D — FIRE ALARM SYSTEM SMOKE DETECTOR: D = DUCT DETECTOR, R = RELAY BASE

COMBINATION FIXED TEMPERATURE AND RATE OF RISE DETECTOR.

FSD — FIRE/SMOKE DAMPER

S — SMOKE DAMPER

FSCP — FIRE SUPPRESSION CONTROL PANEL

FACP — FIRE ALARM CONTROL PANEL

M — MANUAL DISCHARGE STATION

GENERAL

EF-1 — EQUIPMENT IDENTIFIER (EXHAUST FAN 1 SHOWN)

1 — SHEET REFERENCE NOTE

2/E-121 — 2/E-501 — PLAN OR DETAIL NUMBER / SHEET NUMBER

EXISTING WORK SHOWN LIGHT

NEW WORK SHOWN BOLD

EXISTING TO BE REMOVED

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	IDF	INTERMEDIATE DISTRIBUTION FRAME
BLDG	BUILDING	L.V.	LOW VOLTAGE
C	CONDUIT	MDF	MAIN DISTRIBUTION FRAME
cd	CANDELA	MECH	MECHANICAL
CKT	CIRCUIT	MW	MICROWAVE
DIM	0-10 V DIMMING	(N)	NEW
DSP	DIGITAL SIGNAL PROCESSOR	(NL)	NEW LOCATION
(E)	EXISTING	PNL	PANEL
ELEC	ELECTRICAL	(RL)	RELOCATE
EMERG	EMERGENCY	SWBD	SWITCHBOARD
FAM	FIRE ALARM MASTER	TTB	TELEPHONE TERMINAL BOARD
GD	GARBAGE DISPOSAL	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GFI	GROUND FAULT INTERRUPTER	TYP	TYPICAL
GND	GROUND	WG	WIREGUARD
HVAC	HEATING, VENTILATING & AIR CONDITIONING	WP	WEATHERPROOF

GENERAL NOTES

1. THE FACILITY WILL REMAIN IN OPERATION DURING CONSTRUCTION.
2. COORDINATE ALL SHUTDOWNS AND CONSTRUCTION ACTIVITY WITH FACILITIES STAFF.
3. SIZE AND LOCATION OF ALL EXISTING ELECTRICAL EQUIPMENT IS APPROXIMATE. CONTRACTOR SHALL SITE VERIFY THE EXACT LOCATION OF EXISTING AND CONSTRUCT ALL WORK FROM FIELD DIMENSIONS.
4. CONTRACTOR SHALL MAKE ADJUSTMENTS NECESSARY TO ACCOMMODATE MINOR DEVIATIONS AT NO COST TO OWNER.
5. LIGHT LINE WORK INDICATES EXISTING ELECTRICAL CIRCUITRY AND OTHER ELECTRICAL EQUIPMENT. DASHED LINE WORK INDICATES ELECTRICAL DEVICES AND EQUIPMENT TO BE REMOVED.
6. WHERE EXISTING EQUIPMENT IS REMOVED AND NOT REPLACED IN THE SAME LOCATION, PATCH AND PAINT SURFACES TO MATCH ORIGINAL CONDITION.
7. REMOVE ALL ABANDONED RACEWAY AND WIRING.
8. RECONNECT ALL CIRCUITRY TO REMAINING DEVICES AND EQUIPMENT.
9. MAINTAIN ACCESSIBILITY OF EQUIPMENT AND JUNCTION BOXES AS NECESSARY AND TO OWNERS SATISFACTION.
10. RUN ALL BUILDING RACEWAY CONCEALED, UNLESS OTHERWISE NOTED.
11. CARRY GROUND WIRE IN ALL LIGHTING, POWER, AND FEEDER CIRCUITS.
12. COORDINATE ALL DEVICE LOCATIONS WITH OTHER TRADES TO AVOID POSSIBLE CONFLICTS WITH DUCTS, SPRINKLER PIPING AND OTHER OBSTACLES AFFECTING INSTALLATION.
13. PROVIDE BLANK FACE PLATES FOR ALL SWITCHES BEING REMOVED.
14. THE WORD 'PROVIDE' WHEN USED ON THESE ELECTRICAL PLANS IS INTENDED TO MEAN THAT THE ELECTRICAL CONTRACTOR IS TO FURNISH AND INSTALL THE RELATED WORK DESCRIBED UNLESS OTHERWISE NOTED.
15. THE TERM 'WIRING' AS USED ON THE DRAWINGS INCLUDES BOTH THE RACEWAY AND CONDUCTORS WITHIN.
16. ALL DEMOLISHED EQUIPMENT SHALL BE SALVAGED TO OWNER.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	EXAMPLE MANUFACTURER	LAMP	NOTES
R	NOMINAL 13.5'X 8" X 2" LED WALL MOUNTED 'IN USE RECORDING' SIGN	ODLE S290 SERIES S292-D-277-ROF-STF-L OR APPROVED	LED 4 W/FT	MOUNTING :WALL MOUNTED SURFACE HOUSING :EXTRUDED ALUMINUM WITH POWDER COATED BLACK FINISH LENS/REFL :SILK SCREENED WHITE BUTYRATE SNAP-IN PANEL VOLTAGE :277V BALLAST :ELECTRONIC DRIVER MISC :SIGN SHALL READ "IN USE RECORDING" COORDINATE LOCATION WITH ARCHITECT

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HEA Project no. 17050
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CONSTRUCTION SET

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1	Date 1	Revision 1

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ELECTRICAL LEGEND & GENERAL NOTES

E001

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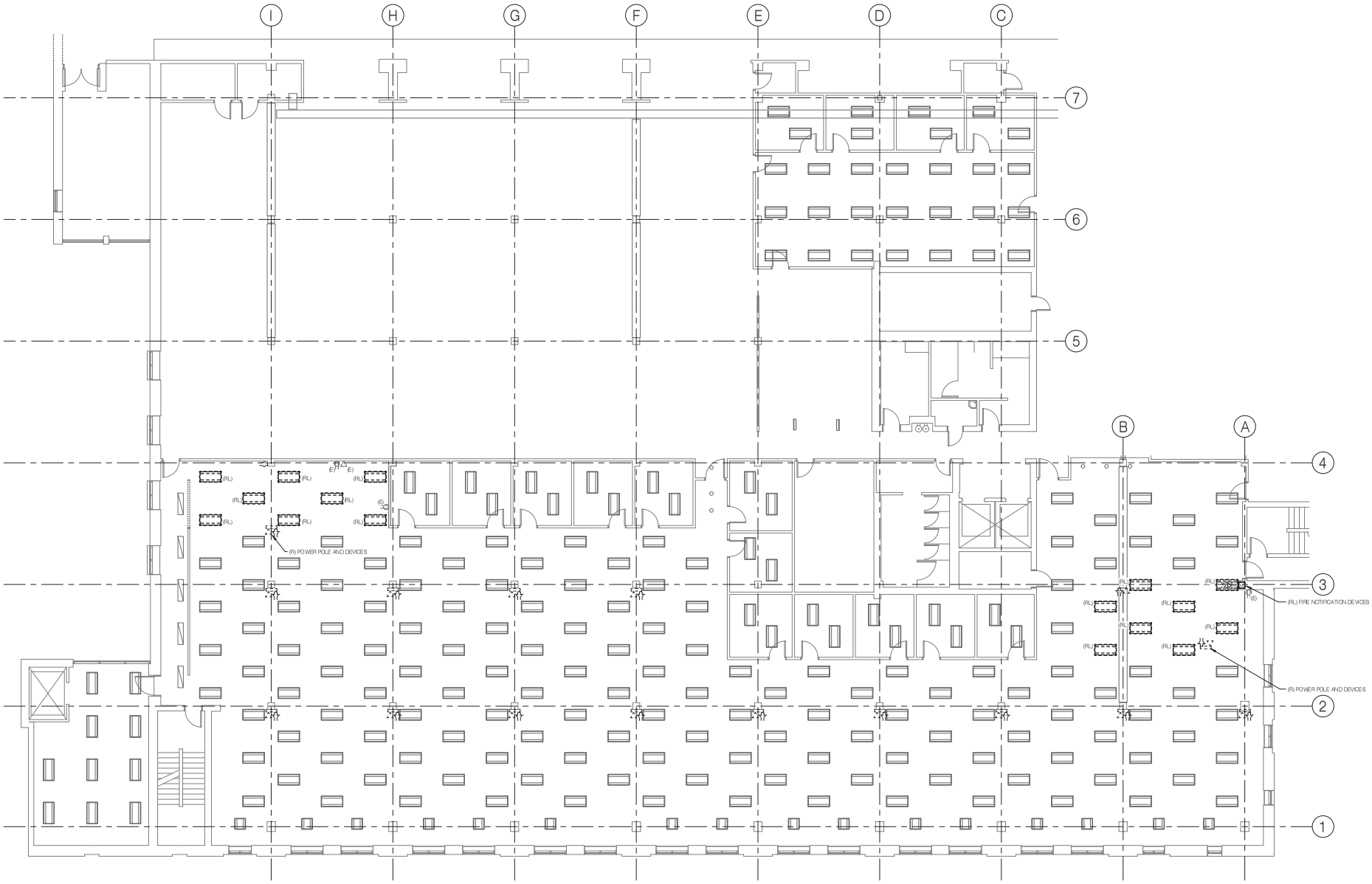

NORTH

1 ELECTRICAL DEMOLITION PLAN - THIRD FLOOR
1/8" = 1'-0"

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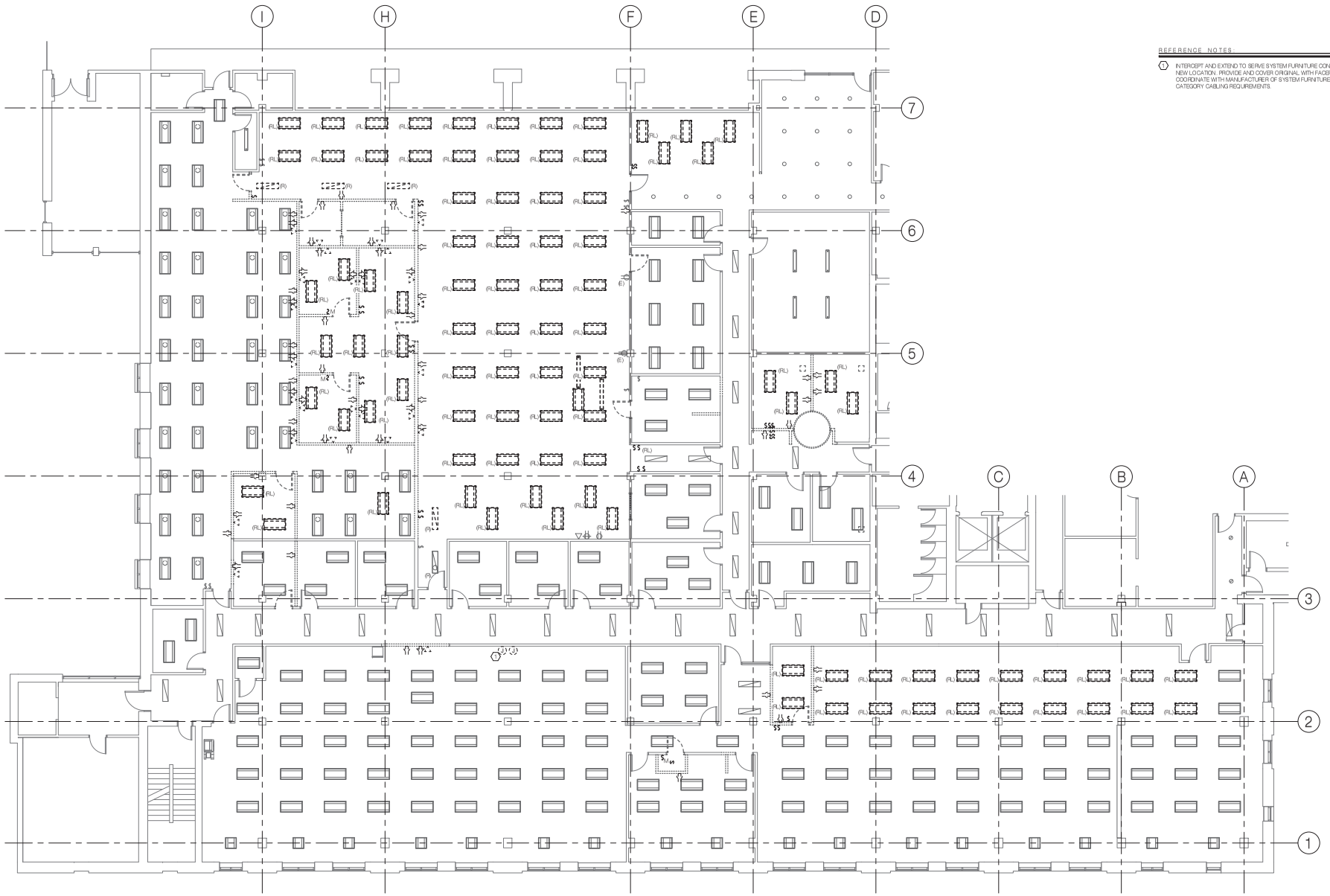

NORTH

1 ELECTRICAL DEMOLITION PLAN - FOURTH FLOOR
1/8" = 1'-0"

REFERENCE NOTES:

1. INTERCEPT AND EXTEND TO SERVE SYSTEM FURNITURE CONNECTION IN NEW LOCATION. PROVIDE AND COVER ORIGINAL WITH FACEPLATE. COORDINATE WITH MANUFACTURER OF SYSTEM FURNITURE FOR CATEGORY CABLING REQUIREMENTS.

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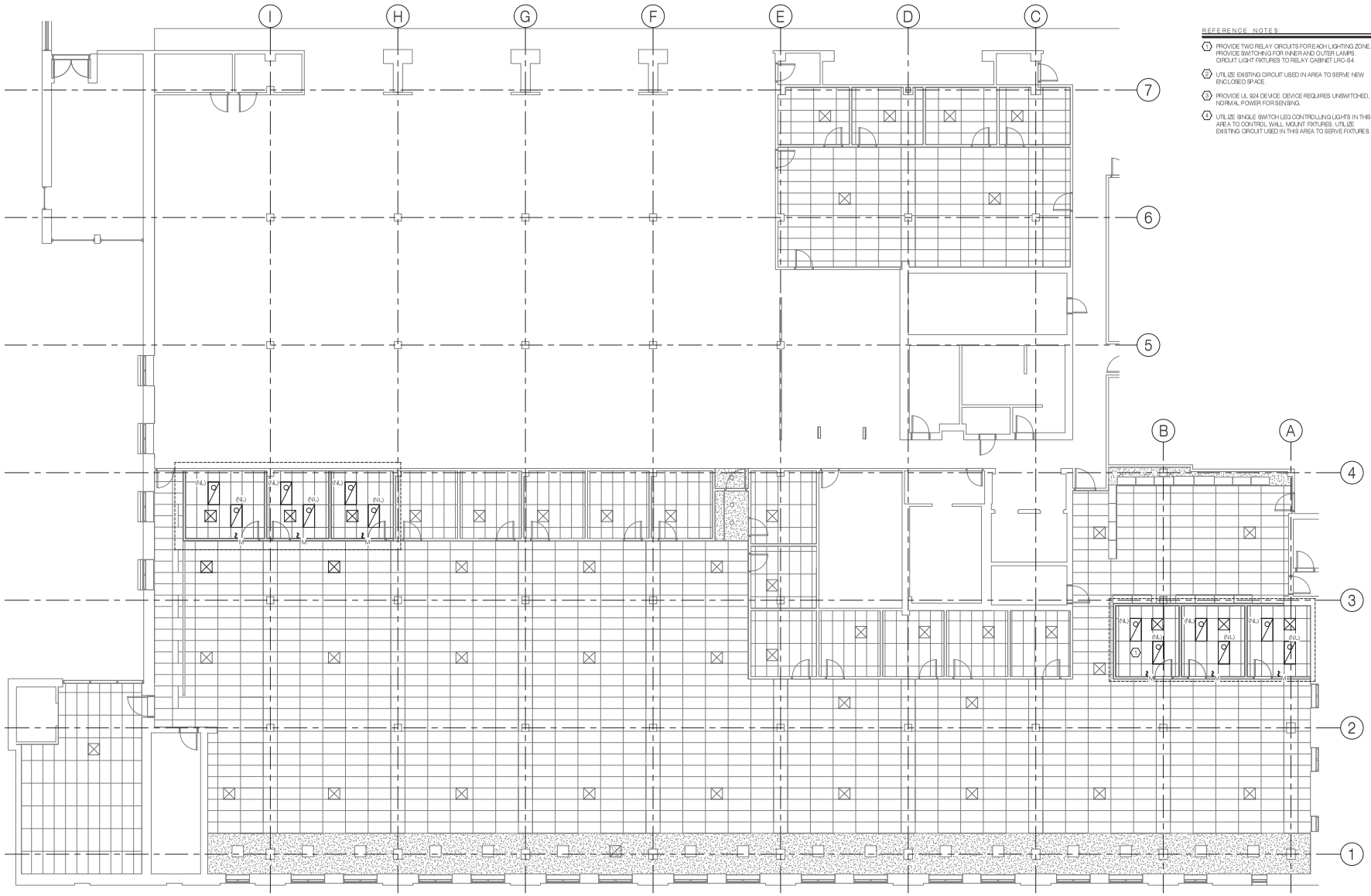

REFERENCE NOTES:

1. PROVIDE TWO RELAY CIRCUITS FOR EACH LIGHTING ZONE. PROVIDE SWITCHING FOR INNER AND OUTER LAMPS. CIRCUIT LIGHT FIXTURES TO RELAY CABINET LRC-S4.
2. UTILIZE EXISTING CIRCUIT USED IN AREA TO SERVE NEW ENCLOSED SPACE.
3. PROVIDE UL 924 DEVICE. DEVICE REQUIRES UNSWITCHED, NORMAL POWER FOR SENSING.
4. UTILIZE SINGLE SWITCH LEG CONTROLLING LIGHTS IN THIS AREA TO CONTROL WALL MOUNT FIXTURES. UTILIZE EXISTING CIRCUIT USED IN THIS AREA TO SERVE FIXTURES.

NORTH

1 LIGHTING PLAN - THIRD FLOOR
1/8" = 1'-0"

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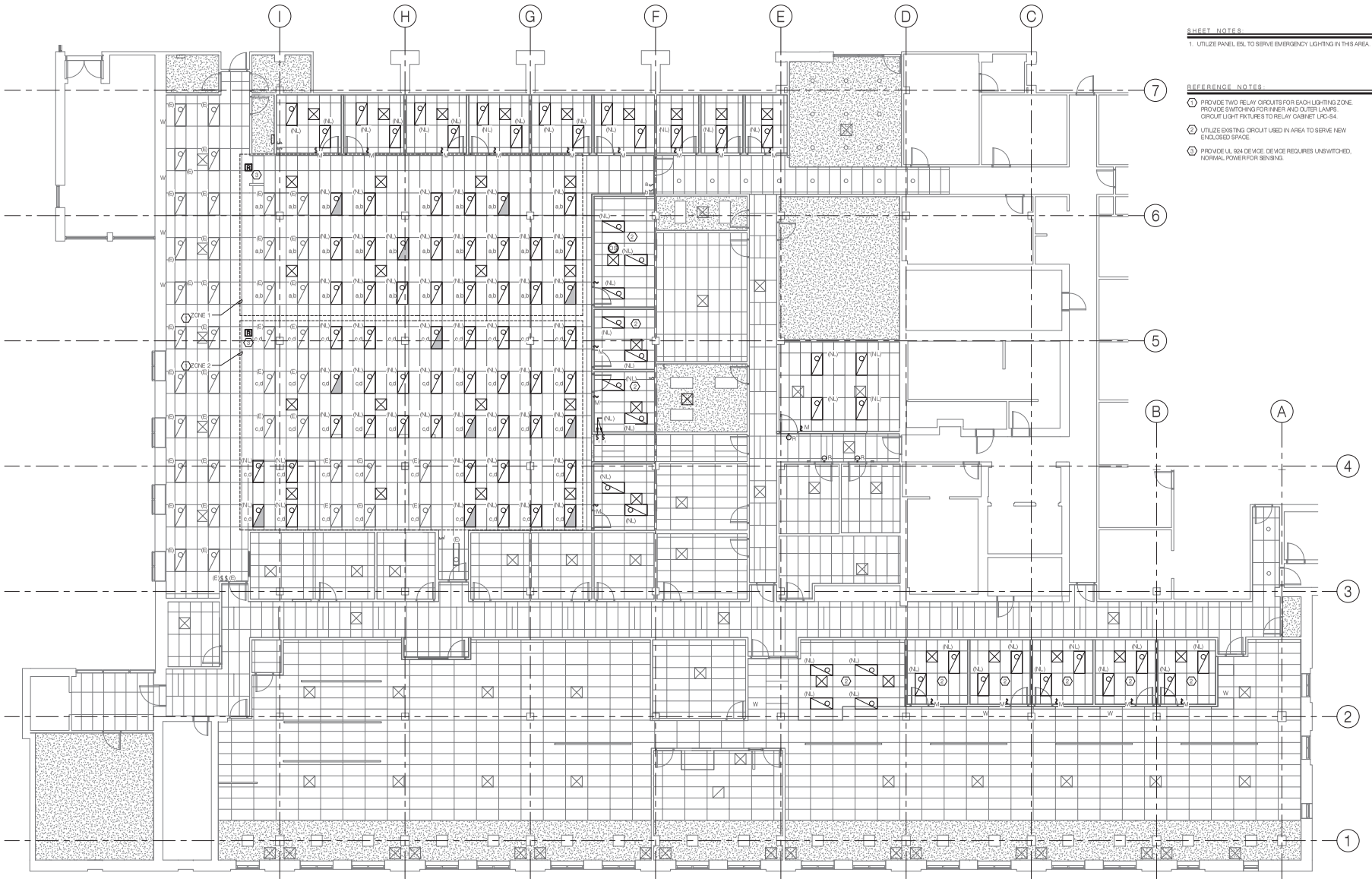

SHEET NOTES:

1. UTILIZE PANEL E5L TO SERVE EMERGENCY LIGHTING IN THIS AREA.

REFERENCE NOTES:

1. PROVIDE TWO RELAY CIRCUITS FOR EACH LIGHTING ZONE. PROVIDE SWITCHING FOR INNER AND OUTER LAMPS. CIRCUIT LIGHT FIXTURES TO RELAY CABINET LRC-S4.
2. UTILIZE EXISTING CIRCUIT USED IN AREA TO SERVE NEW ENCLOSED SPACE.
3. PROVIDE UL 924 DEVICE. DEVICE REQUIRES UNSWITCHED, NORMAL POWER FOR SENSING.

NORTH

1 LIGHTING RCP - FOURTH FLOOR
1/8" = 1'-0"

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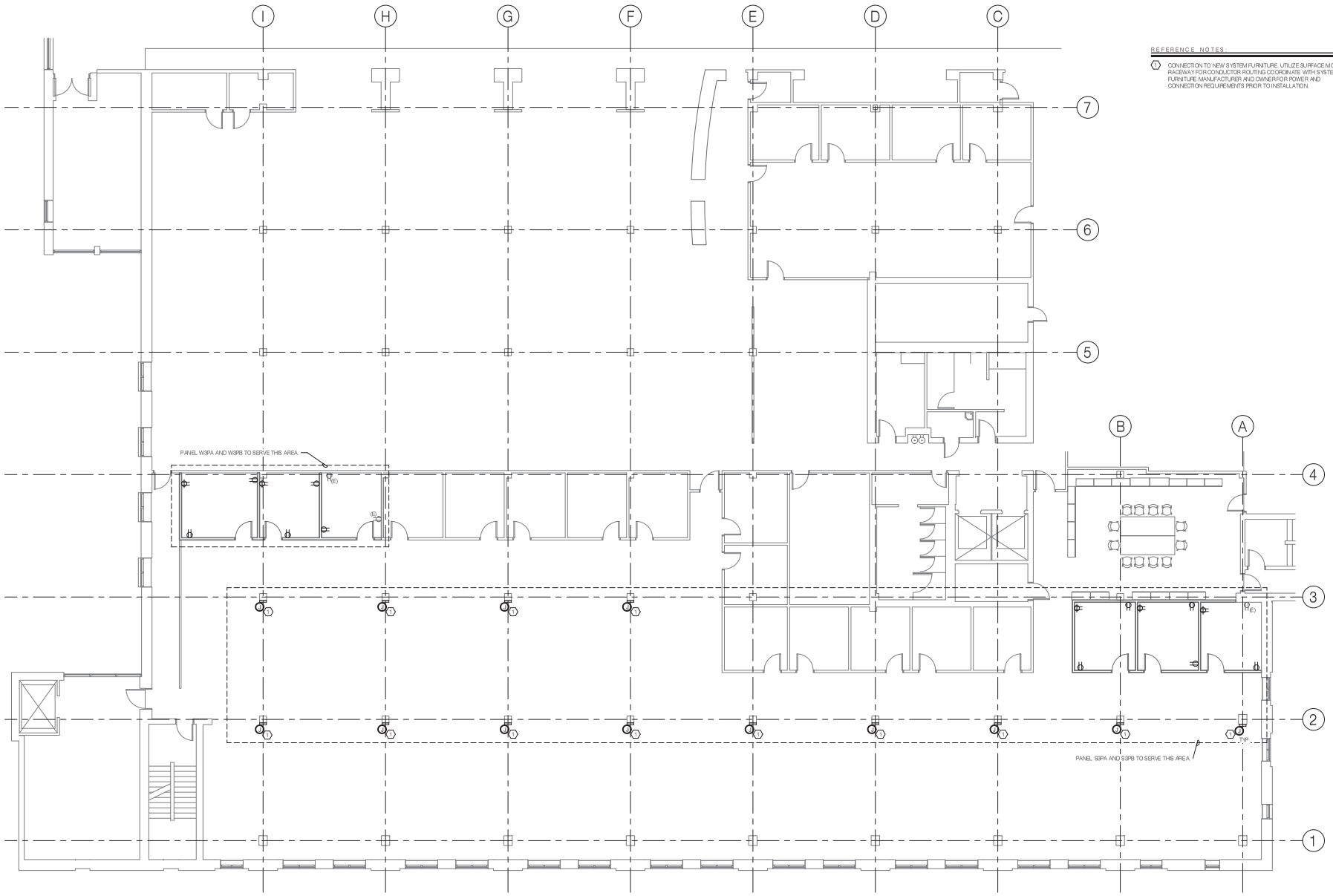

REFERENCE NOTES:

1. CONNECTION TO NEW SYSTEM FURNITURE. UTILIZE SURFACE MOUNT RACEWAY FOR CONDUCTOR ROUTING COORDINATE WITH SYSTEM FURNITURE MANUFACTURER AND OWNER FOR POWER AND CONNECTION REQUIREMENTS PRIOR TO INSTALLATION.

NORTH

1 POWER DISTRIBUTION FLOOR PLAN - THIRD FLOOR
1/8" = 1'-0"

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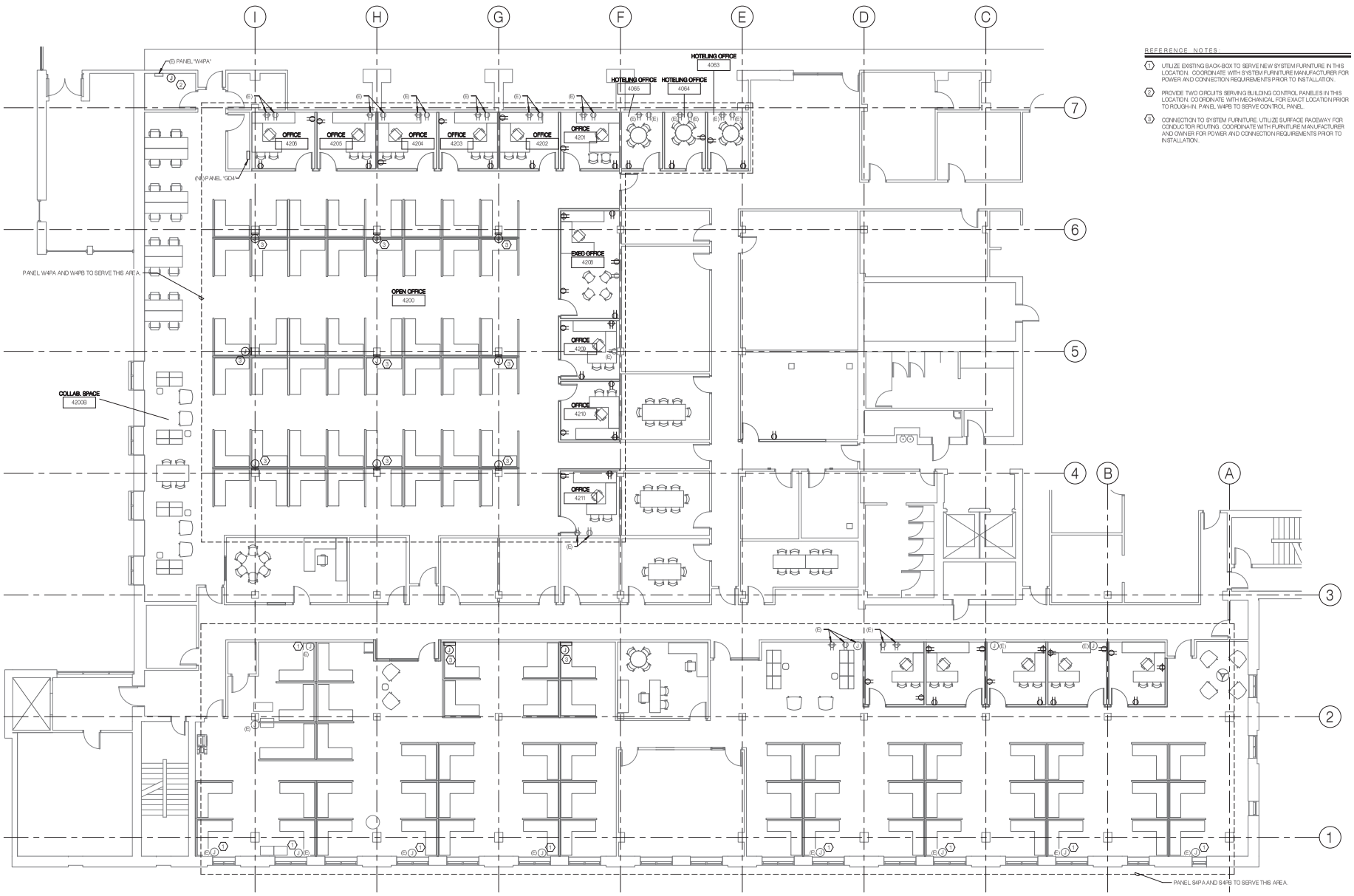

NORTH

1 POWER DISTRIBUTION FLOOR PLAN - FOURTH FLOOR
1/8" = 1'-0"

REFERENCE NOTES:

1. UTILIZE EXISTING BACK-BOX TO SERVE NEW SYSTEM FURNITURE IN THIS LOCATION. COORDINATE WITH SYSTEM FURNITURE MANUFACTURER FOR POWER AND CONNECTION REQUIREMENTS PRIOR TO INSTALLATION.
2. PROVIDE TWO CIRCUITS SERVING BUILDING CONTROL PANELES IN THIS LOCATION. COORDINATE WITH MECHANICAL FOR EXACT LOCATION PRIOR TO ROUGH-IN. PANEL W4PB TO SERVE CONTROL PANEL.
3. CONNECTION TO SYSTEM FURNITURE. UTILIZE SURFACE RACEWAY FOR CONDUCTOR ROUTING. COORDINATE WITH FURNITURE MANUFACTURER AND OWNER FOR POWER AND CONNECTION REQUIREMENTS PRIOR TO INSTALLATION.

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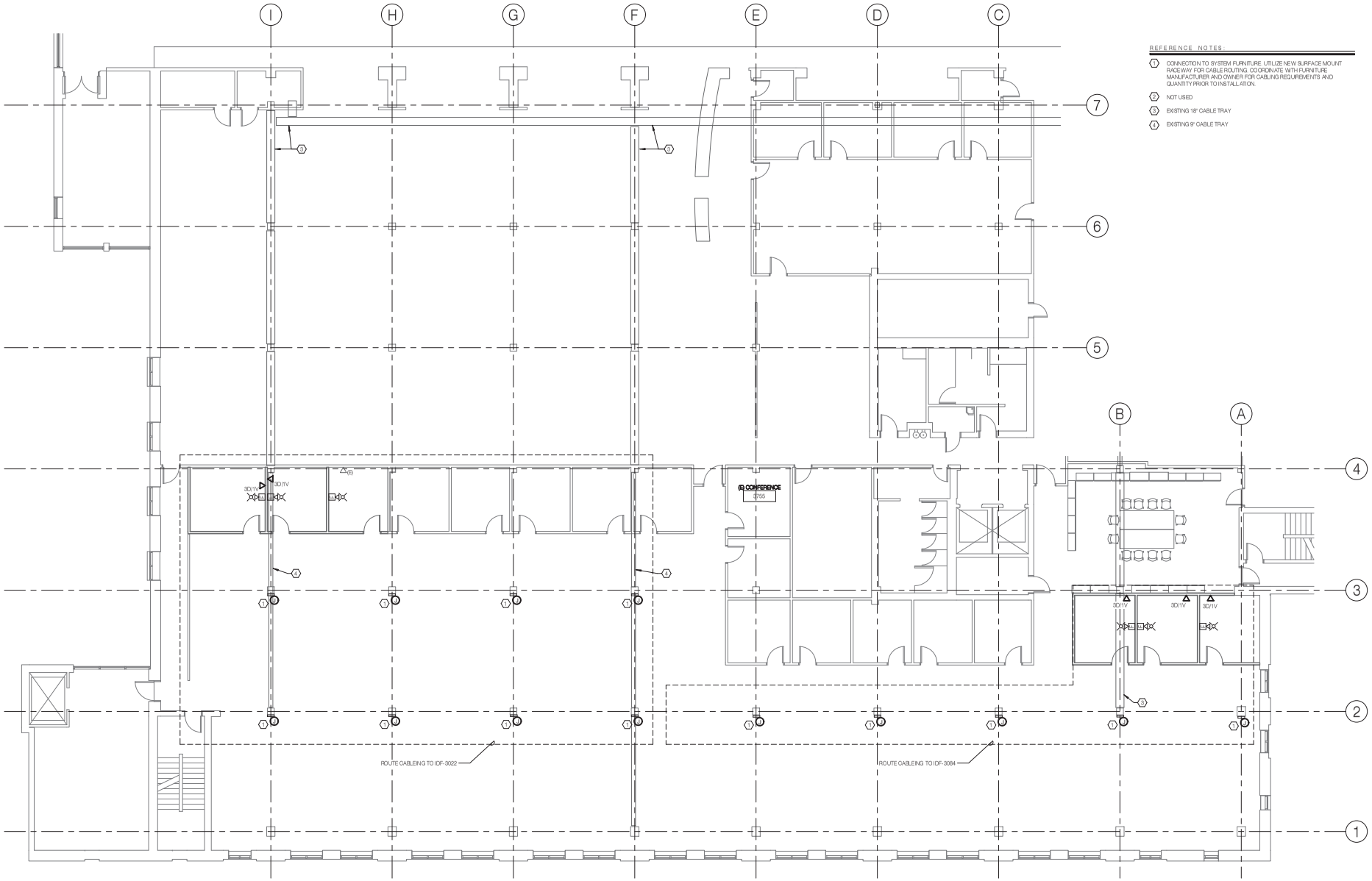

REFERENCE NOTES:

1. CONNECTION TO SYSTEM FURNITURE. UTILIZE NEW SURFACE MOUNT RACEWAY FOR CABLE ROUTING. COORDINATE WITH FURNITURE MANUFACTURER AND OWNER FOR CABLING REQUIREMENTS AND QUANTITY PRIOR TO INSTALLATION.
2. NOT USED
3. EXISTING 18" CABLE TRAY
4. EXISTING 9" CABLE TRAY

NORTH

1 LOW VOLTAGE FLOOR PLAN - THIRD FLOOR
1/8" = 1'-0"

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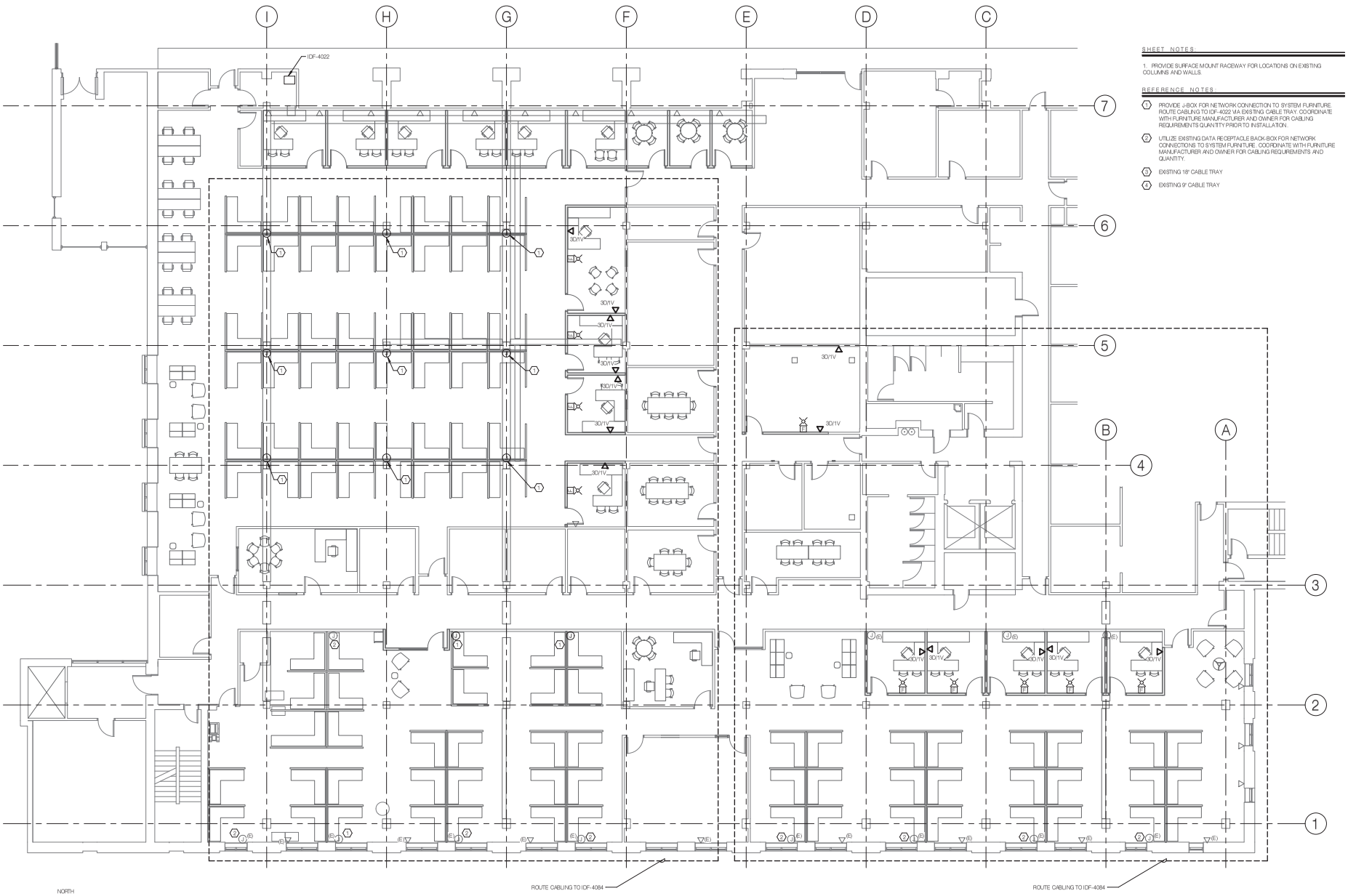

1 LOW VOLTAGE FLOOR PLAN - FOURTH FLOOR
1/8" = 1'-0"

SHEET NOTES:

1. PROVIDE SURFACE MOUNT RACEWAY FOR LOCATIONS ON EXISTING COLUMNS AND WALLS.

REFERENCE NOTES:

1. PROVIDE J-BOX FOR NETWORK CONNECTION TO SYSTEM FURNITURE. ROUTE CABLING TO IDF-4022 VIA EXISTING CABLE TRAY. COORDINATE WITH FURNITURE MANUFACTURER AND OWNER FOR CABLING REQUIREMENTS QUANTITY PRIOR TO INSTALLATION.
2. UTILIZE EXISTING DATA RECEPTACLE BACK-BOX FOR NETWORK CONNECTIONS TO SYSTEM FURNITURE. COORDINATE WITH FURNITURE MANUFACTURER AND OWNER FOR CABLING REQUIREMENTS AND QUANTITY.
3. EXISTING 18" CABLE TRAY
4. EXISTING 9" CABLE TRAY

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11/15/2018

OREGON STATE UNIVERSITY

BID FORM

PROJECT: VALLEY LIBRARY EXTENDED CAMPUS RECONFIGURATION

BID CLOSING: NOVEMBER 30, 2018 at 2:00 PM PACIFIC TIME

BID OPENING: NOVEMBER 30, 2018 at 2:00 PM PACIFIC TIME

FROM: _____
Name of Contractor

TO: Oregon State University ("Owner")
Construction Contracts Administration
644 SW 13th Street
Corvallis, Oregon 97333-4238

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

____a. An individual doing business under an assumed name registered under the laws of the State of _____; or

____b. A partnership registered under the laws of the State of _____; or

____c. A corporation organized under the laws of the State of _____; or

____d. A limited liability corporation/company organized under the laws of the State of _____;

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

_____ Dollars ($_____)

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

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

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

3. The Undersigned certifies that: (1) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (2) The contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

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

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

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

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

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

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

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

11. Accompanying herewith is Bid Security which is equal to ten (10) percent of the total amount of the Basic Bid.

12. The Undersigned further agrees that the Bid Security accompanying the Bid is left in escrow with the Owner; that the amount thereof is the measure of liquidated damages which the Owner will sustain by the failure of the Undersigned to execute and deliver the above-named Agreement Form, Performance Bond and Payment Bond, and, that if the Undersigned defaults in either executing the Agreement Form or providing the Performance Bond and Payment Bond within twenty (20) calendar days after receiving the Contract Documents, then the Bid Security may become the property of the Owner at the Owner's option; but if the Bid is not accepted within thirty (30) calendar days of the time set for the opening of the Bids, or if the Undersigned executes and timely delivers said Agreement Form, Performance Bond and Payment Bond, the Bid Security shall be returned.

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11/15/2018

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

Performance Bond and Payment Bond will be: _____.
(name of surety company - not insurance agency)

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

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

NAME OF FIRM _____

ADDRESS _____

_____

FEDERAL TAX ID _____

TELEPHONE NO _____

FAX NO _____

SIGNATURE 1) _____
Sole Individual - Signature

_____
Sole Individual - Printed Name

or 2) _____
Partner

or 3) _____
Authorized Officer of Corporation - Signature

_____
Authorized Officer of Corporation Printed Name

(SEAL)

_____
Attested: Secretary of Corporation

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

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

FLOOR PLAN NOTES

1. SEE SHEET AG00 FOR GENERAL NOTES.
2. SEE SHEET A900 FOR INTERIOR PARTITION TYPES.
3. SEE SHEET A902 FOR DOOR SCHEDULE.
4. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
5. DIMENSIONS ARE TO:
   A. FACE OF EXISTING FINISH.
   B. FACE OF NEW FINISH.
6. REFER TO CODE SHEETS FOR FIRE RESISTANCE RATING REQUIREMENTS AND EXTENT. ATTACHMENT AND ASSEMBLY OF MATERIALS MUST COMPLY WITH REQUIREMENTS OF U.L. LISTINGS PER "FIRE RESISTANCE DIRECTORY", WHERE LISTED.
7. WHERE RATED WALLS ARE SHORTER THAN COMPLETE RATING DEPICTION, RATE WALL THE SAME AS ADJOINING WALL.
8. INTERIOR PARTIONS ARE TYPE C1.4A= UNLESS NOTED OTHERWISE.
9. INFILL WALLS TO MATCH EXISTING AT DEMOLISHED DOORS AND INTERIOR WINDOWS.

FLOOR PLAN LEGEND

- FULL HEIGHT WALL
- EXISTING WALL
- 1 HR FIRE BARRIER WALL — FIRE RATING DESIGN # PER PARTITION TYPES ON SHEET A900
- INTERIOR WINDOW/SIDELIGHT
- P-3 DRY ERASE PAINT (P-3)
- AREA NOT IN PROJECT SCOPE

1 A201 FLOOR PLAN - FOURTH FLOOR
1/8" = 1'-0"

0' 2' 4' 8' 16'

PROJECT NORTH

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201 SW WALDO PL.,
CORVALLIS, OR 97331

HEA Project no. 17050
Date: 9 October 2018
CONSTRUCTION SET

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1	11.09.18	Adendum 1

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Sheet: FLOOR PLAN - FOURTH FLOOR

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REGISTERED ARCHITECT ALAN OSBORNE 3640 PORTLAND, OREGON STATE OF OREGON

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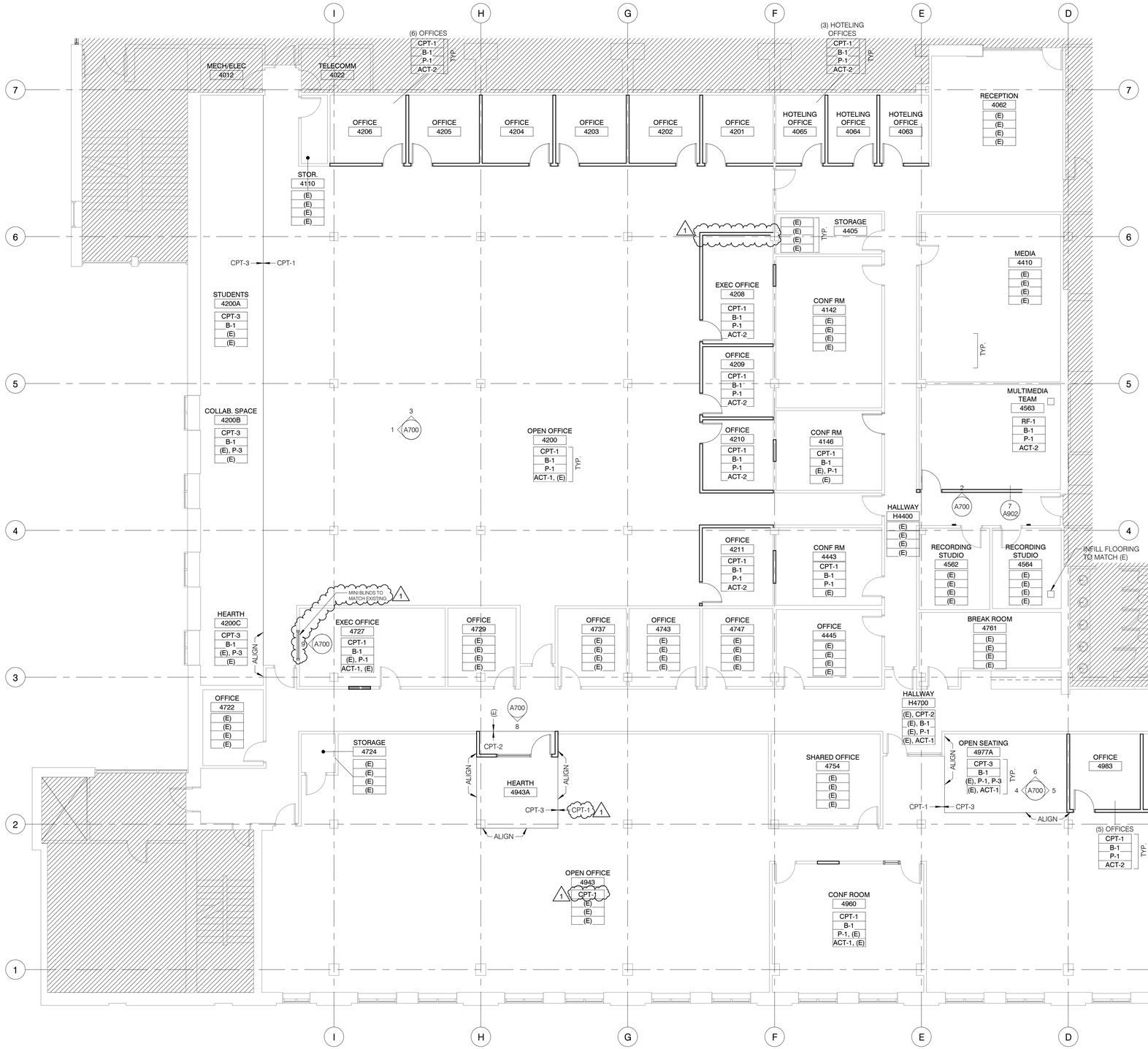

1 A501 FINISH PLAN - FOURTH FLOOR
1/8" = 1'-0"

PROJECT NORTH

0' 2' 4' 8' 16'

GENERAL NOTES: FINISH PLANS

1. SEE SHEET AG00 FOR GENERAL NOTES.
2. SEE SHEET A902 FOR INTERIOR FLOORING TRANSITION DETAILS.
3. REFERENCE ELEVATIONS FOR ADDITIONAL FINISHES.
4. REFERENCE MATERIAL FINISH SCHEDULE IN DIVISION 9 SPECIFICATIONS.
5. PAINT DOOR AND RELITE FRAME ADJACENT WALL COLOR.
6. CENTER TRANSITION STOP UNDER DOOR.
7. PAINT ALL GBD CEILINGS, SOFFITS AND OVERHEAD HORIZONTAL SURFACES P-1, UON.

ABBREVIATIONS:

FINISH:

ACT-#	ACOUSTICAL CEILING TILE
AWP-#	ACOUSTIC WALL PANEL
B-#	RESILIENT BASE
CPT-#	CARPET
GBD	GYPSUM WALL BOARD
P-#	PAINT
RF-#	RESILIENT FLOORING
TS-#	TRANSITION STRIPS
WD-#	WOOD

\# DENOTES TYPE

REFER TO MAIN ABBREVIATION LIST FOR ADDITIONAL ABBREVIATIONS.

GENERAL LEGEND:

XXX — FLOOR FINISH
XXX — BASE
XXX — WALLS
XXX — CEILING

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REFLECTED CEILING PLAN NOTES

1. SEE AG00 FOR GENERAL NOTES.
2. EXISTING LIGHT FIXTURES TO REMAIN. REINSTALL EXISTING FIXTURES AS INDICATED. INFILL FIXTURES TO MATCH EXISTING.
3. DEVICES AS NOTED BUT NOT LIMITED TO LIGHT FIXTURES, ELECTRICAL DEVICES, SPRINKLER HEADS ARE SHOWN FOR OVERALL CEILING COORDINATION. NOT ALL DEVICES ARE SHOWN IN LOCATIONS WHERE CEILING LAYOUT IS LESS CRITICAL.
4. IF ABOVE DEVICES ARE NOT DIMENSIONED THEIR LOCATION REQUIRES APPROVAL BY ARCHITECT PRIOR TO INSTALLATION.
5. CEILING HEIGHT TO MATCH EXISTING ADJACENT CEILING, UON.
6. CENTER ACT IN ROOMS IN BOTH DIRECTIONS, UON.

REFLECTED CEILING PLAN LEGEND

NOTE: NOT ALL ITEMS MAY BE USED

- (E) GYPSUM BOARD CEILING
- (E) 2' x 4' SUSPENDED ACOUSTIC CEILING
- (E) SUPPLY DIFFUSER
- (E) CAN DOWNLIGHT
- (E) LINEAR PENDANT FIXTURE
- (E) 2X4 LAY IN FIXTURE
- (E) 1X4 LAY IN FIXTURE
- 2' x 4' SUSPENDED ACOUSTIC CEILING MATCH (E) ACT AND GRID WHERE IMMEDIATELY ADJACENT
- SUPPLY DIFFUSER
- 2X4 LAY IN FIXTURE
- (R) RELOCATED 2X4 LAY IN FIXTURE
- (R) RELOCATED 1X4 LAY IN FIXTURE
- EQ EQ / EQ EQ 1/4 DISTANCE OF TILE
- DEVICE LOCATION AT MID POINT OR QUARTER POINT UON

1 A601 RCP - FOURTH FLOOR
1/8" = 1'-0"

0' 2' 4' 8' 16'

PROJECT NORTH

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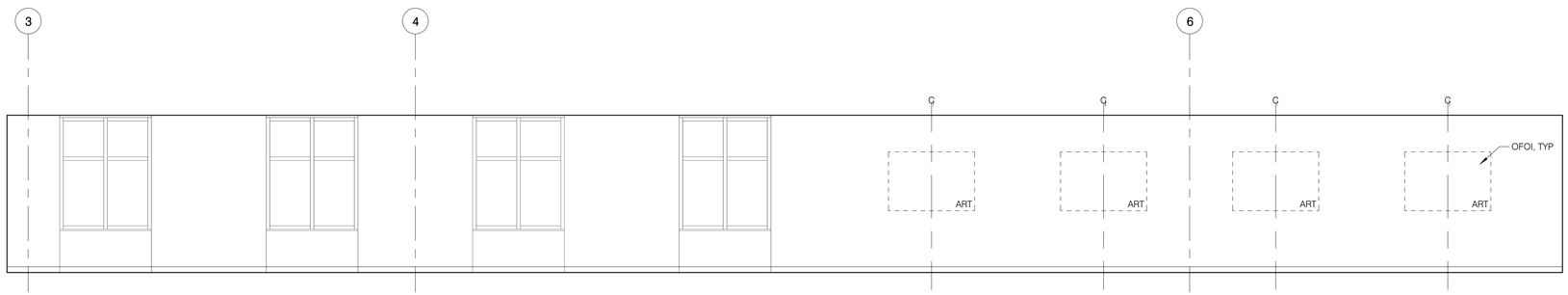
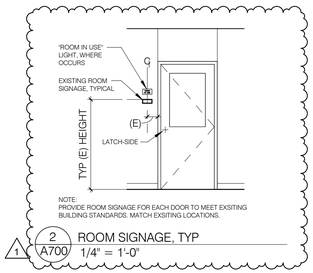
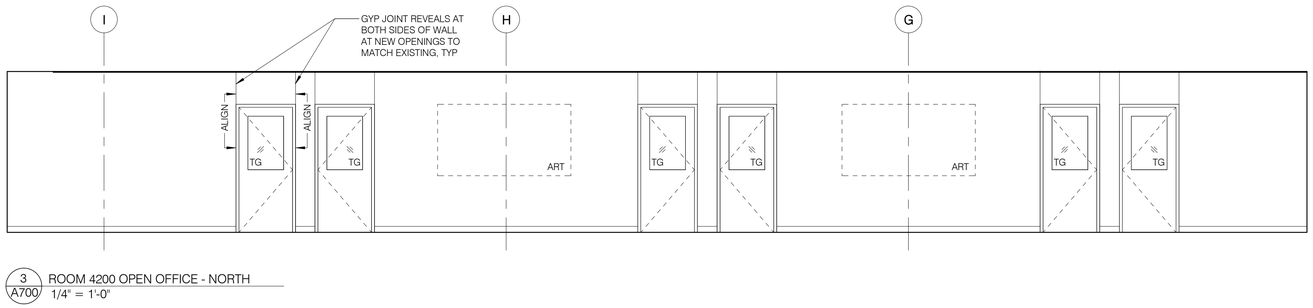


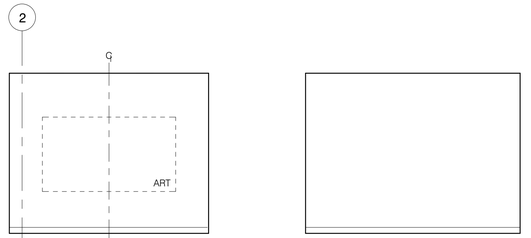
1 A700 ROOM 4200 OPEN OFFICE - WEST
1/4" = 1'-0"



1 2 A700 ROOM SIGNAGE, TYP
1/4" = 1'-0"

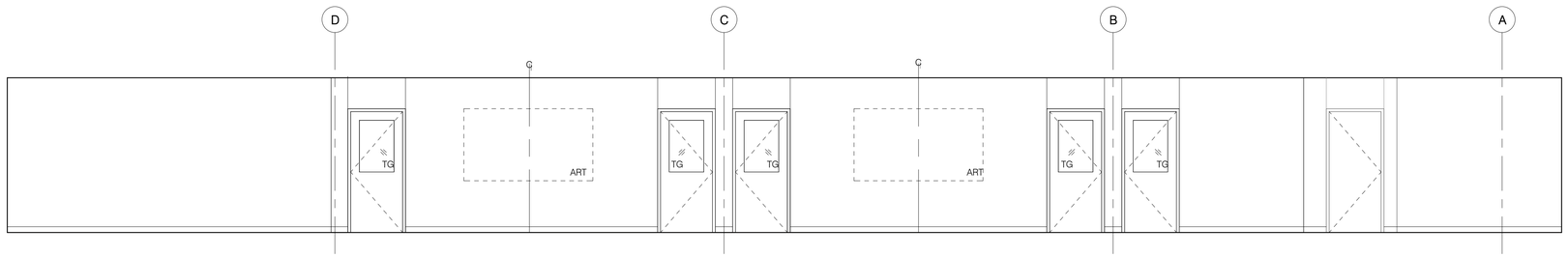


3 A700 ROOM 4200 OPEN OFFICE - NORTH
1/4" = 1'-0"

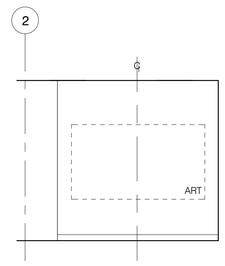


4 A700 ROOM 4977A HEARTH - WEST
1/4" = 1'-0"

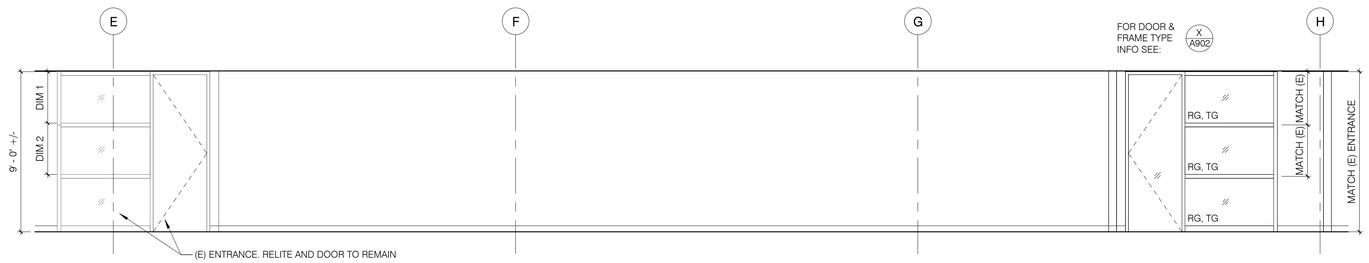
5 A700 ROOM 4977A HEARTH - EAST
1/4" = 1'-0"



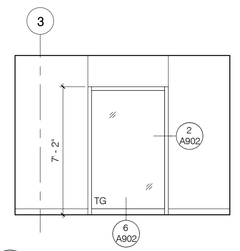
6 A700 ROOM 4977 OPEN OFFICE - NORTH
1/4" = 1'-0"



7 A700 4977B HEARTH - WEST
1/4" = 1'-0"



8 A700 ROOM H4700 HALLWAY - SOUTH
1/4" = 1'-0"



9 A700 ROOM 4727 - EXEC. OFFICE - WEST
1/4" = 1'-0"

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DOOR SCHEDULE

DOOR SCHEDULE													
	DOOR						FRAME					
			SIZE									
ROOM NAME	NO.	TYPE	WIDTH	HEIGHT	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	HARDWARE GROUP	ASSEMBLY RATING	NOTES
1 OPEN OFFICE	3729	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	3731	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	3732	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	3772	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	3773	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	3774	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
HOTELING OFFICE	4063	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	2	--	
HOTELING OFFICE	4064	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	2	--	
HOTELING OFFICE	4065	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	2	--	
CONF RM	4146	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	3	--	
OFFICE	4201	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4202	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4203	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4204	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4205	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4206	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
EXEC OFFICE	4208	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OPEN OFFICE	4209	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4210	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4211	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
MULTIMEDIA TEAM	4563	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	3	--	
HEARTH	4943A	A	3' - 0"	8' - 9 1/2"	WD	CLR	2	ALUM	PT	4	20-MIN	MATCH EXISTING ENTRANCE. SEE ELEV
OFFICE	4983	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4984	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4985	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4986	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	
OFFICE	4987	B	3' - 0"	7' - 0"	WD	CLR	1	ALUM	PT	1	--	

ABBREVIATIONS: DOOR SCHEDULE

MATERIAL:

ALUM	ALUMINUM
HM	HOLLOW METAL
STL	STEEL
WD	WOOD
GL	GLASS
RG	RATED GLASS, 20 MINUTES
TG	TEMPERED GLAZING, ANSI Z97.1 CLASS A

REFER TO MAIN ABBREVIATION LIST FOR ADDITIONAL ABBREVIATIONS.

FINISH:

ANOD	ANODIZED
CLR	CLEAR
PT #	PAINT

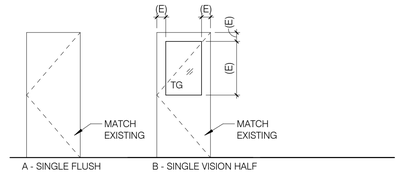
LOCK FUNCTION:

PA	PASSAGE
PR	PRIVACY
E	ENTRANCE/OFFICE
C	CLASSROOM
S	STOREROOM
PP	PUSH/PULL

DOOR SCHEDULE GENERAL NOTES

1. THICKNESS OF DOOR 1 3/4" UNLESS NOTED OTHERWISE
2. PROVIDE ADA COMPLIANT LEVER HARDWARE AT ALL HINGED DOORS, TYPICAL.
3. PROVIDE DOOR SILENCERS WHERE GASKETING IS NOT SPECIFIED. THE COLOR OF BRUSH GASKETING (IF USED) SHALL MATCH THE COLOR OF SURROUNDING FRAME.
4. ALL GLAZING IN DOORS AND FRAMES TO BE TEMPERED GLAZING (TG) OR LAMINATED GLAZING (LG), UNLESS OTHERWISE NOTED.
5. EACH PANE OF TEMPERED OR LAMINATED GLASS SHALL BE PERMANENTLY IDENTIFIED BY MANUFACTURER WITH A MARK THAT ONCE APPLIED, CANNOT BE REMOVED WITHOUT BEING DESTROYED.
6. THE OPENING FORCE OF DOORS ALONG AN ACCESSIBLE ROUTE SHALL NOT EXCEED 8 1/2 POUNDS-FORCE FOR EXTERIOR DOORS AND 5 POUNDS-FORCE FOR INTERIOR DOORS.
7. WHERE "MATCH EXISTING" IS INDICATED, MATCH THE DIMENSIONS, MATERIALS, FINISHES AND DETAILS OF IMMEDIATELY ADJACENT EXISTING DOORS AND FRAMES. MULTIPLE TYPES OF DOORS AND FRAMES EXIST WITHIN THE PROJECT SCOPE. CONFIRM ASSUMPTIONS WITH ARCHITECT.

DOOR TYPE LEGEND



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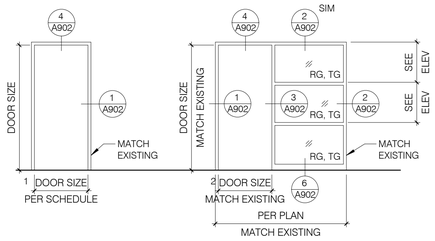
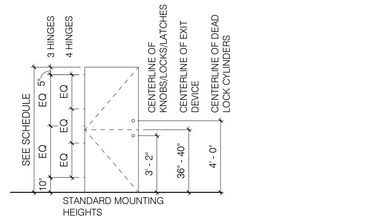
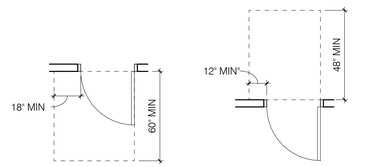
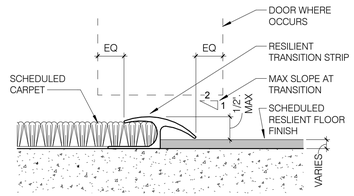


STANDARD MOUNTING HEIGHTS

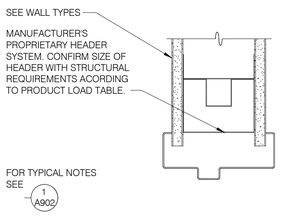


TYPICAL DOOR CLEARANCES

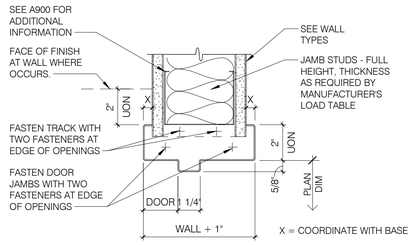




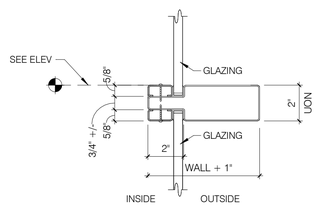
7 A902 CARPET TO RESILIENT
12" = 1'-0"



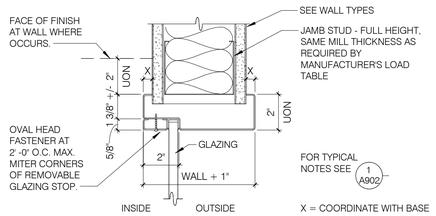
4 A902 HM DOOR FRAME - HEAD
3" = 1'-0"



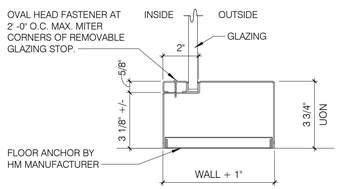
1 A902 HM DOOR FRAME - JAMB
3" = 1'-0"



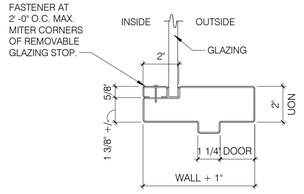
5 A902 HM RELITE FRAME - HORIZ. MULLION
3" = 1'-0"



2 A902 HM RELITE FRAME - JAMB
3" = 1'-0"



6 A902 HM RELITE FRAME - BASE
3" = 1'-0"



3 A902 HM RELITE FRAME AT DOOR
3" = 1'-0"

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DOOR SCHEDULE & DETAILS

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