

SUBMIT BID TO:
PROCUREMENT SERVICES
UNIVERSITY OF FLORIDA
971 ELMORE DRIVE
GAINESVILLE, FL 32611

Phone: (352) 392-1331 - FAX: (352) 392-8837

Web Address: <https://procurement.ufl.edu/>



INVITATION TO BID

Construction Acknowledgment Form

Page 1 of 142 pages		BID WILL BE OPENED: September 11, 2019 at 3:00 PM local time and may not be withdrawn within 90 days after such date and time. Mandatory Pre-bid: August 19, 2019 at 10:30 AM local time at the site.		BID NO.: ITB20KO-117	
DATE: 8/6/19		PROCUREMENT AGENT: KO/jh		BID TITLE: Chilled Water Pipe Replacement – Dental Science Building Floors 8, 9 and 10	
VENDOR NAME					
VENDOR MAILING ADDRESS		REASON FOR NOT SUBMITTING BID			
CITY - STATE - ZIP CODE		POSTING OF BID TABULATIONS			
AREA CODE	TELEPHONE NO.	Bid tabulations with intended award(s) will be posted electronically for review by interested parties at https://procurement.ufl.edu/ and will remain posted for a period of 72 hours excluding Saturdays, Sundays, or state holidays. Failure to file a protest in accordance with Board of Governors (BOG) Regulation 18.002 or failure to post the bond or other security as required in the BOG regulations 18.002 and 18.003(3), shall constitute a waiver of protest proceedings.			
	FAX NO.				
	WEB ADDRESS				
	EMAIL ADDRESS				

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a bid for the same materials, supplies, or equipment and is in all respects fair and without collusion or fraud. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the vendor and that the vendor is in compliance with all the requirements of the Invitation to Bid, including but not limited to, certification requirements. In submitting a bid on behalf of the Board of Trustees, hereinafter known as the University, the vendor offers and agrees that if the bid is accepted the vendor will convey, sell, assign, or transfer to the University all rights, title and interest in and to all causes of action it may now or hereafter acquire under the Anti-trust laws of the United States and the University for price fixing relating to the particular commodities or services purchased or acquired by the University. At the University's discretion, such assignment shall be made and become effective at the time the purchasing agency tenders final payment to the vendor.

AUTHORIZED SIGNATURE (MANUAL)

NAME AND TITLE (TYPED)

GENERAL CONDITIONS

SEALED BIDS: All bid sheets and this form must be executed and submitted in a sealed envelope. (DO NOT INCLUDE MORE THAN ONE BID PER ENVELOPE.) The face of the envelope shall contain, in addition to the above address, the date, and time of the bid opening and the bid number. Bids not submitted on the attached bid form shall be rejected. All bids are subject to the conditions specified herein. Those which do not comply with these conditions are subject to rejection.

1. **EXECUTION OF BID:** Bid must contain an original manual signature of authorized representative in the space provided above. Bid must be typed or printed in ink. Use of erasable ink is not permitted. All corrections to prices made by vendor must be initialed.

2. **NO BID:** If not submitting a bid, respond by returning only this vendor acknowledgment form, marking it "NO BID", and explain the reason in the space provided above. Failure to respond to a procurement solicitation without giving justifiable reason for such failure, nonconformance to contract conditions, or other pertinent factors deemed reasonable and valid shall be cause for removal of the supplier's name from the bid mailing list. NOTE: To qualify as a respondent, vendor must submit a "NO BID", and it must be received no later than the stated bid opening date and hour.

3. **BID OPENING:** Shall be public, on the date, location and the time specified on the bid form. It is the vendor's responsibility to assure that the bid is delivered at the proper time and place of the bid opening. Bids which for any reason are not so delivered will not be considered. A bid may not be altered after opening of the bids. NOTE: Bid tabulations will be posted electronically at <https://procurement.ufl.edu/>. Bid tabulations will not be provided by telephone.

4. **PRICES, TERMS AND PAYMENT:** Firm prices shall be bid and will include all packing, handling, shipping charges, and delivery to the destination shown herein.

(a) **TAXES:** The University does not pay Federal Excise and Sales taxes on direct purchases of tangible personal property or services. The Florida Tax Exempt Number is 11-06-024056-57C. This exemption does not apply to purchases of tangible personal property or services made by vendors who use the tangible personal property or services in the performance of contracts for the improvement of University-owned real property as defined in Chapter 192, F.S.

(b) **DISCOUNTS:** Vendors are encouraged to reflect trade discounts in the unit prices quoted; however, vendors may offer a discount for prompt payment. Prompt payment discounts will not be considered in the bid award. However, every effort will be made to take the discount within the time offered.

(c) **MISTAKES:** Vendors are expected to examine the specifications, delivery schedule, bid prices, extensions, and all instructions pertaining to supplies and

services. Failure to do so will be at vendor's risk. In case of a mistake in extensions the unit price will govern.

(d) **INVOICING AND PAYMENT:** Payment will be made by the University of Florida after the items awarded to a vendor have been received, inspected, and found to comply with award specifications, free of damage or defect and properly invoiced. All invoices shall bear the purchase order number. Payment for partial shipments shall not be made unless specified. An original invoice shall be submitted. Failure to follow these instructions may result in delay in processing invoices for payment. Payment shall be made in accordance with Section 215.422 (1) (2) F.S. **VENDOR OMBUDSMAN:** The University's vendor ombudsman, whose duties include acting as an advocate for vendors may be experiencing problems in obtaining payment from the University, may be contacted at 352-392-1241.

(e) **ANNUAL APPROPRIATIONS:** The University's performance and obligation to pay under any contract awarded is contingent upon an annual appropriation by the Legislature.

(f) **CONDITION AND PACKAGING:** It is understood and agreed that any item offered or shipped as a result of this bid shall be a new, current standard production model available at the time of this bid. All containers shall be suitable for storage or shipment, and all prices shall include standard commercial packaging.

(g) **SAFETY STANDARDS:** Unless otherwise stipulated in the bid, all manufactured items and fabricated assemblies shall comply with applicable requirements of Occupational Safety and Health Act and any standards hereunder.

5. **CONFLICT OF INTEREST:** The award hereunder is subject to the provisions of Chapter 112, F.S. All vendors must disclose with their bid the name of any officer, director, or agent who is also an employee of the University of Florida. Further, all vendors must disclose the name of any University employee who owns, directly or indirectly, an interest of five percent (5%) or more in the vendor's firm or any of its branches.

6. **AWARDS:** As the best interest of the University may require, the right is reserved to make award(s) by individual item, group of items, all or none or a combination thereof; to reject any and all bids or waive any minor irregularity or technicality in bids received. When it is determined there is no competition to the lowest responsible vendor, evaluation of other bids are not required. Vendors are cautioned to make no assumptions unless their bid has been evaluated as being responsive.

7. **INTERPRETATIONS/DISPUTES:** Any questions concerning conditions or specifications shall be directed in writing to Procurement Services. Inquiries must reference the date of bid opening and bid number. No interpretations shall be considered binding unless provided in writing by the University in response to requests in full compliance with this provision.

8. NOTICE OF BID PROTEST BONDING REQUIREMENT: Any person or entity who files an action protesting a decision or an intended decision pertaining to a competitive solicitation shall at the time of filing the formal protest, post with the University a bond payable to the University in an amount equal to: 10% of the estimated value of the protestor's bid or proposal; 10% of the estimated expenditure during the contract term; \$10,000.00; or whichever is less. The bond shall be conditioned upon the payment of all costs which may be adjudged against the person or entity filing the protest action. In lieu of a bond, the University may accept a cashier's check, bank official check or money order in the amount of the bond. **FAILURE OF THE PROTESTING PERSON OR ENTITY TO FILE THE REQUIRED BOND, CASHIER'S CHECK, BANK OFFICIAL CHECK OR MONEY ORDER AT THE TIME OF THE FILING THE FORMAL PROTEST SHALL RESULT IN DENIAL OF THE PROTEST.**

9. GOVERNMENTAL RESTRICTIONS: In the event any governmental restrictions may be imposed which would necessitate alteration of the material, quality, workmanship or performance of the items offered in this bid prior to their delivery, it shall be the responsibility of the successful vendor to notify the purchaser at once, indicating in writing the specific regulation which requires an alteration. The University reserves the right to accept any such alteration, including any price adjustments occasioned thereby, or to cancel the contract at no expense to the University.

10. LEGAL REQUIREMENTS: Applicable provision of all Federal, State, county and local laws, and of all ordinances, rules and regulations shall govern development, submittal and evaluation of all bids received in response hereto and shall govern any and all claims and disputes which may arise between person(s) submitting a bid response hereto and the University, by and through its officers, employees and authorized representatives, or any other person, natural or otherwise: and lack of knowledge by any vendor shall not constitute a cognizable defense against the legal effect thereof.

11. LOBBYING: Vendor is prohibited from using funds provided under any contract or purchase order for the purpose of lobbying the Legislature or any official, officer, commission, board, authority, council, committee, or department of the executive branch or the judicial branch of state government.

12. ADVERTISING: In submitting a bid, the vendor agrees not to use the results therefrom as a part of any commercial advertising. Vendor may not use the names, logos, or trademarks of the University, its employees, or affiliates without the prior written consent of the University.

13. ASSIGNMENT: Any contract or purchase order issued pursuant to this Invitation to Bid and the monies which may become due hereunder are not assignable except with the prior written approval of the purchaser.

14. LIABILITY: The vendor agrees to indemnify and save the University of Florida, the State of Florida and the Florida Board of Governors, their officers, agents, and employees harmless from any and all judgments, orders, awards, costs and expenses, including attorney's fees, and also all claims on account of damages to property, including loss of use thereof, or bodily injury (including death) which may be hereafter sustained by the vendor, its employees, its subcontractors, or the University of Florida, the State of Florida and the Florida Board of Governors, their officers, agents, or employees, or third persons, arising out of or in connection with any contract awarded and which are the result of the vendor's breach of contract or of the negligent acts of the vendor, its officers, agents, and employees. This clause does not apply to contracts between government agencies.

15. FACILITIES: The University reserves the right to inspect the vendor's facilities at any time with prior notice.

16. ADDITIONAL QUANTITIES: For a period not exceeding ninety (90) days from the date of acceptance of any offer by the University of Florida, the right is reserved to acquire additional quantities up to but not exceeding those shown on bid or the bid level at the prices bid in this invitation. If additional quantities are not acceptable, the bid sheets must be noted "BID IS FOR SPECIFIED QUANTITY ONLY".

17. SERVICE AND WARRANTY: Unless otherwise specified, the vendor shall define any warranty service and replacements that will be provided during and subsequent to this contract. Vendors must explain on an attached sheet to what extent warranty and service facilities are provided.

18. SAMPLES: Samples of items, when called for, must be furnished free of expense, on or before bid opening time and date, and if not destroyed, may upon request, be returned at the vendor's expense. Each individual sample must be labeled with vendor's name, manufacturer's brand name and number, bid number and item reference. Request for return of samples shall be accompanied by instructions which include shipping authorization and name of carrier and must be received with the bid. If instructions are not received within this time, the commodities shall be disposed of by the University.

19. INSPECTION, ACCEPTANCE AND TITLE: Inspection and acceptance will be at destination unless otherwise provided. Title and risk of loss or damage of all items shall be the responsibility of the contract supplier until accepted by the University, unless loss or damage results from negligence by the University. The contract supplier shall be responsible for filing, processing and collecting all damage claims. However, to assist him in the expeditious handling of damage claims, the University will:

(a) Record any evidence of visible damage on all copies of the delivering carrier's Bill of Lading.

- (b) Report damage (Visible or Concealed) to the carrier and contract supplier confirming such reports in writing within 15 days of delivery, requesting that the carrier inspect the damaged merchandise.
- (c) Retain the item and its shipping container, including inner packing material until inspection is performed by the carrier, and disposition given by the contract supplier.
- (d) Provide the contract supplier with a copy of the carrier's Bill of Lading and damage inspection report.

20. PATENTS, COPYRIGHTS, TRADEMARKS, ROYALTIES and other Intellectual Property: The vendor, without exception, shall indemnify and save harmless the University and its employees from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by the University of Florida. If the vendor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the bid prices shall include all royalties or costs arising from the use of such design, device, or materials in any way involved in the work.

21. CONFLICT BETWEEN DOCUMENTS: If any terms and conditions contained within the documents that are a part of this ITB or resulting contract are in conflict with any other terms and conditions contained therein, then the various documents comprising this ITB or resulting contract, as applicable, shall govern in the following order of precedence: change order, purchase order, addenda, special conditions, general conditions, specifications, departmental description of work, and bid.

22. MANUFACTURERS' NAMES AND APPROVED EQUIVALENTS: Any manufacturer's names, trade names, brand names, information and/or catalog numbers listed in a specification are for information and not intended to limit competition. If bids are based on equivalent products, indicate on the bid form the manufacturer's name and number. Vendor shall submit with the bid, cuts, sketches, and descriptive literature, and/or complete specifications. Reference to literature submitted with a previous bid will not satisfy this provision. The vendor shall also explain in detail the reasons why the proposed equivalent will meet the specifications and not be considered an exception thereto. The University of Florida reserves the right to determine acceptance of item(s) as an approved equivalent. Bids which do not comply with these requirements are subject to rejection. Bids lacking any written indication of intent to quote an alternate brand will be received and considered in complete compliance with the specifications as listed on the bid form.

23. NONCONFORMANCE TO CONTRACT CONDITIONS: Items may be tested and/or inspected for compliance with specifications by any appropriate testing facilities. Should the items fail, the University may require the vendor to reimburse the University for costs incurred by the University in connection with the examination or testing. The data derived from any tests for compliance with specifications are public records and open to examination thereto in accordance with Chapter 119, F.S. Items delivered not conforming to specifications may be rejected and returned at vendor's expense. These items and items not delivered as per delivery data in bid and/or purchase order may result in vendor being found in default in which event any and all procurement costs may be charged against the defaulting vendor. Any violation of these conditions may also result in the vendor's name being removed from the University of Florida's vendor file.

24. PUBLIC RECORDS: Any material submitted in response to this Invitation to Bid will become a public document pursuant to Section 119.07 F.S. This includes material which the responding vendor might consider to be confidential or a trade secret. Any claim of confidentiality is waived upon submission, effective after opening pursuant to Section 119.07 F.S.

25. DELIVERY: Unless actual date of delivery is specified (or if specified delivery cannot be met), show number of days required to make delivery after receipt of purchase order in space provided. Delivery time may become a basis for making an award (see Special Conditions). Delivery shall be within the normal working hours of the University of Florida, Monday through Friday, unless otherwise specified.

26. PUBLIC PRINTING - PREFERENCE GIVEN PRINTING WITHIN THE STATE: The University of Florida shall give preference to vendors located within the state when awarding contracts to have materials printed, whenever such printing can be done at no greater expense than, and at a level of quality comparable to, that obtainable from a vendor located outside of the state.

(a) **CONTRACTS NOT TO BE SUBLET:** In accordance with Class B Printing Laws and Regulations "Printing shall be awarded only to printing firms. No contract shall be awarded to any broker, agent, or independent contractor offering printing manufactured by other firms or persons."

(b) **DISQUALIFICATION OF VENDOR:** Reasonable grounds for believing that a vendor is involved in more than one bid for the same work will be cause for rejection of all bids in which such vendors are believed to be involved. Any or all bids will be rejected if there is reason to believe that collusion exists between vendors. Bids in which the prices obviously are unbalanced will be subject to rejection.

(c) **TRADE CUSTOMS:** Current trade customs of the printing industry are recognized unless accepted by Special Conditions or Specifications herein.

(d) **COMMUNICATIONS:** It is expected that all materials and proofs will be picked up and delivered by the printer or his representative, unless otherwise specified. Upon request, materials will be forwarded by registered mail.

(e) **RETURN OF MATERIAL:** All copy, photos, artwork, and other materials supplied by the University of Florida must be handled carefully and returned in good condition upon completion of the job. Such return is a condition of the contract and payment will not be made until return is affected.

END OF SECTION

**J. Hillis Miller Health Science
Center Dental Building
Chilled Water Pipe Replacement –
Floors 8, 9, and 10**

Project UF-MP-04810



Authorized representatives and contact information:

OWNER

Representative: Robert Hatker
Address: UF Planning Design & Construction, 245 Gale Lemerand Drive
City, State, Zip: Gainesville, FL 32611-5050
Telephone/Fax: (352) 273-4000; (352) 273-4034
Web and E-mail: www.facilities.ufl.edu; rhatker@ufl.edu

UF PROCUREMENT

Name: Karen Olitsky, Procurement Agent III
Address: UF Procurement Services, 971 Elmore Drive
City, State, Zip: Gainesville, FL 32611
Telephone/Fax: (352) 294-1163
Web and E-mail: www.procurement.ufl.edu; kolitsk@ufl.edu

DESIGN PROFESSIONAL

Name: Mitchell Gullledge Engineering, Inc.; Craig Gullledge, P.E.
Address: 210 SW 4th Avenue
City, State, Zip: Gainesville, FL 32601
Telephone/Fax: (352) 745-3991
Web and E-mail: www.mitchellgullledge.com; cgullledge@mitchellgullledge.com

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V. Forms, Applications, and Illustrations

The following forms or documents can be found on the Planning Design & Construction website at www.facilities.ufl.edu:

- Owner-Contractor Agreement
- Application and Certificate for Partial Payment
- Builder Application and Certificate of Partial Payment
- Change Order Form and COP Justification Form
- Utility Outage Request
- Construction Administration and Substantial Completion Guide
- Assignment of Antitrust Claims
- Certificate of Non-Segregated Facilities
- Owner Direct Purchase P.O. Requisition
- Inspection Requests and Checklists
- Project Management Guides

The following form can be found on Facilities Services website at <https://www.facilityservices.ufl.edu/information/forms/>:

- Dig Permit

The following forms or documents can be found on the Environmental Health & Safety website at <http://www.ehs.ufl.edu/programs/buildcode/forms/>:

- EH&S Inspection Request Form

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00020 - INVITATION TO BID

The Invitation to Bid shall be in accordance with the University of Florida, Procurement Services "Invitation to Bid Acknowledgement Form" with all relevant information provided therein.

END OF SECTION

00020-1

00100 - INSTRUCTIONS TO BIDDERS

1.1 RELATED SECTIONS

- A. Documents affecting the work of this Section include, but are not necessarily limited to, the General Terms & Conditions and other Sections in Divisions 0 and 1 of these Specifications.

1.2 THE WORK

PROJECT TITLE: **ITB20KO-117 Chilled Water Pipe Replacement – Dental Science Building Floors 8, 9 and 10**

1.3 SECURING DOCUMENTS

Copies of the proposed Contract Documents may be obtained from:

University of Florida Procurement Services website.
<https://procurement.ufl.edu/vendors/schedule-of-bids/>

1.4 BID FORM

In order to be considered responsive and responsible, make bids in strict accordance with the following:

- A. Make bids upon the forms provided, properly signed and with all items completed. Do not change the wording of the bid form and do not otherwise alter or add words to the bid form. Unauthorized conditions, limitations, or provisions attached to the bid may be cause for rejection of the bid.
- B. Include with bid a completed and signed Invitation to Bid Construction Acknowledgment Form.
- C. Include completed Section 00310 - Bid Form.
- D. Include list of subcontractors as described in Section 00430 - Subcontractor Listing.
- E. **Bids must be submitted no later than September 11, 2019 at 3:00 PM, local time.** No bids received after the time fixed for receiving them will be considered. Late bids will be returned to the bidder unopened.
- F. Address bids to Karen Olitsky, Procurement Agent III, and deliver to:

University of Florida
Procurement Services
971 Elmore Drive / PO Box 115250
Gainesville, FL 32611-5250

Submit bid in a sealed envelope that includes the bid number, contractor name and date and time of the bid opening on the outside of the envelope. Submit one (1) original bid and one (1) electronic copy on flash drive or CD/DVD. It is the sole responsibility of the bidder to see that bids are received on time. Faxed and/or emailed bids will not be accepted.

1.5 PROOF OF COMPETENCY OF BIDDER

A bidder may be required to furnish evidence, satisfactory to the Owner, that the bidder and the bidder's proposed subcontractors have sufficient means and experience in the types of work required to assure completion of the Contract in a satisfactory manner.

1.6 WITHDRAWAL OF BIDS

- A. A bidder may withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening bids.
- B. No bidder may withdraw his bid for a period of forty-five calendar days after the date set for opening thereof, and bids shall be subject to acceptance by the Owner during this period.

1.7 QUALIFICATION OF BIDDERS

- A. A contract will be awarded only to a responsible bidder, qualified by experience and in a financial position to perform the work specified.
- B. If the bidder has not been pre-qualified with UF Procurement Services within the fiscal year (July 1 through June 30), the bidder may be required to submit the following evidence of eligibility:
 - 1. Evidence that bidder is licensed by the appropriate government agency to perform the work specified.
 - 2. Experience record showing bidder's training and experience in similar work.
 - 3. List a brief description of projects of similar size and/or complexity satisfactorily completed, with location, dates of contracts, names of contracts, and names and addresses of owners.

1.8 SUBCONTRACTS

If the Bidder intends to subcontract any of the Work:

- A. A list of all proposed subcontractors shall be provided with the bid for scopes/packages in excess of \$10,000. See Section 00430 - Subcontractor Listing.
- B. Each subcontractor performing work in excess of \$10,000 must present evidence of being qualified in and licensed for the applicable trade. Such proof of subcontractor licensure shall be provided by the successful bidder after award, but prior to commencement of Work.

1.9 PERFORMANCE AND PAYMENT BONDS

See General Terms & Conditions, Article 20.

1.10 BID DEPOSIT

Not required.

1.11 AWARD OR REJECTION OF BIDS

The Contract, if awarded, will be awarded to the responsible and responsive bidder who has proposed the lowest Contract Sum, subject to the owner's right to reject any or all bids and to waive informality

and irregularity in the bids and in the bidding.

1.12 MANDATORY PRE-BID CONFERENCE:

A mandatory Pre-bid Conference will be held prior to the scheduled bid opening for the purpose of considering questions posed by bidders. The conference will be open to interested bidders, prospective subcontractors, and any other interested parties. This conference will be held **August 19, 2019 at 10:30 AM local time. Meeting will begin at the north elevators on the 10th floor of the Dental Science Building, 1395 Center Drive, Gainesville, Florida.**

1.13 EXECUTION OF AGREEMENT

- A. A Purchase Order (PO) will be issued for purposes of fiscal encumbrance and payment. The PO itself serves as the form of contract.
- B. Upon notice of Bid Award, the bidder to whom the Contract is awarded shall deliver to UF those Certificates of Insurance and Payment & Performance Bonds required by the Contract Documents.
- C. Bonds and Certificates of Insurance shall be approved by UF before the successful bidder may proceed with the Work.

1.14 INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

- A. If any person contemplating submitting a bid for construction of the Work is in doubt as to the true meaning of any part of the Contract Documents, or finds discrepancies in or omissions from any part of the Contract Documents, they may submit a written request for interpretation thereof no later than **August 27, 2019 at 5:00PM**, local time, to Karen Olitsky, Procurement Agent III at kolitsk@ufl.edu. The person submitting the request shall be responsible for its prompt delivery.
- B. Interpretations or corrections of proposed Contract Documents will be made only by Addendum and will be available on the Procurement Services "Schedule of Bids" webpage <https://procurement.ufl.edu/vendors/schedule-of-bids/>. The Owner will not be responsible for any other explanations or interpretations of the proposed Contract Documents.

1.15 TIME OF COMPLETION:

- A. Date of beginning, rate of progress and time for completion of Work for this Project are ESSENTIAL CONDITIONS of Contract. Successful Bidder hereby agrees that Work required by this Contract shall be commenced within ten (10) calendar days after issuance date of written Notice to Proceed; that all insurance and permits will be obtained; that all documents and notices will be filed; that all requirements as specified will be met; and that Work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will insure Substantial Completion of entire Project within 60 calendar days after receipt of Notice to Proceed, and shall be finally completed within 15 days after the date of Substantial Completion.

END OF SECTION

00100-3

00310 - BID FORMS

BID PROPOSAL

FROM:

(Name of Bidder)

TO:

UNIVERSITY OF FLORIDA
PROCUREMENT SERVICES
971 Elmore Drive
P.O. Box 115250
Gainesville, Florida 32611-5250

The undersigned, hereinafter called "Bidder", having reviewed the Contract Documents for the Project entitled **ITB20KO-117, Chilled Water Pipe Replacement – Dental Science Building Floors 8, 9 and 10** and having visited and thoroughly inspected the site of the proposed Project and familiarized himself/herself with all conditions affecting and governing the construction of said Project, hereby proposes to furnish all labor, materials, equipment and other items, facilities and services for the proper execution and completion of the Project, in strict compliance with the Contract Documents, Addenda, and all other Documents relating thereto on file in Procurement Services, and, if awarded the Contract, to complete the said Work within the time limits called for in the Documents and as stated herein, for the sums as enumerated on this and the following pages:

BASE BID:

Dollars

Figures: \$ _____

ADDITIVE ALTERNATE #1:

Dollars

Figures: \$ _____

ADDITIVE ALTERNATE #2:

Dollars

Figures: \$ _____

ADDITIVE ALTERNATE #3:

Dollars

Figures: \$ _____

ADDITIVE ALTERNATE #4:

_____ Dollars

Figures: \$ _____

ADDITIVE ALTERNATE #5:

_____ Dollars

Figures: \$ _____

ADDENDA:

Receipt of the following Addenda to the Construction Documents is acknowledged:

ADDENDUM # _____ Dated _____

ADDENDUM # _____ Dated _____

ADDENDUM # _____ Dated _____

COMPLETION DATE:

All Work covered by the Bidding Documents and the foregoing Base Bid shall be completed and ready for Owner's occupancy as specified in the contract documents.

SIGNATURE:

I hereby certify that for all statements and amounts herein made on behalf of

(Name of Bidder)

a (Corporation) (Partnership) (Individual) organized and existing under the laws of the State of Florida, I have carefully prepared this Bid Proposal from Contract Documents described hereinbefore, I have examined Contract Documents and local conditions affecting execution of Work before submitting this Bid Proposal, I have full authority to make the statements and commitment herein and submit this Bid Proposal in (its) (their) behalf, and all statements are true and correct.

Signed and sealed this _____ day of _____, 2019.

(Signature of Bidder)

(Print Name)

(Title)

WITNESS:

(Signature of Witness)

(Print Name)

Address: _____

(City) (State) (Zip Code)

END OF SECTION

00430 - SUBCONTRACTOR LISTING

1.1 RELATED SECTIONS

- A. Documents affecting the work of this Section include, but are not necessarily limited to, the General Terms & Conditions and other Sections in Divisions 0 and 1 of these Specifications.

1.2 SUBCONTRACTOR LISTS

- A. Each bidder shall furnish with its bid a list of all subcontractors for subcontracted scopes/packages of work valued at more than \$10,000.
- B. This list shall identify – for each subcontracted package in excess of \$10,000 – the name and address of the proposed subcontractor and the approximate value of the subcontract.
- C. If the bidder does not intend to subcontract portions of the Work in amounts greater than \$10,000, then a statement to that affect shall be furnished with the bid.
- D. See Section 00100 - Instruction to Bidders regarding subcontractor licensure requirements.

END OF SECTION



GENERAL TERMS and CONDITIONS

for Construction Management At-Risk and Design-Bid-Build Projects

Revised May 2017

Business Affairs
Planning Design & Construction
www.facilities.ufl.edu

GTC-1

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ARTICLE 1 – DEFINITIONS

When one of the following capitalized words, terms, or phrases is used in the Contract for Construction, it shall be interpreted or construed first as defined below, second according to its generally accepted meaning in the construction industry, and third according to its common and customary usage.

Authority Having Jurisdiction (AHJ): That person or entity who has the delegated authority to determine, mandate, and enforce building code requirements established by jurisdictional governing bodies. For University of Florida projects, the University's Division of Environmental Health & Safety is normally the primary AHJ.

BIM Execution Plan: A detailed and project-specific guide for the development, sharing, use, and finalization of BIM models and model-related documents and information.

Building Information Modeling (BIM): A process involving the generation and management of digital representations of physical and functional characteristics of a facility through the use of three-dimensional, intelligent design information. The resulting building information models become shared knowledge resources to support decision-making about a facility from the earliest conceptual stages, through design, construction, and the facility's operational life.

Builder: An entity, including but not limited to a general contractor, a trade contractor or a construction manager, engaged directly by the Owner pursuant to a Contract for Construction.

Certificate of Substantial Completion: Document declaring the Work Substantially Complete and suitable for occupancy or beneficial use by the Owner.

Commissioning: A process – normally handled by one or more independent consultants working directly for the Owner – to ensure that particular building systems are planned, designed, installed, tested, optimized, and capable of being operated and maintained to perform in accordance with the Owner's goals and requirements.

Construction Documents: Drawings, specifications, revisions, addenda, and other information which set forth in detail the Work.

Construction Price: The dollar amount for which a Builder agrees to perform the Work set forth in a Contract for Construction.

Construction Schedule: The timetable which sets forth pertinent dates for timely completion of the Work.

Contract for Construction: The entire agreement between Owner and Builder, consisting of the Owner-Builder Agreement and all exhibits thereto; these General Terms and Conditions; special conditions, if any; proposal(s) submitted by the Builder and accepted by Owner, if any; the Construction Documents; any amendments or addenda executed by the Owner and the Builder hereafter; and Owner-approved change order(s) or field orders. Documents not included or expressly contemplated in this definition do not, and shall not, form any part of the Contract for Construction. Without limiting the generality of the foregoing, shop drawings and other submittals from the Builder or its subcontractors and suppliers do not constitute a part of the Contract for Construction.

Final Completion: The stage of construction when the Work has been completed in accordance with the Contract for Construction and the Owner has received all documents and items necessary for closeout of the Work. Final Completion of the Work shall be deemed to have occurred on the later of: (i) the date that the Work passes a Final Completion inspection, or (ii) the date that the Builder has produced all required Final Completion close-out documentation and items. Final Completion shall not be deemed to have occurred and no final payment shall be due the Builder or any of its subcontractors or suppliers until the Work has passed the Final Completion inspection and Builder has provided all required Final Completion closeout documentation and items to the Owner.

Hazardous Substances: The term "Hazardous Substances" means all hazardous or toxic substances, materials, wastes, pollutants and contaminants which are listed, defined, or regulated under applicable laws, rules, regulations, codes, ordinances, orders and directives pertaining or related to health, safety, or the environment, including, but not limited to, the Comprehensive Environmental Response Compensation and Liability Act as amended, (42 U.S.C. § 9601 et seq), the Resource Conservation and Recovery Act as amended, (42 U.S.C. § 6901 et seq), the Federal Water Pollution Control Act (33 U.S.C.A. §§ 1251 to 1387), the Clean Air Act (42 U.S.C.A. §§ 7401 to 7671q), the Emergency Planning and Community Right to Know Act (42 U.S.C.A. §§ 11001 to 11050), the Toxic Substances Control Act (15 U.S.C.A. §§ 2601 to 2692), the Solid Waste Disposal Act (42 U.S.C.A. §§ 6901 to 6992k), the Oil Pollution Act (33 U.S.C.A. §§ 2701 to 2761) and all rules and regulations promulgated pursuant thereto. Without limiting the generality of the foregoing, "Hazardous Substances" shall specifically include polychlorinated biphenyl, asbestos (friable and non-friable), radon, urea formaldehyde, gasoline, diesel, oil, hydrocarbons, petroleum derived constituents, biomedical waste, or hazardous or toxic residue.

Owner: The University of Florida Board of Trustees, a public body corporate of the State of Florida.

Owner's Related Parties: The Board of Governors and its officers, trustees, and employees; and the Owner and its officers, trustees, and employees.

Professional: An entity, including but not limited to a licensed architect or engineer, engaged directly by the Owner to provide design or engineering services.

Project: Owner's undertaking to effect the construction, installation, renovation, or demolition of a facility or improvement, as the case may be, that is the subject of the Contract for Construction between Owner and Builder.

Site: The geographical location of a Project, usually defined by legal boundary lines, and the location characteristics including, but not limited to, grades and lines of streets, alleys, pavements and adjoining structures, rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, existing buildings and improvements, and service and utility lines.

Substantial Completion (or Substantially Complete): The stage of construction when the Owner can occupy or beneficially use satisfactorily completed Work for its intended purpose and a certificate of occupancy has been issued. Substantial Completion of the Work shall be deemed to have occurred on the later of: (i) the date the Work passes all Substantial Completion inspections, (ii) the date Builder has produced the required Substantial Completion documentation and items, or (iii) the date Authorities Having Jurisdiction provide a certificate of occupancy.

Work: Any and all computers, construction machinery, documents, equipment, facilities, fixtures, furnishings, goods, heat, items, labor, licenses, management, materials, permits, products, services, supervision, supplies, systems, taxes, testing, tools, utilities, transportation, vehicles, and water, required to be performed or supplied and/or necessary for proper execution and completion of the Project, or some portion thereof, whether or not incorporated or to be incorporated into the Project; provided, however, that Work does not include performance of pre-construction services by a construction manager.

ARTICLE 2 – CONSTRUCTION DOCUMENTS

2.1 Quantity and Format of Documents

The Owner shall provide the Builder with one printed set of Construction Documents, one set of electronic documents (plans and specifications) in PDF format, and one set of BIM files.

2.2 Minimum Requirements

In every case, requirements established by the Construction Documents shall be considered as the minimum acceptable standard.

2.3 Owner Disclaimer of Warranty

The Owner has requested that its Professional(s) prepare Construction Documents for the Project, including the plans and specifications, which are to be complete, accurate, coordinated, and adequate for bidding, negotiating, and constructing the Work. However, the Owner makes no representation or warranty of any nature whatsoever to the Builder concerning the Construction Documents or BIM documents. The Builder hereby acknowledges and represents that it has not relied, and does not and will not rely, upon any representations or warranties by the Owner concerning such documents, as no such representations or warranties have been or are hereby made.

2.4 Conflicts in Documents

In the event of any conflict, discrepancy, or inconsistency among any of the documents comprising the Contract for Construction, the following shall control:

- 2.4.1 As between figures given on plans and scaled measurements, the figures shall govern;
- 2.4.2 As between large-scale plans and small-scale plans, the large-scale plans shall govern;
- 2.4.3 As between plans and specifications, the requirements of the specifications shall govern;
- 2.4.4 As between plans or specifications and BIM models, the requirements of the plans or specifications shall govern.
- 2.4.5 As between architectural drawings and (structural, civil, mechanical, electrical, plumbing, or fire protection) engineering drawings, the engineering drawings shall govern.

2.5 Contract Changes

The Builder understands and agrees that the Contract for Construction – including the Construction Documents – cannot be changed except as provided herein. No act, omission, or course of dealing by the parties shall alter the requirement that modifications of the Contract for Construction must be accomplished by written documents signed by the parties.

ARTICLE 3 – BUILDER’S REVIEWS AND EVALUATIONS

3.1 Sufficiency of Construction Documents

The Builder acknowledges its continuing duty to review and evaluate the Construction Documents during the performance of its services and shall immediately notify the Owner and the Professional(s) of any (i) problems, conflicts, defects, deficiencies, inconsistencies, or omissions it discovers in or between the Construction Documents; and (ii) variances it discovers between the Construction Documents and applicable laws, statutes, building codes, rules, or regulations.

3.1.1 If the Builder performs any Work it knows or should have known involves (i) a recognized problem, conflict, defect, deficiency, inconsistency or omission in the Construction Documents; or (ii) a variance between the Construction Documents and requirements of applicable laws, statutes, building codes, rules, regulations, or the Owner’s design and construction standards without notifying the Professional(s) and prior to receiving written authorization to proceed, the Builder shall be responsible for the consequences of such performance.

3.1.2 Drawings are generally drawn to scale; however, the figured dimensions or notes thereon shall govern. Before ordering any materials or doing any Work, the Builder and subcontractors shall verify all measurements at the Site and shall be responsible for the correctness of same. Discrepancies shall be reported in writing to the Professional prior to proceeding with the Work. No extra charge or compensation will be entertained due to differences between actual measurements and dimensions indicated on drawings, if such differences do not result in a change in the scope of Work or if the Professional failed to receive written notice before the Work was performed.

3.2 Sufficiency of Site

Prior to signing the Contract for Construction, the Builder has:

- (i) visited the Site and become familiar with local conditions under which the Project is to be constructed and operated; and
- (ii) reviewed and familiarized itself with the Site survey and any existing structures on the Site, and gathered all other information necessary for a full understanding of the Work.

In addition, if the Work involves modifications to or remodeling of an existing structure(s) or other man-made feature(s) on the Site, the Builder has also:

- (iii) reviewed all as-built and record drawings, plans and specifications of which Owner has informed Builder; and

- (iv) thoroughly inspected the structure(s) and man-made feature(s) to be modified or remodeled prior to submission of bid, if any, but in all events prior to signing the Contract for Construction.

Claims resulting from the Builder's failure to familiarize itself with the Site or pertinent documents shall be deemed waived.

ARTICLE 4 – BUILDER'S DUTIES, OBLIGATIONS, AND RESPONSIBILITIES

4.1 Performance Of Work

The Builder shall perform and complete its obligations under the Contract for Construction using its best skill and attention, and covenants with the Owner to furnish management, supervision, coordination, labor, and services (i) which expeditiously, economically and properly complete the Work in the manner most consistent with the Owner's interests and objectives; (ii) which comply with the Contract for Construction; and (iii) which are in accordance with the highest standards currently practiced by persons and entities performing or providing management, supervision, coordination, labor and services on projects similar in size, complexity, and cost to the Project.

- 4.1.1 The Builder shall not be required to provide professional services which constitute the practice of architecture or engineering, unless provided in the Construction Documents and relating to those divisions of the Work for which it is appropriate for Builder's subcontractors to engage or employ licensed engineers for design associated with the Work, such as trusses.
- 4.1.2. All services rendered by the Builder for the Project shall be performed by or under the immediate supervision of persons possessing expertise in the discipline of the service being rendered.
- 4.1.3 The Builder shall, in the course of providing the Work, cooperate and communicate with the Owner, the Professional, the Owner's Commissioning consultants, and all other persons or entities as required for satisfactory completion of the Project.
- 4.1.4 The Builder understands and acknowledges that the Work referred to in the Contract for Construction may be only part of the Project and that the Project may include the construction of other structures or other construction activities on the same Site. The Builder shall conduct all its activities so as not to interfere with the construction of, or operations within or from, other structures on the Site.
- 4.1.5 The Builder shall not damage, endanger, compromise, or destroy any part of the Project or the Site, including by way of example and not limitation, work being performed by others on the Site, monuments, stakes, benchmarks and other survey points, utility services, and existing features or structures on the Site. Should the Builder damage, compromise or destroy any part of the Project or the Site, the Builder shall be fully and exclusively responsible for and bear all costs associated therewith.

4.2 Compliance With Laws

- 4.2.1 The Builder shall comply with all applicable laws, statutes, building codes, rules, regulations, and lawful orders of all governmental, public, and quasi-public authorities and agencies having jurisdiction over the Project.
- 4.2.2 The Builder shall prepare and file documents required to obtain, and shall obtain, all necessary approvals and permits, including building permit(s), of all governmental authorities having jurisdiction over the Work, provided Owner shall pay all building permit and state fire marshal inspection fees directly.
- 4.2.3 The Builder shall give all notices required of it by governmental authorities relating to the Project.

4.3 Safety

Safety shall be a prime concern of the Builder at all times. The Builder shall be solely responsible for and have control over the means, methods, techniques, sequences, and procedures for coordinating and constructing the Work, including Site safety and safety precautions and programs.

4.4 On Site Records

- 4.4.1 The Builder shall maintain at the Site one copy of all drawings, specifications, addenda, approved shop drawings, daily logs, change orders, submittals, other modifications, and all other documents generated throughout the course of the project in good order. The daily logs shall contain detailed information regarding weather conditions, materials delivered, work performed, operating hours, subcontractors working on the Project, and staffing of each subcontractor.
- 4.4.2 The Builder shall continuously update all drawings and specifications to reflect changes as they occur throughout construction. Such “as-built” plans and specifications shall be available at all times to the Owner, the Professional(s), the Owner’s consultants, and quality control and testing agency personnel. The drawings shall be neatly and clearly marked in color during construction to record all variations made during construction, and the Builder shall include such supplementary notes and details necessary to clearly and accurately represent as-built construction.
- 4.4.3 Depending on the requirements of the project-specific BIM Execution Plan, the Builder shall also maintain copies of the BIM models that reflect the as-built or as-installed conditions, geometry, and product/equipment information.

4.5 Bribes and Kick-Backs

The Builder shall not by any means:

- (i) induce any person or entity employed in the construction of the Project to give up any part of the compensation to which that person or entity is entitled;
- (ii) offer or accept any bribes or kick-backs in connection with the Project from or to any individual or entity, including any of its trade contractors, subcontractors, consultants, suppliers, or manufacturers of Project goods and materials; or

- (iii) without the express written permission of the Owner in accordance with Owner's policies, call for or by exclusion require or recommend the use of any subcontractor, consultant, product, material, equipment, system, process, or procedure in which the Builder has a direct or indirect proprietary or other pecuniary interest.

4.6 Quality Control And Testing

The Builder shall develop and implement a quality management program to ensure quality construction. Unless otherwise specified in the Contract for Construction, the Builder shall procure the quality control and testing agencies, subject to Owner's written approval. The Builder shall coordinate all tests and inspections required by the Construction Documents, and the Builder shall arrange for tests and inspections to be conducted as necessary to avoid any interference with the progress of Work. No claims for extension of time or extra costs will be allowed on account of any testing, retesting, inspection, re-inspection, or rejection of Work when defective or deficient Work is found. Cost of specified measures and tests required by the Construction Documents and performed by Owner-approved quality control and testing agencies shall be included in the Cost of the Work.

4.7 Incident Reporting

The Builder shall immediately notify the Owner and Professional(s), both orally and in writing, of the nature and details of all incidents which may adversely affect the quality or progress of the Work including, but not limited to, union jurisdictional disputes, accidents, delays, damages to Work, and other significant occurrences.

4.8 Hazardous Substances

The Builder shall immediately notify the Owner and the Professional(s), both orally and in writing, of the presence and location of any physical evidence of, or information regarding, environmental contamination on the Site (including but not limited to Hazardous Substances and petroleum releases) of which it becomes aware. If the Builder encounters environmental contamination (including but not limited to Hazardous Substances), the Builder shall (i) immediately stop performance of Work or that portion of the Work affected by or affecting such contamination; (ii) secure the contaminated area against intrusion; (iii) not disturb or remove the contamination; (iv) not proceed, or allow any subcontractor or supplier to proceed, with any Work or other activities in the area affected by such contamination until directed to do so by the Owner; and (v) take any other steps necessary to protect life and health.

4.9 Owner's Use Of and Access To The Site

The Builder shall perform the Work so as not to interrupt any operations of the Owner on, adjacent to, or near the Site.

4.9.1 The Builder understands and acknowledges that the Owner may need access to or use of certain areas of the Site or Work prior to the Builder's achievement of Substantial Completion, and that such occupancy, access, or use shall not constitute the Owner's acceptance of any Work.

4.9.2 The Builder shall not enter any Owner-occupied area of the Site or Project unless first approved and scheduled by the Owner. The Builder understands and acknowledges that the Owner may incur damages if the Owner's operations on the Site are interrupted or impaired as a result of the Work.

- 4.9.3 The Builder shall afford the Owner's own forces and other consultants, trade contractors, subcontractors, and suppliers, access to the Site for performance of their activities, and shall connect and coordinate its construction and operations with theirs as required by the Construction Documents.

4.10 Utilities

The Builder shall be responsible for all costs associated with connections to, and consumption of, utilities required for temporary service and construction.

ARTICLE 5 – BUILDER'S PERSONNEL, SUBCONTRACTORS, SUPPLIERS, AND SITE FACILITIES

5.1 Project Staffing

The Builder shall staff the Project with qualified and designated individuals and entities responsible for its obligations and performance.

- 5.1.1 An authorized representative of the Builder shall be present at all times when Work is being performed.
- 5.1.2 The Builder shall employ persons skilled in the tasks assigned to them and shall contract with subcontractors and suppliers skilled in the tasks assigned to them and capable of working harmoniously with all trades, crafts and other individuals on the Project. The Builder shall use its best efforts to minimize the likelihood of any strike, work stoppage, or other labor disturbance.
- 5.1.3 Students, faculty, and staff shall not be harassed, disturbed, or in any way disrupted in their lawful pursuits. The Builder shall immediately remove from the Site, for the duration of the Project, any person making an inappropriate religious, racial, sexual or ethnic comment, statement or gesture toward any other individual. Sexual harassment shall be reported to the University's Title IX Coordinator and Deputy Title IX Coordinator for Students as prescribed elsewhere in the Contract for Construction.
- 5.1.4 The Builder shall immediately remove from the Site, for the duration of the Project, any person who is incompetent, careless, or not working in harmony.
- 5.1.5 The Builder shall be responsible to the Owner for the acts and omissions of Builder's agents and employees, consultants, subcontractors, and suppliers.
- 5.1.6 Employees of the Builder and its subcontractors shall be screened for – and banned from working on the Owner's property if found to have committed – certain crimes as described elsewhere in the Contract for Construction. The cost of such screening shall be included in the Construction Price.

5.2 Subcontractor / Supplier Contracts

The Builder shall enter into written contracts with its subcontractors and suppliers, and those written contracts shall be consistent with the Contract for Construction. It is the intent of the Owner and the Builder that the obligations of the Builder's subcontractors and

suppliers inure to the benefit of the Owner and the Builder, and that the Owner be a third-party beneficiary of the Builder's agreements with its subcontractors and suppliers.

- 5.2.1 The Builder shall make available to each subcontractor and supplier, prior to the execution of written contracts with any of them, a copy of the pertinent portions of the Contract for Construction, including those portions of the Construction Documents to which the subcontractor or supplier will be bound, and shall require that each subcontractor and supplier shall similarly make copies of applicable parts of such documents available to its respective subcontractors and suppliers.
- 5.2.2 The Builder shall include in its written contracts with subcontractors and suppliers a provision that includes the acknowledgment and agreement of the subcontractor or supplier that it has received and reviewed the applicable terms, conditions, and requirements of the Contract for Construction included by reference in its written contract with the Builder, and that it will abide by those terms, conditions, and requirements.
- 5.2.3 The Builder's written contracts with its subcontractors and suppliers shall preserve and protect the rights of the Owner and include the acknowledgment and agreement of each subcontractor or supplier that the Owner is a third-party beneficiary of the contract. The Builder's agreements with its subcontractors and suppliers shall require that in the event of default under, or termination of, the Contract for Construction, and upon request of the Owner, the Builder's subcontractors and suppliers will perform services for the Owner.
- 5.2.4 Without limitation of the foregoing subsections, the Builder's written contracts with its subcontractors and suppliers shall include the following provision: *"When the Builder receives payment from the Owner for labor, services, or materials furnished by subcontractors and suppliers hired by the Builder for the Project, the Builder shall remit payment due to those subcontractors and suppliers, less the value of any item contested in accordance with the Contract for Construction, within ten (10) days after the Builder's receipt of payment from the Owner. When the payment due the subcontractor is for final payment, including retainage, the subcontractor must include with the invoice for final payment, a conditional release of lien and all required warranties and closeout documentation. When the subcontractor receives payment from the Builder for labor, services, or materials furnished by the subcontractors and suppliers hired by the subcontractor, the subcontractor shall remit payment due to those subcontractors and suppliers, less the value of any item contested in accordance with the Contract for Construction, within ten (10) days after the subcontractor's receipt of payment."*

5.3 Resolution of Trade Disputes

The Builder shall promptly resolve claims, complaints, labor disputes, and disputes over assignment of work tasks by and among its subcontractors and suppliers.

ARTICLE 6 – GOODS, PRODUCTS, AND MATERIALS

6.1 Quality Of Materials

The Builder shall furnish goods, products, materials, equipment, and systems that:

- (i) comply with the Contract for Construction;
- (ii) conform to applicable specifications, descriptions, instructions, drawings, data, and samples;
- (iii) are new (unless otherwise specified or permitted) and without apparent damage;
- (iv) are of quality, strength, durability, capacity, or appearance equal to or higher than that required by the Construction Documents;
- (v) are merchantable;
- (vi) are free from defects; and
- (vii) exceed and/or are in addition to those required by manufacturers' or suppliers' specifications where such additional items are required by the Construction Documents.

6.2 Installation And Use Of Materials

All goods, products, materials, equipment, and systems shall, unless specifically stated otherwise, be furnished, used, installed, employed, and protected in strict compliance with the specifications, recommendations, and instructions of the manufacturer or supplier, unless such specifications, recommendations, or instructions deviate from accepted construction practices or the Construction Documents, in which case the Builder shall so inform the Owner and Professional and shall proceed as directed by that Professional, unless otherwise directed by the Owner. The Builder shall coordinate and interrelate all trade contracts and subcontracts to ensure compatibility of goods, products, materials, equipment, and systems – and validity of all warranties and guarantees – required by the Construction Documents for the Work.

6.3 Unsuitable Materials

The Builder shall inform the Owner of goods, products, materials, and equipment or systems the Builder knows are unsuitable or unavailable at the time of bid submission. Claims relating to or arising out of claims that goods, products, materials, equipment, or systems are unsuitable or unavailable shall not be entertained by the Owner unless the Builder, subcontractor, or supplier notified the Owner in writing at the time of bid submission, along with proposed alternatives. Approval by the Owner and the Professional does not mean or imply final acceptance by the Owner and Professional if such items should be defective or not as previously represented. Should the Builder furnish any approved goods, products, materials, equipment, or systems different from or in addition to those required by the Construction Documents which require supplemental materials or installation procedures different from or in addition to those required for specified items, the Builder shall provide such at no increased cost to the Owner.

6.4 Substitutions

There shall be no substitution of products, materials, or equipment unless approved by the Professional in advance of procuring such goods, except as expressly permitted by the Contract for Construction.

6.5 Construction Manager Responsibility

If Builder is acting as a construction manager, Builder shall also inform the Owner and Professional during the various stages of design development if proposed materials or equipment do not conform with the Owner's construction budget, Owner's program and/or project requirements, or Owner's design and construction standards.

6.6 Security For The Project

The Builder shall provide security for the Project, including but not limited to security for Work in progress and for the goods, products, materials, equipment, systems, construction machinery, tools, devices, and other items required, used, or to be used for performing the Work.

ARTICLE 7 – DOCUMENTS AND INFORMATION

7.1 Information from Owner

The Owner shall provide the Builder with information reasonably necessary to assist the Builder in performing its services including, if applicable and available:

- (i) the Site legal description and any required survey;
- (ii) all written and tangible material of which it informs Builder concerning conditions below ground at the Site;
- (iii) if the Project involves an existing structure, all as-built drawings, record drawings, plans, specifications, and structural information; and
- (iv) the Owner's pertinent Project dates and key milestone dates.

7.2 Resolution of Questions

The Builder shall resolve all questions concerning the Construction Documents with the Professional(s) who prepared the documents.

7.3 Processing of Documents

When requested to do so by the Owner, the Builder shall process documents and provide other reasonably required drawings, services, and certifications necessary to enable the Owner to (i) obtain permits or other approvals not otherwise required to be obtained by Builder and (ii) represent that the Work complies with the requirements of Authorities Having Jurisdiction.

7.4 Sufficiency of Owner Information

The furnishing of information by the Owner to the Builder shall not relieve the Builder of responsibilities contained elsewhere in the Contract for Construction to evaluate information and documents provided by the Owner. The Builder shall timely notify the Owner in writing of any additional information needed or services required from the Owner in order for the Builder to perform the Work.

ARTICLE 8 – SUBMITTALS

8.1 Submittal Schedule

The Builder shall timely prepare and transmit to the Professional a schedule for provision of all anticipated submittals and shop drawings. The schedule shall (i) include submittals required by the specifications; (ii) be in a format acceptable to the Professional; (iii) be coordinated with the Construction Schedule; and (iv) set forth specific dates for submission of the listed submittals.

8.2 Processing of Submittals

The Builder shall in timely fashion review, approve or reject as necessary, and forward approved submittals to the Professional for review and approval along with such detail and information as the Professional requires. No part of the Work dealt with by a submittal shall be fabricated or performed until such approval has been given.

8.2.1 Submittals and shop drawings shall be provided in electronic format – searchable PDF for product data and other submittals; DWG, RVT, or other Navisworks-compatible software for shop drawings.

8.2.2 The Professional is responsible to the Owner, but not to the Builder, to verify that the submittals conform to the design concept and functional requirements of the plans and specifications, that the detailed design portrayed in shop drawings and proposed equipment and materials shown in submittals are of the quality specified and will function properly, and that the submittals comply with the Contract for Construction.

8.2.3 All Work shall be performed in accordance with approved submittals. Approval of submittals by the Professional shall not relieve the Builder from complying with the Contract for Construction, including all plans and specifications, addenda thereto, and approved Change Orders.

8.2.4 Re-submittals required to correct errors, omissions, or invalid substitutions by the Builder or its subcontractors shall not constitute an excusable or compensable delay.

8.3 Record Documents

The Builder shall provide to Owner final and complete electronic copies of all submittals and shop drawings, updated and annotated as needed to illustrate the products, equipment, and materials actually installed.

ARTICLE 9 – BUILDER’S INSPECTION AND CORRECTION OF DEFECTIVE OR INCOMPLETE WORK

9.1 Rejection and Correction of Work In Progress

During the course of Project, the Builder shall inspect and promptly reject any Work that (i) does not conform to the Construction Documents or (ii) does not comply with any applicable law, statute, building code, rule, or regulation of any governmental, public, and quasi-public authorities or Authorities Having Jurisdiction.

- 9.1.1 The Builder shall promptly correct or require the correction of all rejected Work, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. The Builder shall bear all costs of correcting such Work, including additional testing and inspections and compensation for all services and expenses necessitated by such correction.
- 9.1.2 The Builder shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, of the Owner or other trade contractors or subcontractors caused by the Builder's correction or removal of rejected Work.

9.2 Covered or Concealed Work

If a portion of the Work has been covered, the Builder shall, if notified to do so by the Owner or the Professional, uncover the designated portion for observation and then replace it.

- 9.2.1 If the designated portion of the Work was covered contrary to the request of the Owner or the Professional, or to requirements specifically expressed in the Construction Documents, the Builder shall receive no additional compensation for the costs of uncovering and replacement or modification of the Construction Schedule.
- 9.2.2 If the designated portion of the Work was covered prior to a specific request by the Owner or the Professional that it remain uncovered, the Builder shall receive additional compensation for the costs of uncovering and replacement or modification of the Construction Schedule(s) only if the designated portion of the Work was in conformance with the Construction Documents.

ARTICLE 10 – CHANGE ORDERS, CHANGES TO THE WORK, AND CHANGED CONDITIONS

10.1 Change Order Proposals and Requests

Builder may propose, and Owner or the Professional may request, changes to the Work, compensation, or applicable schedules.

- 10.1.1 With respect to Builder's proposals for changes, the Builder shall prepare and submit change order proposals to the Professional, together with appropriate back-up documentation.
- 10.1.2 With respect to Owner's and/or the Professional's requests for changes, the Builder shall promptly review and respond to such requests provided by the Owner or the Professional.
- 10.1.3 When requested to do so, the Builder shall prepare and submit to the Professional drawings, specifications, detailed cost estimates as prescribed below, or other data in support of a change order proposal or request.
- 10.1.4 Each Builder-submitted change order proposal shall include any and all time and monetary impacts of the change, whether the change order is considered alone or with all other changes during the course of the Project, together with substantiating back-up documentation.

10.2 Owner-Directed Changes

The Owner may unilaterally direct the Builder to implement changes in the Work so long as the Work the Owner is requiring is not outside of the general scope of the Contract for Construction, and the Builder, upon written direction from the Owner, shall proceed with such change.

10.3 Professional-Directed Changes

The Professional, without the Owner's prior approval, may authorize or direct the Builder to make minor changes in the Work that are consistent with the intent of the Construction Documents and which do not involve a change in Project cost, time for construction, scope, or approved design elements. Any such minor changes shall be implemented by written field order or supplemental instruction from the Professional and executed promptly by the Builder.

10.4 Administration of Changes

The Professional will administer and manage all change orders and change order proposals or requests – including claims for additional compensation, time, or both – and will prepare required drawings, specifications, and other supporting data in connection therewith.

10.5 Compensation for Changes

With respect to all change order proposals or requests involving credit to the Owner or additional compensation to the Builder, the Builder shall (i) obtain from subcontractors and suppliers the best possible price quotations; (ii) review such quotations to ascertain whether they are reasonable; (iii) prepare an itemized accounting together with appropriate supporting data, including reasonable expenditures by, and savings to, those performing the Work involved in the proposed change; and (iv) provide a reasonable and detailed price quotation to the Professional.

10.5.1 If Professional determines price quotations for change order proposals or requests are unreasonable, the Builder shall, in writing, justify said quotations or provide additional back-up documentation. If, after review of the additional information, the Professional determines the quotation is unreasonable, the Owner may require the subject Work be performed on a time and material basis.

10.5.2 The Builder and its subcontractors and suppliers shall be allowed no additional compensation for any costs, fees, or expenses incurred in performing services already required by the Contract for Construction, and shall not be entitled to additional reimbursement for home office, other non-jobsite or indirect overhead expenses, or tools necessary for construction.

10.5.3 It is the responsibility of the Builder to review and approve all pricing of additional work required of its subcontractors and suppliers.

10.6 Concealed and Unforeseen Conditions

If (i) the Builder encounters concealed or unforeseen conditions of an unusual nature that affect performance of the Work; or (ii) the conditions vary from those indicated by the Construction Documents; and (iii) such conditions are not ordinarily found to exist or differ materially from those generally recognized as inherent in work of the character provided by the Builder, the Builder shall promptly, but in no event later than seven (7) calendar

days after first observance of the conditions, notify the Professional and the Owner before conditions are disturbed and give the Professional or the Owner opportunity to observe the condition in its undisturbed state.

10.6.1 Owner and Professional shall promptly investigate the conditions. If Owner and Professional determine, within their discretion, that the conditions (i) differ substantially from those indicated in the Construction Documents and (ii) cause a material increase or decrease in the Builder's cost of, or time required for, performance of the Work, then compensation and/or time for performance will be equitably adjusted.

10.6.2 All adjustments in compensation or extensions of time shall be by change order. Change order proposals or requests shall be submitted within fourteen (14) calendar days of the date of observation of the changed or unknown conditions.

10.6.3 The Builder's failure to notify the Professional and Owner as provided in this Article shall constitute a waiver of any claim arising out of or relating to such concealed or unknown condition.

10.7 Performance of Changes

Upon Builder's receipt of an executed change order or approved change order proposal, changes in the Work shall be promptly performed. All changes in the Work shall be performed under applicable conditions of the Construction Documents.

10.8 Disputes Regarding Changes

10.8.1 Regardless if there is a dispute (i) that a change has occurred; (ii) whether a change in the Work will result in adjustment of compensation or applicable schedules; or (iii) as to the amount of any adjustment of compensation or applicable schedules, the change shall be carried out if the Owner so directs. No claim shall be prejudiced by performance of the Work so long as the Owner is notified of the claim in writing prior to performance of the Work which is the subject of the dispute and the party disputing the decision of the Owner recites the reasons for its dispute in the written notice. Failure to notify the Owner in writing shall constitute a waiver of any claim resulting from the change.

10.8.2 In the event a change order proposal is approved by the Owner in the absence of an agreement as to cost, time, or both, the Professional will (i) receive and maintain all documentation pertaining thereto; (ii) examine such documentation on the Owner's behalf; (iii) take such other action as may be reasonably necessary or as the Owner may request; and (iv) make a written recommendation to the Owner concerning any appropriate adjustment in the Construction Price or time.

10.9 Necessity for Signature Approval

No act, omission, or course of dealing shall alter the requirement that change orders shall be in writing and signed by the Owner, and that change orders are the exclusive method for effecting any adjustment to compensation or applicable schedules. The Builder understands and agrees, on behalf of itself and its subcontractors and suppliers, that neither compensation nor applicable schedules can be changed by implication, oral agreement, or unwritten change order.

ARTICLE 11 – OWNER’S CONSULTANT(S) AND CONSTRUCTION ADMINISTRATION

11.1 Owner’s Designated Professional Representative

Unless otherwise directed by the Owner, the Professional shall act as the Owner’s agent for design-related issues, interpretation of the Construction Documents, and other matters described in these General Terms & Conditions.

11.1.1 The Professional will be the Owner's design representative during performance of the Work and will consult with and advise the Owner on all design and technical matters.

11.1.2 The Professional will act as initial interpreter of the requirements of the Contract for Construction and as the Owner’s advisor on claims.

11.2 Professional Site Visits

The Professional will visit the Site with sufficient frequency for familiarization with the progress and quality of the Work and to inspect the Work to determine compliance of the Work with (i) the Contract for Construction; (ii) approved shop drawings and other submittals; (iii) the Construction Schedule; and (iv) applicable laws, statutes, building codes, rules, or regulations of all governmental, public, and quasi-public authorities or Authorities Having Jurisdiction.

11.3 Professional Rejection of Work

The Professional may disapprove or reject Work which does not comply with (i) the Contract for Construction; (ii) approved shop drawings and other submittals; or (iii) applicable laws, statutes, building codes, rules, or regulations of any governmental, public, and quasi-public authorities and Authorities Having Jurisdiction.

11.4 Professional Evaluations

11.4.1 The Professional will review and evaluate the results of all inspections, tests, and written reports required by the Contract for Construction and by any governmental entity having or asserting jurisdiction over the Project. The Professional will take appropriate action, if necessary, arising from such evaluations, including acceptance, rejection, requiring additional testing or corrective work, or such other action deemed appropriate by the Professional. The Professional will promptly reject Work which does not conform to and comply with testing requirements.

11.4.2 The Professional may require inspection or testing of any Work in addition to that required by the Contract for Construction or governmental entities having or asserting jurisdiction over the Project when such additional inspections and testing is necessary or advisable, whether or not such Work is then fabricated, installed, or completed. The Professional will take appropriate action on all such special testing and inspection reports, including acceptance, rejection, requiring additional testing or corrective work, or such other action deemed appropriate by the Professional.

11.5 Professional Submittal Activities

The Professional will review and approve, reject, or take other appropriate action on submittals such as shop drawings, product data, samples, proposed equal materials or

equipment, and requested substitutions not more than fourteen (14) calendar days after receipt, and will not approve any submittals unless such submittals conform to the Construction Documents. The Professional's review of submittals shall not constitute final acceptance of materials or equipment furnished or installed if such materials or equipment prove to be defective or not as represented by approved submittals or as otherwise required by the Construction Documents. The Builder remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performance of the Work.

11.6 Professional Interpretations

The Professional will, when requested to do so in writing by the Builder, promptly and so as to cause no unnecessary delay, render written or graphic interpretations and decisions necessary for the proper execution of the Work. The Professional's interpretations and decisions relating to aesthetic or artistic effect shall be final if not inconsistent with the Contract for Construction.

11.7 Professional Pay Application Activities

The Professional will review applications for payment, including such accompanying data, information, and schedules as the Professional requires, to verify the amounts due to the Builder and shall authorize payment by the Owner to the Builder in writing. After the Work is determined to be Finally Complete by the Professional, the Professional will certify to the Owner in writing that the Builder is entitled to final payment and submit the pay application to the Owner for final approval.

11.8 Professional Relationship to Builder

The duties, obligations, and responsibilities of the Builder under the Contract for Construction shall not be changed, abridged, altered, discharged, released, or satisfied by any duty, obligation, or responsibility of any Professional. The Builder shall not be a third-party beneficiary of any agreement by and between the Owner and any Professional. The duties of the Builder to the Owner shall be independent of, and shall not be diminished by, any duties or obligations of any Professional to the Owner.

11.9 Commissioning Consultant

The Owner may also employ an independent Commissioning consultant to verify performance and/or quality of certain building systems or components. The Builder shall coordinate the Work and its schedule and activities with the Commissioning consultant and shall act upon the observations and recommendations of same, provided such action does not conflict with the Contract for Construction or specific direction by the Owner or the Professional.

The Builder shall perform functional performance testing of items being commissioned under the supervision of the Owner's Commissioning consultant.

ARTICLE 12 – SUBSTANTIAL AND FINAL COMPLETION

12.1 Substantial Completion

12.1.1 When the Builder believes that the Work is Substantially Complete, it shall notify the Owner and the Professional that the Work is ready for a Substantial Completion inspection. The Builder shall endeavor to give the Owner and the

Professional notice two (2) weeks prior to the predicted Substantial Completion inspection date(s).

- 12.1.2 Upon receipt of notification from the Builder, the Professional will coordinate with the Owner and the Builder date(s) for inspection(s) of the Work to determine whether the Work is Substantially Complete.
- 12.1.3 Prior to such inspections, the Builder shall develop a comprehensive list of known discrepancies, deficiencies, or incomplete Work (i.e., the “punchlist”).
- 12.1.4 At inspection(s) to determine whether the Work is Substantially Complete, the Professional, the Commissioning consultant(s), the Owner, and other governing or concerned entities will:
 - (i) inspect the Work;
 - (ii) create or append punchlists;
 - (iii) review the overall status of the Work and any outstanding or deficient issues; and
 - (iv) determine whether Substantial Completion of the Work has occurred.
- 12.1.5 If the Work is determined not to be Substantially Complete, the Work shall be prosecuted until the Work is Substantially Complete and the inspection process shall be repeated at no additional cost to the Owner until the Work is determined to be Substantially Complete. Builder will be responsible for costs of the Owner’s consultants associated with premature or failed inspections.
- 12.1.6 On or prior to the required date of Substantial Completion, the Builder shall deliver to Owner reports, extra materials, and other necessary documents and items for the Owner’s occupancy and use of the Work for its intended purpose. These documents and items are enumerated on the Owner’s website (www.facilities.ufl.edu). The Professional will review such documentation and items, and will inform the Owner and the Builder of any deficiencies.
- 12.1.7 When the Owner, the Builder, and the Professional agree that the Work has passed Substantial Completion inspection(s) and the Builder has produced the required Substantial Completion documentation and items, they shall each sign the Owner’s standard Certificate of Substantial Completion form, declaring the Work Substantially Complete and establishing the actual date of Substantial Completion. The Certificate of Substantial Completion shall also be accompanied by a final, consolidated punchlist.
- 12.1.8 If the Work is commissioned through the services of a Commissioning consultant, such Commissioning – including functional performance tests – shall be completed as a pre-requisite to the Work being declared Substantially Complete, provided Builder shall not be responsible for delays in Commissioning not the fault of Builder.

- 12.1.9 The Builder shall provide the Owner with operation and maintenance documents not less than forty-five (45) calendar days prior to the required date of Substantial Completion to allow adequate time for review, correction, and training of the Owner's personnel prior to Commissioning and the Owner's occupancy of the Project.
- 12.1.10 The Builder shall meet with the Owner's personnel prior to the required date of Substantial Completion to familiarize and train them with respect to maintenance and use of the Project. All training sessions shall be recorded (audio and visual), with copies provided to the Owner.
- 12.1.11 The date of Substantial Completion shall fix the commencement date of warranties and guaranties and allocate between the Owner and the Builder responsibility for security, utilities, damage to the Work, and insurance.

12.2 Final Completion

- 12.2.1 When the Builder believes the Work has achieved Final Completion (including correction of all punchlist items), the Builder shall notify the Owner and the Professional that the Work is ready for Final Completion inspection.
- 12.2.2 Upon receipt of such notification from the Builder, the Professional will coordinate with the Owner and the Builder a date for inspection of the Work to determine whether the Work has achieved Final Completion.
- 12.2.3 At the Final Completion inspection, the Owner and the Professional will:
- (i) inspect the Work;
 - (ii) determine whether all punchlist items have been satisfactorily completed and corrected;
 - (iii) determine whether the Work complies with (a) the Contract for Construction; (b) applicable laws, statutes, building codes, rules, or regulations of all governmental, public, and quasi-public authorities or Authorities Having Jurisdiction; and (c) applicable installation and workmanship standards;
 - (iv) determine whether required inspections and approvals by the official(s) having or asserting jurisdiction over the Project (including, but not limited to, the AHJ) have been satisfactorily completed; and
 - (v) confirm receipt of the deliverables listed below.
- 12.2.4 If Final Completion has not been achieved, the Builder shall continue to prosecute the Work, and the inspection process shall be repeated at no additional cost to the Owner, until Final Completion is achieved.
- 12.2.5 On or prior to the date of Final Completion, the Builder shall deliver to the Owner the following documentation and items:

- (i) Certificate of Final Completion – executed on Owner’s standard form;
- (ii) all operation and maintenance manuals not previously produced;
- (iii) one (1) set of as-built plans and specifications;
- (iv) record copies of BIM files as required by the project-specific BIM Execution Plan, if applicable;
- (v) certification and affidavit that all insurance required of the Builder beyond final payment, if any, is in effect and will not be canceled or allowed to expire without notice to the Owner;
- (vi) written consent of the surety(ies), if any, to final payment;
- (vii) full, final, and unconditional waivers of mechanics or construction liens, from each contractor, subcontractor, supplier, or other person or entity who has or might have a claim;
- (viii) full, final, and unconditional certification and affidavit that all of the Builder’s obligations to contractors, subcontractors, suppliers, and other third parties for payment for labor, materials or equipment related to the Project have been paid or otherwise satisfied;
- (ix) all written warranties and guarantees relating to the labor, goods, products, materials, equipment, and systems incorporated into the Work, endorsed, countersigned, and assigned as necessary;
- (x) affidavits, releases, bonds, waivers, permits, and other documents necessary for final close-out of Work;
- (xi) a list of any item(s) due but unable to be delivered and the reason for non-delivery; and
- (xii) any other documents reasonably and customarily required or expressly required herein for full and final close-out of the Work, including those items enumerated on the Owner’s website (www.facilities.ufl.edu).

12.2.6 The Professional will review and determine the sufficiency of all such documentation and items and will immediately inform Owner and the Builder of any deficiencies and omissions.

ARTICLE 13 – BUILDER’S WARRANTIES AND GUARANTEES

13.1 One-Year Warranty

In addition to the warranties and guarantees set forth elsewhere in the Contract for Construction, the Builder, upon request by the Owner or the Professional, shall promptly correct all failures or defects in the Work for a period of one year after the actual date of Substantial Completion, or the date of acceptance by the Owner, whichever is later.

13.1.1 The Builder shall schedule, coordinate, and participate in a walk-through inspection of the Work one month prior to the expiration of the one-year correction period, and shall notify the Owner, the Professional, and any necessary subcontractors and suppliers of the date of, and request their participation in, the walk-through inspection. The purpose of the walk-through inspection is to determine if there are defects or failures requiring correction.

13.1.2 Should the Builder fail to promptly correct any failure or defect, the Owner may take whatever actions it deems necessary to remedy the failure or defect and the Builder shall promptly reimburse the Owner for any expenses or damages it incurs as a result of the Builder's failure to correct the failure or defect.

13.2 Post-Completion Commissioning Activities

The Builder and its subcontractors shall participate in Commissioning activities following Substantial Completion as prescribed in the Construction Documents, the purpose of which is to confirm and optimize performance of the commissioned systems. Such participation may include the need for the Builder to perform corrective work if deficiencies in the Work are revealed.

13.3 Express Warranties and Guarantees – Builder

In addition to the warranties and guarantees set forth elsewhere herein, the Builder expressly warrants and guarantees to the Owner:

- (i) that the Work will comply with the Construction Documents and all applicable laws, statutes, building codes, rules, and regulations of all governmental, public, and quasi-public authorities or Authorities Having Jurisdiction;
- (ii) that all goods, products, materials, equipment, and systems incorporated into the Work will conform to applicable specifications, descriptions, instructions, drawings, data, and samples;
- (iii) that all goods, products, materials, equipment, and systems incorporated into the Work will be new (unless otherwise specified or permitted) and without apparent damage or defect; of quality equal to or higher than that required by the Construction Documents; and merchantable; and
- (iii) that all management, supervision, labor, and services required for the Work will comply with the Contract for Construction and will be performed in a workmanlike manner.

13.4 Express Warranties and Guarantees – Subcontractors and Suppliers

The Builder shall require that all of its subcontractors and suppliers provide written warranties, guarantees, and other undertakings to the Owner and the Builder in a form identical to the warranties, guarantees, and other undertakings set forth in the Contract for Construction, including the warranties, guarantees, and undertakings set forth in this Article, which warranties, guarantees, and undertakings shall run to the benefit of the Owner as well as the Builder.

13.5 Non-Exclusivity and Survival

The warranties and guarantees set forth in this Article shall be in addition to all other warranties – express, implied, or statutory – and shall survive the Owner's payment,

acceptance, inspection of or failure to inspect the Work, and review of the Construction Documents.

13.6 Non-Limitation

Nothing contained in Paragraph 13.1 shall be construed to establish a period of limitation with respect to the Builder's obligations under the Contract for Construction. Paragraph 13.1 relates only to the Builder's specific obligations with respect to the Work, and has no relationship to the time within which the Builder's contractual obligations under the Contract for Construction may be enforced, nor to the time within which proceedings may be commenced to establish the Builder's liability with respect to any contractual obligations pursuant to Paragraph 13.1 or contained elsewhere herein.

13.7 Commencement of Obligations

Unless otherwise specified, all of the Builder's warranty and guaranty obligations, including the time period(s) for all written warranties and guarantees of specifically designated equipment required by the Construction Documents, shall begin on the actual date of Substantial Completion or the date of acceptance by the Owner, whichever is later.

ARTICLE 14 – OWNER'S DUTIES, OBLIGATIONS, AND RESPONSIBILITIES

14.1 Timely Compensation of Builder

The Owner shall, in a timely manner, compensate the Builder in accordance with the Contract for Construction.

14.2 Owner Review of Documents

The Owner shall review documents prepared by the Builder in a timely manner and in accordance with schedule requirements. Review by the Owner shall be solely for the purpose of determining whether such documents are generally consistent with the Owner's intent. No review of such documents shall relieve the Builder of any of its responsibilities. In addition, the Owner's review of documents for purposes of issuing a building permit shall not relieve the Builder of any of its responsibilities.

14.3 Status of Owner

The Owner shall not have control of, or responsibility for, construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Work, nor shall the Builder, for any of the foregoing purposes, be deemed the agent of the Owner.

ARTICLE 15 – BUILDER'S COMPENSATION

15.1 Schedule of Values

15.1.1 Prior to submitting its first application for payment for the Work, the Builder shall prepare and present to the Owner and Professional for approval a schedule of values (SOV) using the Owner's form.

15.1.2 For construction management projects, this SOV shall be based on the draft schedule of values submitted with the GMP proposal, adjusted to account for the final subcontract award amounts.

15.1.3 Allowances for un-awarded trade subcontracts may be included in the SOV.

15.1.4 The Builder shall not imbalance or artificially inflate any element in the SOV.

15.1.5 Upon the Owner's acceptance, the SOV shall be used to process and pay the Builder's payment requests.

15.1.6 The Builder shall comply with the Trench Safety Act (Chapter 553, Part VI, Florida Statutes), which requires that builders delineate in their Schedules of Values the cost of compliance with applicable trench safety standards.

15.2 Unit Prices

If any portion of the Construction Price is determined by the application of unit prices, the number of units contained in the Schedule of Values is an estimate only, and compensation to the Builder shall be determined by the actual number of units incorporated in, or required by, the Work.

15.3 Invoicing Procedures

In accordance with the procedures and requirements set forth in the Owner's policies, the Builder shall invoice the Owner and the Owner shall pay the Builder the amount due subject to the following and the Contract for Construction.

15.3.1 The Builder shall submit invoices to the Professional requesting payment for labor and services rendered during the preceding thirty calendar days. Each invoice shall contain such detail and be backed up with whatever supporting information the Owner or the Professional requests and shall at a minimum state:

- (i) the total original Construction Price and total current Construction Price;
- (ii) the amount due for properly provided labor, materials, and equipment properly incorporated into the Project; and with respect to amounts invoiced for materials or equipment necessary for the Project and properly stored at the Site (or elsewhere if offsite storage is approved in writing by the Owner), be accompanied by written proof that the Owner has title to such materials or equipment and that such material and equipment is fully insured against loss or damage;
- (iii) a breakdown of the various phases, bid packages, or parts of the Work as related to the Construction Price in accordance with standard Construction Specifications Institute (CSI) format;
- (iv) the value of the various phases, bid packages, or parts of the Work actually performed;
- (v) previously invoiced amounts and credit payments made;
- (vi) the total amount due, less any agreed retainage; and
- (vii) a summary of change orders to date.

Applications for payment shall also include such lien waivers and other documentation verifying the Builder's payment to subcontractors and suppliers as the Owner or Professional may request.

15.3.2 Goods and materials procured through the Owner Direct Purchase process shall be invoiced separately in accordance with Owner's policies.

15.4 Payment Procedures

15.4.1 Within seven (7) days of receipt, the Professional will review the Builder's applications for payment, including such accompanying data, information, and schedules as the Professional requires, to determine the amounts due to the Builder and, based upon such review, together with its inspections of the Work, shall authorize payment by the Owner to the Builder in writing. Such authorization will constitute the Professional's certification to the Owner that:

- (i) the Work described in the Builder's invoice has progressed to the level indicated and has been performed in accordance with the Contract for Construction;
- (ii) all necessary and appropriate lien waivers have been submitted;
- (iii) the "as-built" record documents are current and up-to-date; and
- (iii) the amount requested is currently due and owing to the Builder.

15.4.2 In the case of unit price work, the Professional's recommendations for payment will constitute a final determination of quantities and classifications of such work.

15.5 Owner's Right to Refuse Payment

The Professional's approval of the Builder's invoice shall not preclude the Owner from exercising any of its remedies under the Contract for Construction. In the event of a dispute, payment shall be made within the timeframe(s) prescribed herein for amounts not in dispute, subject to any exceptions claimed by the Owner. The Owner shall have the right to refuse to make payment and, if necessary, may demand the return of all or a portion of the amount previously paid to the Builder due to:

- (i) the Builder's failure to perform the Work in compliance with the requirements of the Contract for Construction or any other agreement between the parties;
- (ii) the Builder's failure to correctly and accurately represent the Work performed in a payment request, or otherwise;
- (iii) the Builder's performance of the Work at a rate or in a manner that, in the Owner's opinion, is likely to result in the Project or any portion of the Project being inexcusably delayed;
- (iv) the Builder's failure to use funds previously paid the Builder by the Owner to pay the Builder's Project-related obligations including, but not limited to, the Builder's subcontractors, materialmen, and suppliers;

- (v) claims made, or likely to be made, against the Owner;
- (vi) loss caused by the Builder or the Builder's subcontractors or suppliers; or
- (vii) the Builder's failure or refusal to perform any of its obligations to the Owner.

15.6 Builder's Right to Refuse Performance for Non-Payment

If – within twenty (20) calendar days of Owner's receipt of the Builder's application for payment properly prepared in accordance with Owner's policies and approved and executed by the Professional – the Owner, without cause or basis hereunder, fails to pay the Builder any amounts then due and payable to the Builder, the Builder shall have the right, in addition to all other rights and remedies contained herein, to cease performance of the Work until receipt of proper payment after first providing fourteen (14) calendar days written notice to the Owner of its intent to cease work.

15.7 Correction of Past Payments

All prior payments, whether based on estimates or otherwise, may be corrected and adjusted in any subsequent payment and shall be corrected and adjusted in the final payment. In the event that any invoice contains a defect or impropriety which would prevent payment by the date due, the Owner shall notify the Builder in writing of such defect or impropriety. Any disputed amounts determined by the Owner to be payable to the Builder shall be due thirty (30) calendar days from the date the dispute is resolved.

15.8 Invoice Warranties and Guarantees

The Builder expressly warrants and guarantees to the Owner that:

- (i) title to all goods, products, materials, equipment, and systems covered by an invoice will pass to the Owner either by incorporation into the Work, or upon receipt of payment by the Builder, whichever occurs first;
- (ii) all goods, products, materials, equipment, and systems covered by an invoice are free and clear of liens, claims, security interests, or encumbrances; and
- (iii) no goods, products, materials, equipment, or systems covered by an invoice have been acquired by the Builder or its subcontractors or suppliers, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Builder or its subcontractors or suppliers.

15.9 Builder's Signature

The signature of the Builder on any invoice constitutes the Builder's certification to the Owner that (i) the Builder's services listed in the invoice have progressed to the level indicated and have been performed as required by the Contract for Construction; (ii) the Builder has paid its subcontractors and suppliers their proportional share of all previous payments received from the Owner; (iii) the amount requested is currently due and owing; and (iv) all subcontractors performing the Work for which payment is made hold all necessary State of Florida licenses.

15.10 Taxes and Owner Direct Purchase Program

15.10.1 The Builder shall incorporate into the Construction Price, and pay, all sales, consumer, use, and similar taxes for goods, products, materials, equipment, and

systems incorporated into the Work that were legally required at the time of execution of the Contract for Construction, whether or not yet effective or merely scheduled to go into effect.

15.10.2 For construction management projects, the Owner may elect to implement a direct purchase program, whereby eligible materials or equipment included in a subcontractor's bid are purchased by the Owner directly from the supplier in order to achieve sales tax savings.

15.10.3 Such direct purchases shall not relieve the Builder and/or its subcontractors of their responsibility to ensure the materials and equipment meet the specifications and requirements of the Contract for Construction.

15.10.4 When Builder's Risk insurance is furnished by the Builder (see Article 19), such insurance shall name the Owner as the insured or an additional insured and shall include coverage of such materials in transit or stored offsite. Builder shall in any case be responsible for safeguarding such materials on the project Site on the Owner's behalf.

15.10.5 The Owner's written policy on direct purchases shall govern. See www.facilities.ufl.edu.

15.11 Compensation of Builder's Subcontractors and Suppliers

15.11.1 Not less than forty-five (45) days after satisfactory completion of their portion of the Work, subcontractors may invoice Builder for remaining unpaid Work, including the full value of the retainage related to such Work less the value of any contested item(s), and provided each such subcontractor has provided Builder with all required close-out documentation. Builder shall include subcontractor pay requests in the Builder's application for payment. No later than ten days (10) after receipt of payment from the Owner, the Builder shall pay each of its subcontractors and suppliers out of the amount received by the Builder on account of such subcontractor's or supplier's portion of the Work, the amount to which each entity is entitled, reflecting percentages actually retained from payments to the Builder on account of such entity's portion of the Work, if any.

15.11.2 The Owner shall have no obligation to pay, and shall not be responsible for payments to, the Builder's subcontractors or suppliers. However, the Owner reserves the right, but has no duty, to make payment jointly to the Builder and to any of its subcontractors or suppliers in the event that the Owner becomes aware that the Builder fails to pay or unreasonably withholds payment from one or more of those entities. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

15.12 Retainage

Subject to other provisions herein, and pursuant to Section 255.078, Florida Statutes, Owner will withhold and release retainage from each payment to Builder in accordance with the following:

- 15.12.1 Owner will withhold as retainage from each progress payment made to the Builder an amount equal to ten percent (10%) of the payment until the Work is fifty percent (50%) complete.
- 15.12.2 After the Work is fifty percent (50%) complete, Owner shall reduce the amount of retainage withheld from each subsequent progress payment made to the Builder to five percent (5%) of the amount of the payment.
- 15.12.3 After the Work is fifty percent (50%) complete, the Builder may present to the Owner a payment request for up to one-half of the retainage held by Owner, and Owner shall make payment to the Builder unless the Owner has grounds for withholding the payment of retainage (e.g., all or a portion of the retainage is the subject of a good faith dispute or a claim brought by Owner).
- 15.12.4 After the Work is fifty percent (50%) complete, the Builder may elect to withhold retainage from payments to its subcontractors at a rate higher than five percent (5%). The specific amount to be withheld must be determined on a case-by-case basis and must be based on the Builder's assessment of the subcontractor's past performance, the likelihood that such performance will continue, and the Builder's ability to rely on other safeguards. The Builder shall notify the subcontractor, in writing, of its determination to withhold more than five percent (5%) of the progress payment and the reasons for making that determination, and the Builder may not request the release of such retained funds from the Owner.

15.13 Final Payment

Prior to being entitled to receive final payment, and as a condition precedent thereto, the Builder must achieve Final Completion. The Owner shall, subject to its rights set forth above in this Article, make final payment of all sums due the Builder within twenty (20) calendar days of Owner's receipt of the Builder's application properly prepared in accordance with Owner's policies and approved and executed by the Professional.

ARTICLE 16 – SCHEDULE REQUIREMENTS

16.1 Construction Schedule

The Construction Schedule shall include all pertinent dates and periods for timely completion of the Work.

- 16.1.1 Unless otherwise directed and approved by the Owner, the Builder shall – within fourteen (14) calendar days of the "Notice To Proceed" – prepare a critical path method schedule with separate divisions for each major portion of the Work or operations. The Construction Schedule shall include and properly coordinate dates for performance of all divisions of the Work, including completion of offsite requirements and tasks, so that the Work can be completed in a timely and orderly fashion consistent with the required dates of Substantial Completion and Final Completion. When preparing the schedule, Builder shall consider and account for Owner's operational needs on the Site and adjacent thereto, particularly with regard to utility interruptions and access restrictions.
- 16.1.2 The Construction Schedule shall depict all activities necessary for, or incidental to, performance of the Work, showing the logic (sequence, dependency), duration,

and “float” of each activity, with the critical path highlighted and shall include (i) the required dates of commencement, Substantial Completion, and Final Completion; (ii) any guideline and milestone dates required by the Owner; (iii) any applicable subcontractor and supplier sub-schedules; (iv) coordination with the submittal schedule which allows sufficient time for review of documents and submittals; (v) allowances for procurement, fabrication, and delivery of materials, especially “long lead” items; (vi) the complete sequence of construction by activity, with dates for beginning and completion of each element of construction; (vii) the time required for testing, inspections, and Commissioning, if applicable; (viii) time for schedule constraints, such as holidays and events on Owner’s property and adverse weather conditions which are normal and may be reasonably anticipated; and (ix) required decision dates.

16.1.3 By reviewing the Construction Schedule, the Owner and Professional do not assume any of the Builder’s responsibility (i) that the Construction Schedule be coordinated or complete; or (ii) for timely and orderly completion by the required dates of Substantial Completion, Final Completion, or any milestone dates required by the Owner.

16.1.4 The Builder shall periodically and in all instances when the Builder anticipates that performance of the Work will be delayed or in fact has been delayed, but not less frequently than monthly, prepare a revised Construction Schedule and show actual progress of the Work through the revision date, projected completion of each remaining activity, activities modified since previous submittal, major changes in scope, and other identifiable changes. The updated Construction Schedule shall be accompanied by a narrative report which (i) states and explains any modifications of the critical path schedule, including any changes in logic; (ii) defines problem areas and lists areas of anticipated delays; (iii) explains the anticipated impact the problems and delays will have on the schedule and scheduled activities; (iv) reports corrective action taken or proposed; and (v) states how problems anticipated by projections shown on the schedule will be resolved to avoid delay in delivering the Work by the required dates of Substantial Completion and Final Completion, and other milestone dates required by the Owner, if any.

16.2 Delay in Performance

If at any time the Builder anticipates that performance of the Work will be delayed or in fact has been delayed, the Builder shall (i) immediately notify the Owner and Professional of the probable cause of and effect from the delay, and possible alternatives to minimize the delay; and (ii) take all corrective actions reasonably necessary to deliver the Work by the required dates of Substantial Completion and Final Completion, and other milestone dates required by the Owner, if any.

16.3 Early Completion

The Builder may attempt to achieve Substantial Completion before the required date of Substantial Completion. However, such planned early completion shall be for the Builder’s sole convenience and shall not create any additional Builder rights or Owner obligations under the Contract for Construction, nor shall it change the required dates of Substantial Completion or Final Completion. The Owner shall not pay the Builder any additional compensation for achievement of Substantial Completion or Final Completion prior to the required dates nor will the Owner owe the Builder any compensation should the Owner

cause the Builder not to achieve Substantial Completion earlier than the required date of Substantial Completion or Final Completion earlier than the required date of Final Completion.

16.4 Document Review

The Builder shall provide documents to the Owner and Professional(s) for review in accordance with schedule requirements and with sufficient lead time to allow the Owner and Professional reasonable time for review.

ARTICLE 17 – TIME OF PERFORMANCE

17.1 Time of the Essence

The parties hereto mutually understand and agree that time is of the essence in the performance of the Contract for Construction and that the Owner will incur damages if the Work is not completed on time. The Builder shall at all times carry out its duties and responsibilities as expeditiously as possible and shall begin, perform, and complete its services so that (i) the Work progresses in accordance with the Construction Schedule; (ii) the Work is Substantially Completed by the required date of Substantial Completion; and (iii) the Work is Finally Complete by the date of Final Completion.

17.2 Modifications of Time for Performance

The Builder may submit delay claims or otherwise propose modifications to the dates for Substantial Completion, Final Completion, or other milestones required by the Owner, if any. However, such claims shall be submitted in writing and supported by evidence that the delay was excusable, critical, and, if applicable, compensable. The Builder shall determine and promptly notify the Owner and the Professional in writing when it believes such adjustments are necessary, but no such adjustments shall be effective unless approved in writing by the Owner and Professional.

17.2.1 Extensions of time will be granted only to the extent that equitable time adjustments for the impacted activity or activities exceed the total float along the network paths involved. Such claims shall include an estimate of cost, if any, and substantiate the projected impact on the overall critical path schedule of the Project. In the case of a continuing delay, only one claim is necessary.

17.2.2 Modification(s) of the required dates of Substantial Completion or Final Completion shall be accomplished only by duly authorized and accepted change order stating the new date(s) with specificity and reciting that all references in the Contract for Construction to the required dates of Substantial Completion or Final Completion shall thereafter refer to the date(s) as modified, and all rights and obligations, including the Builder's liability for actual damages, delay damages and liquidated damages, shall be determined in relation to the date(s) as modified.

17.2.3 If adverse weather conditions are the basis for a delay claim, the claim shall be documented by data substantiating that: the weather conditions were abnormal for the given location and period of time; the weather conditions could not have been reasonably anticipated; and that the weather conditions had an adverse effect on the overall critical path of the schedule. Delays caused by adverse weather conditions are not compensable.

17.3 Compensable Delay

If the Builder is delayed at any time in the progress or performance of the Work by (i) acts or omissions of the Owner or Professional; (ii) major changes ordered by the Owner in the scope of Work; or (iii) any other cause which the Owner determines may justify the compensation of the Builder for the delay, the Builder's compensation shall be equitably adjusted to cover the Builder's actual and direct increased costs attributable to such delay.

17.4 Excusable Delay

If the Builder is delayed at any time in the progress or performance of the Work by (i) acts or omissions of the Owner or Professional; (ii) major changes ordered by the Owner in the scope of Work; (iii) fire; (iv) unusual delays in transportation; (v) adverse abnormal weather conditions that Builder could not have reasonably anticipated; (vi) unavoidable casualties; (vii) causes beyond the Builder's control which the Owner agrees in writing are justifiable; or (viii) any other cause that the Owner determines may justify the delay, Owner may extend the time for performance to allow for a demonstrated increase in overall construction duration, which may or may not be equal to the length of such delay, but only if (a) such delay is not concurrent with other, inexcusable delay(s); (b) such delay impacts the critical path; (c) such delay is not in any way caused by default or collusion on the part of the Builder or by any cause which the Builder could reasonably control or circumvent; (d) the Builder would have otherwise been able to timely perform all of its obligations under the Contract for Construction but for such delay; and (e) immediately but not later than fourteen (14) calendar days after the beginning of any such delay the Builder gives notice of its delay claim to the Owner. Such delay claims shall be submitted as a change order proposal. All such claims will be reviewed by the Professional within seven (7) days of submission. Delay caused by labor disputes, picketing, employee boycotts, or the like which directly or indirectly involves employees of the Builder or its subcontractors and suppliers is not the responsibility of the Owner and will result in time extensions only if agreed to in writing by the Owner at the time such events arise.

17.5 Critical Delay

Additional work, unforeseen conditions, and other factors may result in one or more schedule activities being delayed. If, however, the critical path is not impacted and the overall construction duration and completion date(s) remain the same, the delay is not critical.

ARTICLE 18 – PROPRIETARY DOCUMENTS AND CONFIDENTIALITY

18.1 Nature and Use of Information

All information, documents, and electronic media furnished by the Owner to the Builder (i) belong to the Owner; (ii) are proprietary and confidential; (iii) are furnished solely for use on the Owner's Project; (iv), shall be kept confidential by the Builder; and (v) shall not be used by the Builder on any other project or in connection with any other person or entity, unless disclosure or use thereof in connection with any matter other than services rendered to the Owner hereunder is specifically authorized in writing by the Owner in advance or is required by law. The Owner hereby grants to the Builder a limited license to use and reproduce applicable portions of the Construction Documents necessary for execution of the Work. All copies made under this license shall bear the statutory copyright notice, if any, shown on the documents.

18.2 Ownership of Information

All information, documents, and electronic media prepared by or on behalf of the Builder for the Project are the sole property of the Owner, free of any retention rights of the Builder. The Builder hereby grants to the Owner an unconditional right to use, for any purpose whatsoever, any information, documents or electronic media prepared by or on behalf of the Builder for the Project, free of any copyright claims, trade secrets, or other proprietary rights with respect to such documents.

18.3 Disclosure of Information

The Builder shall not disclose any information it receives from the Owner to any other person or entity except to the extent necessary to allow it to perform its duties under the Contract for Construction or as required by law.

18.4 Instructions to Employees

Because it is difficult to separate proprietary and confidential information from that which is not, the Builder shall instruct its employees and agents to regard all information not in the public domain as information that is proprietary and confidential.

18.5 Non-Publication

Submission or distribution of documents to meet official regulatory requirements or for other required purposes in connection with the Project is not to be construed as publication in derogation of the Owner's common law copyrights or other reserved rights.

ARTICLE 19 – INSURANCE REQUIREMENTS

19.1 Basic Insurance Requirements

The Builder shall obtain and maintain the policies of insurance set forth in this Article with a company or companies lawfully authorized to do business in Florida, and with an A.M. Best Rating of no less than A, XV. All insurance policies shall be issued and countersigned by duly authorized representatives of such companies and shall be written on ISO standard forms or their equivalents. The insurance policies shall require that the insurer shall provide at least thirty (30) days written notice to Owner if a policy is to be canceled or the coverage thereunder reduced before the expiration date thereof and Builder shall provide Owner with a copy of an endorsement to the policy evidencing the same. The insurance required hereunder shall be carried by Builder at least until the Project has achieved Final Completion and has been accepted by Owner. At the Owner's sole discretion, the Owner may require the Builder and/or its subcontractors to carry additional types and amounts of insurance it deems appropriate given the nature and size of a particular Project. In such case, Owner shall notify Builder within a reasonable period of time prior to the commencement of the Work of such additional requirements.

19.1.1 Liability Insurance

19.1.1.1 Commercial General Liability Insurance.

The Builder shall obtain and maintain a commercial general liability insurance policy with limits of not less than the following:

- \$1,000,000 each occurrence and \$2,000,000 project aggregate for bodily injury, property damage, personal and advertising injury liability
- \$1,000,000 each occurrence and \$2,000,000 project aggregate for products and completed operations liability
- \$50,000 fire legal liability

Builder's commercial general liability policy must include coverage for contractual liability, independent contractors, and contain no exclusions for explosion, collapse, or underground damage. The University of Florida Board of Trustees and its officials, employees, and volunteers shall be covered as an additional insured with a form *CG-20-26-04-13 Additional Insured – Designated Person or Organization* or equivalent endorsement. The Builder's insurance coverage shall be primary insurance with respect to the Owner, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the Owner, its officials, employees, or volunteers shall be in excess of Builder's insurance and shall be non-contributory. Builder's insurance policy shall protect Builder from claims which may arise whether such claims may arise out of the operations of the Builder or by anyone directly or indirectly employed by the Builder. If Builder is performing asbestos-related work, the policy shall also contain a pollution liability endorsement with limits of not less than \$1,000,000 per occurrence.

19.1.1.2 Automobile Liability Insurance.

Builder shall obtain and maintain automobile liability coverage, including coverage for all Owned vehicles, hired, and non-owned vehicles, for bodily injury and property damage with not less than a \$500,000 combined single limit for each accident. The University of Florida Board of Trustees shall be covered as an additional insured with a form *CA-20-48* or similar endorsement on such policy.

19.1.1.3 Deductibles.

Deductibles under these liability policies shall not exceed \$25,000. Owner shall not be liable for amounts that may represent a deductible in any insurance policy. The payment of such deductible shall be the sole responsibility of the Builder and/or subcontractor providing such insurance.

19.1.2 Worker's Compensation

Builder shall obtain and maintain worker's compensation coverage applicable to all Builder's employees at statutory limits in compliance with applicable state and federal laws. If any operations are to be undertaken on or about navigable waters, coverage must be included in accordance with the US Longshoremen & Harbor Workers Act.

Such coverage shall include employer's liability limits of not less than \$100,000 each accident, \$500,000 disease policy limit, and \$100,000 disease each employee.

The Builder and its insurance carrier waive all subrogation rights against the Owner for all losses, damages, and/or events that occur while the Contract for Construction is in effect, regardless of whether suit is actually brought during such period or at a later date. The Owner requires all worker's compensation policies to be endorsed with form *WC00-03-13 Waiver of Right to Recover from Others* or equivalent.

19.1.3 Builder's Risk Insurance

The Builder shall obtain and maintain builder's risk insurance, at replacement cost, covering the full value of the construction being performed, including where applicable, the existing structure. Such policy shall be written on an all-risk

coverage form including flood and windstorm coverage, and shall include coverage for reasonable compensation for the Professional's services and expenses required as a result of such insured loss. This insurance shall insure the interests of the Builder, subcontractors, and sub-subcontractors in the Work. Property covered by the insurance shall include temporary building(s) or structure(s) at the Project Site, other than any of Builder's office trailer(s). In addition, such insurance shall cover portions of the Work stored offsite (if Owner approves such storage) and materials and equipment in transit. The University of Florida Board of Trustees shall be named as an additional insured on such policy. The policy shall include a waiver of subrogation endorsement and a severability of interests endorsement, and shall also include a waiver of occupancy clause allowing the Owner to occupy the subject facility during construction, if necessary.

The deductible under the policy shall not exceed \$25,000. Owner shall not be liable for amounts that may represent a deductible in any insurance policy. The payment of such deductible shall be the sole responsibility of the Builder.

When the Work includes the repair, removal, installation, and/or testing of live steam boilers, valves, pipes, or lines, or mechanized, pressurized, or electrical equipment, then such insurance shall include boiler and machine/equipment breakdown coverage, written on an ISO form or its equivalent.

A loss or losses insured under this insurance policy shall be adjusted by the Builder and its insurance company. The Builder shall repair or replace the damaged property with the proceeds from the builder's risk policy. The Builder shall be responsible for all damages and necessary repairs whether or not the loss is covered by the builder's risk policy.

Alternatively, the Owner may elect to obtain and directly pay for Builder's Risk insurance through Owner's statewide program.

19.2 Certificates of Insurance

19.2.1 Certificates of insurance and/or evidence of insurance for all insurance policies required under this Article, together with certified copies of the insurance policies (including required endorsements), shall be filed with and approved by the Owner prior to commencement of the Work.

19.2.2 Such certificates of insurance shall be dated and show the name of the insurer, the number of the policy, its effective date, and its termination date.

19.2.3 Certificates of insurance evidencing the renewal of all insurance required to be carried under this Article shall be provided to Owner at least thirty (30) days prior to the date each applicable insurance policy is scheduled to expire.

19.2.4 Certificates must provide for thirty (30) days' prior written notice to Owner of any policy cancellation or material change in coverage.

19.2.5 Owner's review, inspection, or approval of Builder's insurance shall not relieve Builder of its responsibility for providing the insurance required hereby nor constitute a waiver of any such requirements.

19.2.6 Owner will not issue a "Notice To Proceed" for the Work until Builder has complied with this Article and Builder shall not be entitled to an extension of time or to compensation which may result from delays in the issuance of a "Notice to Proceed" caused by its failure to provide the foregoing certificates and policies in a timely manner.

19.3 Effect of Insurance

Compliance with insurance requirements shall not relieve the Builder of any responsibility to indemnify the Owner for any liability to the Owner as specified in any other provision of the Contract for Construction, and the Owner shall be entitled to pursue any remedy in law or equity if the Builder fails to comply with the contractual provisions of the Contract for Construction. Indemnity obligations specified elsewhere in the Contract for Construction shall not be negated or reduced by virtue of any insurance carrier's (i) denial of insurance coverage for the occurrence or event which is the subject matter of the claim; or (ii) refusal to defend any named insured.

19.4 Waiver of Subrogation

The Builder's insurers shall agree to waive all rights of subrogation against the Owner and the Owner's Related Parties. The Builder hereby releases and discharges the Owner and the Owner's Related Parties of and from all liability to the Builder, and to anyone claiming by, through, or under the Builder, by subrogation or otherwise, on account of any damage or loss, whether to persons or property, however caused.

ARTICLE 20 – GENERAL BOND REQUIREMENTS

20.1 General Bond Requirements

Recognizing the Project is a public project with a Construction Price which exceeds \$200,000, and as such is required to be bonded pursuant to 255.05, Florida Statutes, the Builder shall furnish payment and performance bonds on Owner's standard form covering the full and faithful performance of the Contract for Construction and the payment of obligations arising hereunder. Such bonds shall, in all respects, comply with Section 255.05, Florida Statutes.

20.2 Delivery of Bonds

The Builder shall deliver required bonds and powers of attorney to the Owner prior to commencement of the Work.

20.3 Requests for Copies of Bonds

Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract for Construction, the Builder shall promptly furnish a copy of the bonds or shall permit a copy to be made.

ARTICLE 21 – OWNER'S RIGHT TO STOP WORK

21.1 Cease and Desist Order

If the Builder fails or refuses to perform or fails to correct defective Work as required, or persistently fails to carry out the Work in accordance with the Contract for Construction,

the Owner may, by written notice, order the Builder to cease and desist in performing the Work or any portion of the Work until the cause for the order has been eliminated to the satisfaction of the Owner. Upon receipt of such instruction, the Builder shall immediately cease and desist as instructed by the Owner and shall not proceed further until the cause for the Owner's order has been corrected, no longer exists, or the Owner instructs that the Work may resume.

21.1.1 The Builder shall not be entitled to an adjustment in the time for performance or the Construction Price under this clause since such stoppages are considered to be the fault of the Builder.

21.1.2 The right of the Owner to stop Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Builder or others.

21.1.3 In the event the Owner issues instructions to cease and desist, and in the further event that the Builder fails and refuses with seven calendar days to provide adequate assurance to the Owner that the cause of such instructions will be eliminated or corrected, then the Owner shall have the right, but not the obligation, to carry out the Work or any portion of the Work with its own forces, or with the forces of another builder, and the Builder shall be responsible for the cost of performing such Work by the Owner.

21.1.4 The rights set forth herein are in addition to, and without prejudice to, any other rights or remedies the Owner may have against the Builder.

ARTICLE 22 – TERMINATION OR SUSPENSION OF CONTRACT FOR CONSTRUCTION

22.1 Termination for Cause by Owner

22.1.1 The Owner may terminate the Contract for Construction for cause if the Builder materially breaches the Contract for Construction by:

- (i) refusing, failing, or being unable to properly manage or perform on any Project;
- (ii) refusing, failing, or being unable to supply the Project with sufficient numbers of workers, properly skilled workers, proper materials to maintain applicable schedules;
- (iii) refusing, failing, or being unable to make prompt payment to subcontractors or suppliers;
- (iv) disregarding laws, ordinances, rules, regulations, or orders of any public authority or quasi-public authorities or Authorities Having Jurisdiction;
- (v) refusing, failing, or being unable to substantially perform in accordance with the terms of the Contract for Construction as determined by the Owner, or as otherwise defined elsewhere herein; or

- (vi) refusing, failing, or being unable to substantially perform in accordance with the terms of any other agreement between the Owner and Builder.

22.1.2 Upon the occurrence of any of the events described in Paragraph 22.1.1, the Owner may give written notice to the Builder setting forth the nature of the default and requesting cure within seven calendar days from the date of notice. At any time after issuance of such notice, if the Builder fails to initiate the cure or if the Builder fails to expeditiously continue such cure until complete, the Owner may give written notice to the Builder of immediate termination, and the Owner, without prejudice to any other rights or remedies, may take any or all of the following actions:

- (i) complete all or any part of the Work, including supplying workers, material and equipment which the Owner deems expedient to complete the Work;
- (ii) contract with others to complete all or any part of the Work, including supplying workers, material, and equipment which the Owner deems expedient to complete the Work;
- (iii) take such other action as is necessary to correct such failure;
- (vi) take possession of all materials, tools, construction equipment, and machinery on the Site owned or leased by the Builder;
- (v) directly pay the Builder's subcontractors and suppliers compensation due to them from the Builder;
- (vi) finish the Work by whatever method the Owner may deem expedient; and
- (vii) require the Builder to assign the Builder's right, title and interest in any or all of Builder's subcontracts or orders to the Owner.

22.1.3 If the Owner terminates the Contract for Construction for cause, and the Owner takes possession of all materials, tools, construction equipment, and machinery on the Site owned or leased by the Builder, the Builder's compensation shall be increased by fair payment, either by purchase or rental at the election of the Owner, for any materials, tools, construction equipment, and machinery items retained, subject to the Owner's right to recover from the Builder the Owner's damages resulting from the termination.

22.1.4 If the Owner terminates the Contract for Construction for cause, and it is subsequently determined by a court of competent jurisdiction that such termination was without cause, then in such event, said termination shall be deemed a termination for convenience as set forth in Paragraph 22.3.

22.2 Termination for Cause by Builder

22.2.1 The Builder may terminate the Contract for Construction for cause if the Owner materially breaches the Contract for Construction by:

- (i) refusing, failing, or being unable to make prompt payment to the Builder without just cause;
- (iv) disregarding laws, ordinances, rules, regulations or orders of any public authority of quasi-public authority or Authorities Having Jurisdiction; or
- (v) refusing, failing, or being unable to substantially perform in accordance with the terms of the Contract for Construction.

22.2.2 Upon the occurrence of any of the events described in Paragraph 22.2.1, the Builder may give written notice to the Owner setting forth the nature of the default and requesting cure within seven calendar days from the date of notice. If the Owner fails to cure the default within seven calendar days, the Builder, without prejudice to any rights or remedies, may give written notice to the Owner of immediate termination.

22.3 Termination or Suspension for Convenience

The Owner may at any time give written notice to the Builder terminating the Contract for Construction or suspending the Project, in whole or in part, for the Owner's convenience and without cause. If the Owner suspends the Project for convenience, the Builder shall immediately reduce its staff, services and outstanding commitments in order to minimize the cost of suspension.

22.4 Builder's Compensation When Builder Terminates for Cause or Owner Terminates for Convenience

If the Contract for Construction is (i) terminated by the Builder pursuant to Paragraph 22.2; (ii) terminated by the Owner pursuant to Paragraph 22.3; or (iii) suspended more than three months by the Owner pursuant to Paragraph 22.3, the Owner shall pay the Builder specified amounts due for Work actually performed prior to the effective termination date and reasonable costs associated with termination. The Owner may agree to additional compensation, if any, due to the Builder. Absent agreement on the additional amount due the Builder, the Owner shall pay the Builder:

- (i) reasonable costs incurred in preparing to perform the terminated portion of the Work, and in terminating the Builder's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages); provided, however, that if it appears that the Builder would not have profited or would have sustained a loss if the Work had been completed, no profit shall be allowed or included, and the amount of compensation shall be reduced to reflect the anticipated rates of loss, if any; and
- (ii) reasonable costs of settling and paying claims arising out of the termination of subcontracts or supplier orders. These costs shall not include amounts paid in accordance with other provisions hereof.

22.5 Builder's Compensation When Owner Terminates for Cause

If the Contract for Construction is terminated by the Owner for cause pursuant to Paragraph 22.1, no further payment shall be made to the Builder until Final Completion of the Project. At such time, the Builder shall be paid the remainder of the Construction Price less all costs and damages incurred by the Owner as a result of the default of the Builder,

including liquidated damages applicable thereto. The Builder shall additionally reimburse the Owner for any additional costs or expenses incurred.

22.6 Limitation on Termination Compensation

Irrespective of the reason for termination or the party terminating, the total sum paid to the Builder shall not exceed the Construction Price, as properly adjusted, reduced by the amount of payments previously made and penalties or deductions incurred pursuant to any other provision of the Contract for Construction, and shall in no event include duplication of payment.

22.7 Builder's Responsibility upon Termination

Irrespective of the reason for termination or the party terminating, if the Contract for Construction is terminated, the Builder shall, unless notified otherwise by the Owner,

- (i) immediately stop work;
- (ii) terminate outstanding orders and subcontracts;
- (iii) settle the liabilities and claims arising out of the termination of subcontracts and orders; and
- (iv) transfer title and deliver to the Owner such completed or partially completed Work, and, if paid for by the Owner, materials, equipment, parts, fixtures, information and such contract rights as the Builder has.

22.8 Lack of Duty to Terminate

The right to terminate or suspend the Work shall not give rise to a duty on the part of either the Owner or the Builder to exercise that right for the benefit of the Owner, the Builder or any other persons or entities.

22.9 Limitation on Termination Claim

If the Builder fails to file a claim within one year from the effective date of termination, the Owner shall pay the Builder only for services actually performed and expenses actually incurred prior to the effective termination date.

ARTICLE 23 – DISPUTE RESOLUTION

23.1 Mutual Discussion

In case of any dispute, claim, question or disagreement arising from or relating to the Project or arising out of the Contract for Construction or the breach thereof, the parties shall first attempt resolution through mutual discussion.

23.2 Facilitative Mediation

If the parties cannot resolve any dispute, claim, question, or disagreement arising from or relating to the Project or arising out of the Contract for Construction or the breach thereof through mutual discussion, the parties may in good faith participate in private, non-binding facilitative mediation seeking a just and equitable solution satisfactory to all parties.

- 23.2.1 All parties to a mediation shall promptly provide all other parties to the mediation with copies of essential documentation relevant to the support or defense of the matter being mediated.
- 23.2.2 The parties shall not be required to mediate for a period greater than ninety-one calendar days unless otherwise agreed to in writing by the parties. The parties shall share equally any administrative costs and fees of such proceedings, but shall each be responsible for their own expenses otherwise incurred.
- 23.2.3 In the event that the statute of limitations would run during the required mediation period, either party may institute litigation so as to avoid the running of such statute upon the condition that such party immediately seek a stay of such litigation pending the conclusion of the mediation period.
- 23.2.4 During the course of mediation, any party to the mediation may apply for injunctive relief from any court of competent jurisdiction until the mediation period expires or the dispute is otherwise resolved.
- 23.2.5 The Owner, the Professional, the Builder, and any other parties involved in any way in the design or construction of the Project are bound, each to each other, by this requirement to mediate prior to commencement of any litigation or administrative action, provided that they have signed the Contract for Construction or an agreement that incorporates the Contract for Construction by reference or signed any other agreement which binds them to mediate. Each such party agrees that it may be joined as an additional party to a mediation involving other parties under any such agreement. In the case where more than one mediation is begun under any such agreement and any party contends that the mediations are substantially related, the mediations may be conducted by the mediator selected in the first mediation which was commenced.
- 23.2.6 The mediation shall be conducted in Alachua County, Florida, unless agreed otherwise by the parties.

23.3 Conflicting Dispute Resolution Provisions

Neither party to the Contract for Construction shall enter into any contract with regard to the Project which directly or indirectly gives the right to resolve any dispute with, involving, or affecting the other to any other person or legal entity which is in conflict with the dispute resolution procedures required by this Article.

23.4 Arbitration Preclusion

In case of a dispute relating to the Project, or arising out of the Contract for Construction, no party to the Contract for Construction shall be required to participate in or be bound by, any arbitration proceedings.

23.5 Performance during Dispute Resolution

The Owner and the Builder agree that pending the resolution of any dispute, controversy, or question, the Owner and the Builder shall each continue to perform their respective obligations without interruption or delay, and the Builder shall not stop or delay the performance of the Work.

23.6 Litigation/Administrative Action

Disputes, claims, questions or disagreements involving monetary claims of \$200,000.00 or less may be conducted, at the Owner's option, pursuant to the Administrative Procedures Act, Chapter 120 Florida Statutes. All other claims, disputes and other matters shall be determined under the judiciary system of the State of Florida.

ARTICLE 24 – DAMAGES AND REMEDIES

24.1 Builder's Repair

The Builder shall, at its expense, promptly correct, repair, or replace all goods, products, materials, systems, labor and services which do not comply with the warranties and guarantees set forth in the Contract for Construction, or any other applicable warranty or guarantee.

24.2 Reimbursement

The Builder shall promptly reimburse the Owner for any expenses or damages incurred by the Owner as a result of (i) the Builder's failure to substantially perform in accordance with the terms of the Contract for Construction; (ii) deficiencies or conflicts in the Construction Documents attributable to the Builder or of which the Builder was or should have been aware; (iii) breach of the warranties and guarantees set forth in the Contract for Construction or any other applicable warranty or guarantee; or (iv) other acts or omissions of the Builder. Reimbursements to the Owner made in accordance with this Article are separate and distinct from the assessment of liquidated damages, if any, as defined elsewhere in the Contract for Construction.

24.3 General Indemnity

Pursuant to Section 725.06(2), Florida Statutes, the Builder shall indemnify and hold Owner (including its officers and employees) and Owner's Related Parties harmless from and against all liabilities, damages, losses, and costs, including but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Builder and persons employed or utilized by the Builder in the performance of the Work or under the Contract for Construction.

24.4 Intellectual Property Indemnity

To the fullest extent permitted by law, the Builder shall defend, protect, hold harmless, and indemnify the Owner and Owner's Related Parties from and against any and all liability, loss, claims, demands, suits, costs, fees and expenses (including actual fees and expenses of attorneys, expert witnesses, and other consultants), by whomsoever brought or alleged, for infringement of patent rights, copyrights, or other intellectual property rights, except with respect to designs, processes or products of a particular manufacturer expressly required by the Owner or Professional(s) in writing. However, if the Builder has reason to believe the use of a required design, process, or product is an infringement of a patent, copyright, or other intellectual property right, the Builder shall defend, protect, hold harmless, and indemnify the Owner and Owner's Related Parties as stated above, unless the Builder promptly notifies the Owner of that belief.

24.5 Non-Exclusivity of Owner's Remedies

The Owner's selection of one or more remedies for breach of the Contract for Construction contained herein shall not limit the Owner's right to invoke any other remedy available to the Owner under the Contract for Construction or by law.

24.6 Waiver of Damages

The Builder shall not be entitled to, and hereby waives, any monetary claims for or damages arising from or related to, lost profits, lost business opportunities, unabsorbed overhead, or any indirect or consequential damages.

ARTICLE 25 – MISCELLANEOUS PROVISIONS

25.1 Integration

The Contract for Construction represents the entire and integrated agreement between the Owner and the Builder, and supersedes all prior negotiations, representations or agreements, either written or oral, for the Project. The Contract for Construction may be amended only by written instruments signed by both the Owner and the Builder.

25.2 Severability

If any provision of the Contract for Construction, or the application thereof, is determined to be invalid or unenforceable, the remainder of that provision and all other provisions shall remain valid and enforceable.

25.3 Waiver

No provision of the Contract for Construction may be waived except by written agreement of the parties. A waiver of any provision on one occasion shall not be deemed a waiver of that provision on any subsequent occasion, unless specifically stated in writing. A waiver of any provision shall not affect or alter the remaining provisions of the Contract for Construction.

25.4 Strict Compliance

No failure of the Owner to insist upon strict compliance by the Builder with any provision of the Contract for Construction shall operate to release, discharge, modify, change or affect any of the Builder's obligations.

25.5 Third-Party Beneficiaries

The Contract for Construction shall inure solely to the benefit of the parties hereto and their successors and assigns, and, except as otherwise specifically provided in the Contract for Construction, nothing contained in the Contract for Construction is intended to or shall create a contractual relationship with, or any rights or cause of action in favor of, any third party against either the Owner or the Builder.

25.6 Assignment of Anti-Trust Claims

In consideration for the Contract for Construction, the Builder hereby conveys, sells, assigns and transfers to the Owner all of its right, title and interest in and to any and all causes of action it may now have or may hereafter acquire under the antitrust laws of the United States and the State of Florida for price fixing, relating to the goods or services purchased or acquired by the Owner under the Contract for Construction.

25.7 Drug Free and Tobacco-Free Workplace

Pursuant to 440.102(15), Florida Statutes, Builder shall implement, and cause its applicable subcontractors to implement, a drug-free workplace program. Additionally, the Builder shall enforce the Owner's tobacco-free policy.

25.8 Survival

All provisions of the Contract for Construction which contain continuing obligations shall survive its expiration or termination.

25.9 Independent Contractor

Builder is an independent contractor to Owner.

25.10 Public Records

Any books, documents, records, correspondence, or other information kept or obtained by the Owner or furnished by Builder to Owner in connection with the services contemplated herein are property of Owner.

25.10.1 Builder acknowledges and agrees that any and all such books, documents, records, correspondence or other information may be public records under Chapter 119, Florida Statutes

25.10.2 Builder agrees to promptly comply with any order of a Court having competent jurisdiction that determines that records maintained by Builder are "public records," which must be available to the public.

25.10.3 Builder acknowledges and agrees that any and all such books, documents, records, correspondence, or other information may also be subject to inspection and copying by members of the public pursuant to Chapter 119, Florida Statutes.

25.10.4 The Contract for Construction may be unilaterally canceled by the Owner for refusal by the Builder to allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received by the Builder in conjunction herewith.

25.11 Governing Law and Venue

The Contract for Construction shall be governed by, and construed under, the laws of the State of Florida, without regard to its choice of law provisions, and venue shall lie in the courts of Alachua County, Florida.

25.12 Sovereign Immunity

Builder acknowledges and agrees that nothing contained in the Contract for Construction shall be construed or interpreted as (i) denying to Owner any remedy or defense available to it under the laws of the State of Florida; (ii) consent of the Owner or the State of Florida or their agents and agencies to be sued; or (iii) a waiver of sovereign immunity of the Owner or of the State of Florida beyond the limited waiver provided in section 768.28, Florida Statutes.

00810 Vendor Diversity

- 1.1 The University of Florida is an equal opportunity institution and, as such, encourages the use of small businesses, woman-owned businesses, and minority-owned businesses in the provision of construction-related services. Such businesses should have a fair and equal opportunity to compete for dollars spent by the University of Florida to procure construction-related services. Competition ensures that prices are competitive and a broad vendor base is available.
- 1.2 The Builder shall use good faith efforts to ensure opportunities are available to small, woman-owned, and minority-owned businesses on the Project.
- 1.3 Contact the UF Division of Small Business and Vendor Diversity Relations for more information.

END OF SECTION

00842 Safety Requirements

1.1 Health and Safety Requirements

- A. Builders shall ensure that all activities carried out on behalf of the University or on University property are in compliance with all applicable Federal, state and local regulations (OSHA, EPA, FDEP) pertaining to worker and site safety.
- B. The Builder shall have a written health and safety program that outlines safe work practices and procedures expected to be followed by workers and shall have it available for review by the University's project manager or by representatives of the Environmental Health and Safety division upon request. Project managers and superintendents/supervisors shall have obtained an OSHA 30-hour Construction Safety Outreach Training card within 5 years of the date of the applicable project. The Builder is solely responsible for ensuring that all workers have received any required safety-related training. Training documentation shall be made available for review upon request.
- C. The Builder shall have a competent person or persons as defined by OSHA 29CFR1926.32(f) on the job site to monitor hazardous work activities such as, but not limited to, crane operations, electrical safety, excavations, fall protection, scaffolding, and confined space entry.
- D. The Builder shall have an updated Safety Data Sheet (SDS) for all chemical products used on the job site. The SDSs shall be readily accessible to all project workers and to University staff on request. If the use of any chemical product has the potential for harmful exposure to University of Florida staff, students or visitors, UF Environmental Health and Safety (EH&S) shall be notified and exposure controls will be discussed prior to the use of that chemical product.

1.2 Hazardous Substances

Refer to the General Terms & Conditions.

1.3 Trench Safety Act

It is the responsibility of the Builder to comply with F.S. 553.60.

END OF SECTION

00902 Public Entity Crimes

- 1.1 Per F.S. 287.133, any person or affiliate who has been placed on the convicted vendor list by the Florida Department of Management Services may not submit a bid on a contract to provide any goods or services – including construction, repairs, or leases – and may not be awarded or perform work as a contractor (Builder), supplier, subcontractor, or consultant for the University of Florida for a period of 36 months from the date of being placed on the convicted vendor list. A "person" or "affiliate" includes any natural person or any entity, including predecessor or successor entities or an entity under the control of any natural person who is active in its management and who has been convicted of a public entity crime.

END OF SECTION

00903 Asbestos

1.1 Background

Asbestos is a confirmed human carcinogen that was previously used in many different types of building materials. It is important to note that asbestos in an undisturbed state is not considered hazardous. Due to the potential hazards associated with asbestos exposure if the material becomes airborne, Federal and State regulations are in place to control activities impacting asbestos containing materials. Various asbestos products can still be found in University of Florida buildings.

1.2 Surveys

- A. An asbestos survey meeting the requirements of Federal and State regulations shall be completed prior to the commencement of any renovation, remodeling, or demolition project involving a University-owned building, a component of a University-owned building, or a building scheduled to be purchased by the University. A survey is required regardless of the age of the building. Asbestos surveys must be conducted by a Florida Licensed Asbestos Consultant (LAC) or their appointed representative.
- B. All surveys are required to be submitted to EH&S for review prior to the start of a construction project. EH&S reserves the authority to reject a survey based on incomplete content or failure to follow regulatory requirements.
- C. A limited survey, based on a review of the project scope of work, may be authorized by UF Environmental Health and Safety (EH&S).
- D. A copy of the completed asbestos survey must be kept on site for the duration of a construction project.

1.3 Asbestos Removal

- A. Any removal or altering of asbestos containing material must be completed by a licensed asbestos abatement contractor.
- B. Asbestos-containing roofing may be removed by a State-certified or registered roofing contractor provided that all removal activities are performed under the direction of an onsite roofing supervisor. The supervisor must remain on site at all times while removal activities are taking place. The supervisor is required to have completed an approved asbestos roofing course prior to engaging in the removal of asbestos containing roofing materials, and copies of training documentation shall be provided to EH&S before job commencement.
- C. All activities involving the removal of asbestos containing materials require the submission of an Asbestos Project Notification Form (APNF) to Environmental Health and Safety at least ten days prior to the start of an asbestos project.

- D. The asbestos abatement contractor or demolition contractor actually performing the work is responsible for submitting an additional notification to the designated regulatory authority, typically either the Florida Department of Environmental Protection or the Florida Department of Business and Professional Regulation.

END OF SECTION

01014 Builder's Use of the Premises

PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Documents affecting the work of this Section include other elements of the Contract for Construction, including the Owner/Builder Agreement or Owner/Design-Builder Agreement, the General Terms & Conditions, other sections of the Division 0 and Division 1 non-technical specifications, and the technical plans and specifications.
- B. Refer to section 01016 for information regarding utility outages and dig permits.
- C. Refer to section 01310 for requirements regarding the coordination of work with the University of Florida Schedule.
- D. Refer to section 01500 for requirements related to Temporary Facilities & Controls.

1.2 DESCRIPTION OF WORK INCLUDED

This Section applies to situations in which the Builder or his representatives including, but not necessarily limited to, suppliers, subcontractors, employees, and field engineers, enter upon the Owner's property.

1.3 QUALITY ASSURANCE

- A. Promptly upon award of the Contract, notify all pertinent personnel regarding requirements of this Section.
- B. Require that all personnel who will enter upon the University's property certify their awareness of and familiarity with the requirements of this Section.
- C. Builder shall strictly enforce the University's **Tobacco Free** policy.

1.4 TRANSPORTATION FACILITIES

- A. See section 01500 for information on the maintenance of safe and accessible paths of travel in and around the job site.
- B. Builder's Vehicles:
 - 1. Builder's vehicles, vehicles belonging to employees or subcontractors of the Builder, and all other vehicles entering the Owner's property in performance of the Work shall only use agreed-upon access route(s).

2. All vehicles parked on campus (including construction sites) must have a valid parking permit issued through Transportation and Parking Services in accordance with University of Florida Police Department (UFPD) requirements. Permits – for remote/offsite worker parking, onsite staff parking, and remote/offsite storage containers – shall be requested through the University Project Manager.
 - (a) Remote/offsite worker parking and space for trailer/storage containers is provided at a paved lot near the Hilton on SW 34th Street. See map on the “Forms & Standards” page of the Planning Design & Construction website (www.facilities.ufl.edu).
 - (b) Trailer/storage containers in the remote/offsite lot shall be clearly marked with the following information: Project Number, Project Name, Company Name, and Phone Number.
 - (c) Remote parking and trailer/storage container area must be kept clean and free of debris.
 - (d) See part 1.10 of this Specification regarding home football game weekends.
 - (e) Vehicles not following this policy may be ticketed or towed.
3. Within the University approved fenced-in construction site area, the Builder shall manage all site use, including parking by construction staff and employees (if approved). Do not permit vehicles to park on any street or other area of the Owner's property except in areas designated by the University.
4. Outside the designated construction site area, all University regulations regarding parking and accommodations for pedestrian use shall be strictly enforced.
5. Exceptions for temporary parking for construction delivery and construction access on curb side, walkways, vehicular parking, roadways and service drives that restricts or impedes normal traffic flow or use must be obtained from UF Transportation & Parking Services through the University Project Manager. This exception is granted only for construction vehicles, not for private passenger vehicles. Any temporary use of pedestrian pathways that exceeds 24 hours duration will require provision for equal alternate pathways around the impediments and UFPD review. In addition, any temporary use of the site (exceeding 24 hours duration) that impedes building occupant egress must be reviewed by UF Environmental Health & Safety (EH&S).
6. The University Project Managers shall not seek waivers of any sort for ticketed and towed vehicles in violation of the University parking regulations. Knowledge of the University Parking Regulations is the personal responsibility every individual who commutes to and works on campus.

7. Provide adequate protection for curbs and sidewalks over which trucks and equipment must pass to reach the job site.

1.5 INSPECTIONS and TESTS

- A. Physical Plant Division (PPD) inspections shall be requested 48 hours in advance through PPD Operations Engineering. The inspection request form and supporting checklists can be found on the “Forms & Standards” page of the Planning Design & Construction website (www.facilities.ufl.edu). Inspection checklists shall be tailored by the Owner and Builder to the specific requirements of the project.
- B. Environmental Health & Safety (EH&S) inspections shall be requested 24 hours in advance. Also see section 01060.
- C. Office of Information Technology (OIT): Contact Telecommunications and Infrastructure (TNI) 24-48 hours in advance to request inspections for all telecom, cabling, and network infrastructure work. The inspection checklist – with notification timeframes and contact information – can be found on the “Forms & Standards” page of the Planning Design & Construction website (www.facilities.ufl.edu).
- D. HealthNet: For Health Science Center projects only, contact HealthNet 24-48 hours in advance to request inspections for all telecom, cabling, and network infrastructure work. The inspection checklist – with notification timeframes and contact information – can be found on the “Forms & Standards” page of the Planning Design & Construction website (www.facilities.ufl.edu).
- E. Office of Academic Technology (OAT): Where applicable, contact OAT 48 hours or more in advance to request inspections for all work related to classroom audio/visual systems. The inspection checklist – with notification timeframes and contact information – can be found on the “Forms & Standards” page of the Planning Design & Construction website (www.facilities.ufl.edu).
- F. University of Florida Police Department (UFPD): UFPD must verify construction fencing, exterior lighting, landscaping, and other items during construction and closeout.
- G. Tests
 1. The Builder shall notify PPD and EH&S of all scheduled tests at least 48 hours in advance.
 2. Properly completed test reports shall be provided at the conclusion of each test. It is the responsibility of the Builder to maintain such reports through

Final Completion, at which point they shall be submitted with other closeout materials, such as Operation & Maintenance manuals.

1.6 SECURITY

- A. Construction sites located on the University of Florida campus fall under the jurisdiction of the UFPD. Any incident requiring police service should be immediately reported to the UFPD at (352) 392-1111.
- B. Builders and employees are to obey all laws and rules of the State of Florida and the University of Florida when on University property.
- C. Students, faculty, and staff shall not be harassed, disturbed, or in any way disrupted in their lawful pursuits. Sexual harassment shall be reported to the University's Title IX Coordinator and Deputy Title IX Coordinator for Students as per the following policy: www.hr.ufl.edu/prevent
- D. Restrict the access of all persons entering upon the Owner's property in connection with the Work to the access route and to the actual site of the Work. Employees are not permitted to enter University buildings unless such entry is directly related to their job duties.
- E. Restrict activities of employees to authorized areas. Employees shall not be allowed to mingle in student or public areas.
- F. Builders and employees shall secure all property to reduce theft or damage to equipment or property. Builders shall work with the UFPD as necessary and participate in crime prevention efforts.
- G. The Builder shall at all times guard against damage or loss to the property of the University or other vendors or contractors and shall be held responsible for replacing or repairing any such loss or damage. The University may withhold payment or make such deductions as deemed necessary to insure reimbursement or replacement for loss or damaged property through negligence of the successful bidder or his agents. Replace any trees, shrubs, lawns, or plantings damaged by Builder or its subcontractors or vendors during work of this project within two (2) weeks of occurrence. Grassed areas generally have irrigation systems below grade; verify location of these systems and all underground utilities in work or staging areas prior to start of construction. Repair utilities damaged by work of this project.
- H. The Builder shall provide identification badges for all personnel working on the site and shall require continuous use (wearing) of same at all times. Badge shall display photograph, name of employee, and company for which employee works.

- I. The Builder shall keep a daily log of all employees, visitors, and other personnel that enter the Project site. Said log shall be accessible to UFPD upon request.

1.7 PERSONNEL SCREENING

The following requirements are to be met by Builders and their subcontractors and vendors while engaged in construction projects at the University of Florida:

- A. A criminal history check shall be performed on all jobsite personnel, including subcontractors and temporary day laborers, at least once every two years. Prior to personnel entering the Project site, an initial criminal history background check shall be submitted to and performed by a private company trained to perform employment screening. The results of each criminal history check shall be reported to the Builder, which shall screen the results for the following disqualifying offenses to determine a person's eligibility to work on the University of Florida campus.
 1. Drug distribution activity or felony drug possession
 2. Sexual offenses, including, but not limited to, indecent exposure and voyeurism
 3. Crimes of violence involving physical injury to another person
 4. Murder
 5. Kidnapping
 6. Felony theft
- B. The following searches shall be performed to document types of convictions listed above that will render an individual ineligible to perform work on campus unless a waiver is granted:
 1. SSN Trace plus address history
 2. Sexual Offender database check
 3. National Criminal Database search
 4. 7-year County Court Check in the employee's County of residence
- C. Entities seeking to use an employee with one or more revealed convictions must apply for a written waiver from the UFPD Chief at (352) 392-1111 or updinfo@admin.ufl.edu.
- D. The UFPD Chief will consider the following factors when determining whether or not a waiver will be granted:
 1. The nature and gravity of any criminal offense(s);
 2. The individual's age at the time of the offense(s);
 3. The number and type of offense (felony, misdemeanor, traffic violations, etc.);
 4. The sentence or sanction for the offense and compliance with the sanction(s);
 5. The amount of time that has passed since the offense and/or completion of the sentence(s);

6. Whether there is a pattern of offenses;
 7. Whether the offense arose in connection with the individual's prior employment or volunteer activities;
 8. Information supplied by the individual about the offense(s);
 9. Work record and references after the offense(s);
 10. Subsequent criminal activity; and
 11. Truthfulness of the individual in disclosing the offense(s).
- E. Builders shall certify that all personnel have been subject to a criminal background check and shall continuously track, monitor, and re-certify throughout construction as new trades and personnel begin work.
- F. The cost of the criminal background check shall be borne by the Builder, but is compensable as a General Conditions expense for CMs and D/Bs.
- G. The Builder shall maintain copies of background checks at their home office, with background checks electronically accessible at the Project site. The names and pertinent information of all screened and approved employees shall be posted to the PD&C Sharepoint site at:
<https://uflorida.sharepoint.com/sites/pdc/prj/Lists/Background%20Checks/AllItems.aspx>

1.8 WORK HOURS

- A. Regular work hours shall be between 7:00 AM and 5:00 PM, Monday through Friday, excluding holidays.
- B. Work outside these hours must be requested in writing and approved by the Owner.
- C. Work will be required outside of regular work hours.

1.9 UNMANNED AIRCRAFT

- A. The use of unmanned aircraft systems (e.g., drones or model aircraft) over University property is prohibited without the written approval of UF EH&S.
- B. For a complete explanation of the policy, procedures, and requirements, see www.ehs.ufl.edu/programs/rm/uas_procedures.

1.10 HOME FOOTBALL GAME WEEKENDS

- A. Approximately 100,000 people converge upon the campus on each of 6-7 Fall weekends for Gator football games. To safeguard both the public and the Work, jobsites on campus shall be secured, left clean, and free of safety hazards by 4:00 PM Friday on such weekends, with no work taking place on or around the site until Monday morning.

- B. Likewise, remove all vehicles parked at the paved remote lot near the 34th Street Hilton by 4:00 PM Friday on such weekends and do not permit parking there again until Monday morning. Approved trailer/storage containers may remain.
- C. See www.gatorzone.com for the football game schedule and incorporate these dates into the construction schedule.
- D. The Builder may request special exceptions to this policy with written justification at least one week in advance, but the Owner is under no obligation to approve such requests.

1.11 PRE-CONSTRUCTION MEETING

- A. Prior to commencing Work at the site, the Builder shall attend a pre-construction conference with the University Project Manager, the Design Professional(s), other UF officials, and external agency representatives, if applicable (such the District Engineer on a Federally-funded project).
- B. Builder attendees shall include all field staff (project manager, superintendent(s), project engineer(s), and clerical assistants), plus major trade subcontractors as directed by the University Project Manager.
- C. The parties will discuss the administrative, logistic, fiscal, and procedural requirements for the Work, and for work in general at the University of Florida.
- D. The template agenda for the meeting shall be provided by the University Project Manager, who shall also arrange for attendance by other UF officials and outside agencies, if any. The Builder shall record and distribute minutes.

END OF SECTION

01016 Utility Outages and Dig Permits

PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Documents affecting the work of this Section include other elements of the Contract for Construction, including the Owner/Builder Agreement or Owner/Design-Builder Agreement, the General Terms & Conditions, other sections of the Division 0 and Division 1 non-technical specifications, and the technical plans and specifications.
- B. Refer to Section 01310, Construction Schedule for related requirements regarding the coordination of utility outages with the University of Florida Schedule.

1.2 UTILITIES OUTAGES

- A. Planned utility outages are occasionally required for repairs, maintenance or construction. In order to avoid unexpected inconveniences, property damage, safety hazards, or loss of information or research, the Physical Plant Division (PPD) has instituted a utility outage notification system.
- B. When the Work requires an outage, the Builder shall submit – at least seven (7) work days in advance – a written request to PPD via the University Project Manager on an Owner-furnished form. Outages shall not proceed until authorized by PPD.
- C. Utility outages will be performed by PPD Systems personnel, at no cost to the Builder. The project will pay the applicable costs. However, the costs associated with an outage that becomes necessary to correct deficient work performed during a previous outage will be back-charged to the Builder. Contact PPD Operations Engineering (Telephone: 392-5050) as necessary to determine these costs.
- D. Unplanned utility outages occur on occasion as the unwelcome result of repair, maintenance, or construction activities. Report all unplanned utility outages immediately to the PPD Work Management Center (Telephone: 392-1121) and to the University Project Manager.
- E. Advance notification of between 14 and 30 calendar days must be provided to the Health Science Center, Department of Housing, and IFAS for significant outages effecting facilities operated by those entities.

1.3 DIG PERMITS

- A. All trenching, excavation, digging operations, or other penetration of the ground within the confines of the University campus or in any area for which the University has responsibility, requires the Builder to obtain a Dig Permit, PPD Form 611, which can be retrieved from the PPD website at www.ppd.ufl.edu.
- B. The person, Builder, agency, or organization that will be performing the trenching, excavation, digging, or other ground-penetrating activity is responsible for requesting and obtaining permission to perform that activity.
- C. All Dig Permits shall be applied for 72 hours prior to the start of any work that penetrates the ground. Dig Permit applications shall be completed at PPD, Building 702.
- D. Sunshine State One-Call (800-432-4770) shall be utilized for utilities owned by others, including BellSouth, Cox Cable, and Gainesville Regional Utilities (GRU).

END OF SECTION

01060 Regulatory Requirements

PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Documents affecting the work of this Section include other elements of the Contract for Construction, including the Owner/Builder Agreement or Owner/Design-Builder Agreement, the General Terms & Conditions, other sections of the Division 0 and Division 1 non-technical specifications, and the technical plans and specifications.

1.2 BUILDING CODE ENFORCEMENT PROGRAM

- A. TITLE XLVIII (Florida K-20 Education Code) and Chapter 553.80(6) F.S. assign responsibility to the State University System for the enforcement of the Florida Building Code and the Florida Fire Prevention Code during building construction and renovation at State universities. At the University of Florida, the Environmental Health and Safety Division (EH&S) has been assigned the responsibility to implement and administer the Building Code Permit and Inspection Program. Program compliance requires that construction plans/specifications and permit application documents be submitted to the UF Building Code Administrator (EH&S) for review. Construction shall not begin on the project until a building permit has been issued by EH&S and the permit posted at the construction site.
- B. A more complete description of the University of Florida's Building Code Enforcement Program may be obtained from the University's Building Code Administrator.

EH&S Building Code Enforcement

Building 179, 916 Newell Drive, P.O. Box 112190, Gainesville, FL, 32611-2200

Phone: (352) 392-1591; Fax (352) 392-3647

Internet: www.ehs.ufl.edu

C. RESPONSIBILITIES

1. The duly licensed State of Florida contractor shall apply to the UF Division of Environmental Health & Safety for a building permit. At the time of application for a permit, the Builder shall provide two sets of signed and sealed construction documents and specifications, a list of all subcontractors with appropriate license numbers and proof of Worker's Compensation insurance, and the "letter of code compliance" indicating the plans have been reviewed by EH&S and all outstanding code and safety-related items have been resolved. If a "letter of code compliance" has not been issued by EH&S, two copies of the final construction (bid) documents and specifications must

accompany the application. A building permit will be issued after the documents have been reviewed for code compliance by the Building Code Administrator/staff. One of the submitted sets of plans and specifications will be returned with the building permit placard and shall be stamped by EH&S stating "Reviewed for Code Compliance." This set of documents shall be protected and kept on site by the contractor for use by EH&S code enforcement.

2. When the contractor has completed the project per the permit documents and submitted all required tests and reports, their authorized representative shall request in writing a certificate of completion or certificate of occupancy from the UF/EH&S Building Code Administrator as required by the Florida Building Code.

1.3 LIFE SAFETY & FIRE SAFETY PLAN REVIEW

- A. In conjunction with review of plans for Building Code Compliance EH&S has been assigned the duty of life safety & fire safety plan review and inspection of UF construction projects.
- B. Plan review shall be conducted as each project is submitted for building code compliance review. A separate submission will not be required for this review phase as it will be conducted simultaneously with the building code compliance review.
- C. Inspections of life safety items shall be scheduled through EH&S's normal inspection process.
- D. Prior to issuance of the certificate of occupancy or completion EH&S's fire plans reviewer and inspector shall certify that the project meets or exceeds all life and fire safety minimum codes and standards.

1.4 FLORIDA PRODUCT APPROVAL

As required by Florida Statutes, the Builder shall provide information on certain structural and building envelope products and components. See "Florida Product Approval Info Sheet" on the "Forms" page of the EH&S Building Code Enforcement website (www.ehs.ufl.edu/buildcode).

END OF SECTION

01310 Construction Schedules

PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Documents affecting the work of this Section include other elements of the Contract for Construction, including the Owner/Builder Agreement or Owner/Design-Builder Agreement, the General Terms & Conditions, other sections of the Division 0 and Division 1 non-technical specifications, and the technical plans and specifications.
- B. Refer to Section 01016, Utility Outages, for related requirements regarding the pre-planning of utility outages.
- C. Comply with pertinent provisions of Technical Specifications and drawings.

1.2 QUALITY ASSURANCE

- A. Employ, if necessary, a scheduler who is thoroughly trained and experienced in compiling construction schedules, and in preparing and issuing periodic reports as required.

PART 2 – PRODUCTS

2.1 CONSTRUCTION ANALYSIS

- A. Graphically show by bar chart the order and interdependence of all activities necessary to complete the Work, and the sequence in which each activity is to be accomplished, as planned by the Builder in coordination with all subcontractors whose work is shown on the diagram.
- B. Highlight the “critical path” through the schedule to illustrate those inter-dependent activities that cannot be delayed without impacting the overall completion time.
- C. Builder shall coordinate the Work with the University of Florida schedule. The Work shall be scheduled and carried out such that the normal operations of the University are given first priority. This applies particularly to outages of utilities and restrictions of access. The University may require such construction operations to be executed outside of normal working hours and by overtime, weekend, and holiday working. It shall be the Builder's responsibility to provide for this in the Cost of Work.
- D. See Section 01014 for information on home football game restrictions, and account for same in the construction schedule.

- E. Incorporate commissioning requirements and milestones.
- F. Provide amplifying information as needed, such as reports on “float,” or as requested by the Owner or Professional.

END OF SECTION

01352-1

01500 Temporary Facilities and Controls

PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Documents affecting the work of this Section include other elements of the Contract for Construction, including the Owner/Builder Agreement or Owner/Design-Builder Agreement, the General Terms & Conditions, other sections of the Division 0 and Division 1 non-technical specifications, and the technical plans and specifications.
- B. Utility outages and dig permits are covered in Section 01016. Permanent installation and hookup of the utility lines are described in other sections.

1.2 DESCRIPTION

A. WORK INCLUDED

Provide temporary facilities and controls needed for the Work, including, but not necessarily limited to:

1. Temporary utilities such as water, electricity, and telephone;
2. Field offices and sanitary facilities for the Builder's personnel;
3. Enclosures such as tarpaulins, barricades, and canopies; traffic control and pedestrian control devices;
4. Erosion control measures; and
5. Directional and informational signage.

B. WORK NOT INCLUDED

1. Except for the requirement that equipment furnished by subcontractors shall comply with pertinent safety regulations, such equipment as normally furnished by the individual trades in execution of their own portions of the Work, is not part of this Section.
2. The permanent installation and hookup of utility lines are described in other sections and are not part of this Section except as related to the metered cost of such utilities once established.

1.3 PRODUCT HANDLING

Maintain temporary facilities and controls in proper and safe condition throughout progress of the Work.

1.4 SUBMITTALS

- A. The Builder shall present a jobsite management plan in the form of a scaled, marked-up site plan for the Owner's review at or prior to the Pre-Construction Conference. This drawing shall identify, at a minimum:
 - 1. Temporary fencing with gated point(s) of access
 - 2. Materials delivery & storage areas
 - 3. Field office or storage trailers
 - 4. Temporary accessibility features including paved or unpaved roads, sidewalks, bicycle paths, ramps, curb cuts, canopies, barricades, or other means of maintaining safe and ADA-accessible routes through or around the site
 - 5. Waste collection (dumpsters)
 - 6. Signage and striping
 - 7. Paths for emergency egress
 - 8. Onsite staff parking
 - 9. Tree protection
 - 10. Restricted access routes for vehicles and equipment belonging to the Builder and its subcontractors, vendors, and employees entering upon the UF Campus
- B. As construction progresses, the Builder shall identify any required disruptions or restrictions of roads, sidewalks, bicycle lanes, or other means of access. Approval for such disruptions shall be secured prior to scheduling related work by submitting a written request to the University project manager. This request shall be accompanied by a site sketch, start and end dates, an explanation of the reasons(s) for the request, and an illustration or description of the temporary controls to be used to maintain safe access. **THE FULL CLOSING OF VEHICULAR ROADS (i.e., all lanes) ON THE UF CAMPUS SHALL NOT BE PERMITTED.**
- C. A formal traffic control plan – including credentials of plan developer – shall be submitted for review when lane closures are anticipated. See paragraph 3.1 of this section.

PART 2 – PRODUCTS

2.1 TEMPORARY UTILITIES

- A. USAGE, ESTABLISHMENT, and COST
 - 1. The Builder shall include in the Cost of Work both the installation of any temporary utilities and the (monthly) usage fees for same. This includes, but

is not limited to: potable water for drinking and/or construction trailers; water for cleaning, construction, flushing, commissioning, and testing of plumbing and mechanical systems; convenience power for tools, lighting, and/or construction trailers; temporary power for construction and testing; telecommunications lines for phone, fax, or Internet service. Current PPD utility rates can be viewed at <https://www.ppd.ufl.edu/information/rates.shtml>.

2. For use of University-owned utilities, the Builder shall establish an account with PPD by contacting PPD Billing at (352) 294-0628.
3. Prior to beginning work that involves connections to the University's utilities systems, the Builder shall submit – at least 48 hours in advance – a work request to PPD Work Management (392-1121) for installation of temporary meter(s) by PPD Utility Services.

B. WATER

1. The point(s) of connection shall be designated by PPD.
2. A temporary potable water meter will be furnished and installed by PPD Utility Services. Allow 14 days lead time for the Owner-furnished meter. The Builder shall furnish and install all necessary related accessories.
3. Builder shall furnish and install all necessary temporary piping and water supply and, upon completion of the Work, remove same.

C. ELECTRICITY

1. The point(s) of connection shall be designated by PPD.
2. A temporary electric meter will be furnished by PPD Utility Services, which shall also energize service, but installed by the Builder. Allow 14 days lead time for the Owner-furnished meter. The Builder shall furnish and install all necessary related accessories (CTs, compatible meter socket/can, etc.).
3. Builder shall furnish and install all necessary temporary wiring and, upon completion of the Work, remove same.
 - (a) All temporary wiring provided by the Builder must conform to the requirements of the National Electric Code (NEC), the Industrial Safety Commission, and local requirements. In addition, all wire used shall be fused to adequately protect that wire according to the NEC.
 - (b) The Builder shall have an adequate number of outlets and each outlet shall be properly and clearly labeled with the maximum voltage and fuse protection.

(c) Where temporary lighting is used, outlets shall consist of a weatherproof socket properly insulated and provided with a locking type wire guard.

(d) All devices shall be properly grounded.

4. Provide area distribution boxes located such that the individual trades may furnish and use extension cords 100 feet in length (maximum) to obtain power and lighting at points where needed for work, inspection, and safety.
5. Temporary electric facilities shall be inspected and approved by PPD and EH&S prior to energizing by PPD Utility Services.
6. In keeping with UF sustainability policies, and to minimize the cost of utility services, the Builder shall minimize the use of temporary or permanent lighting, particularly when the jobsite is inactive. The use of energy efficient lamps is encouraged if the energy savings justifies any additional expense.

D. TELEPHONE and INTERNET

1. The Builder shall make arrangements with UF Information Technology (UF IT) or HealthNet – as applicable – or the local utility for temporary phone, fax, and/or Internet service lines.

E. SANITARY FACILITIES

1. Furnish and install temporary sanitary facilities for use by all construction personnel.
2. The Builder shall provide and maintain in a neat and sanitary condition such accommodations for the use of employees and subcontractors as may be necessary to comply with the regulations of the State Board of Health.
3. Unless expressly allowed by the Owner, existing sanitary facilities may not be used by construction personnel, subcontractors, or vendors.

2.3 FIELD OFFICES AND SHEDS

A. TRAILERS – Office and Storage

2.4 ENCLOSURES

- A. GENERAL: Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, steps, platforms, bridges, and other temporary construction

necessary for proper completion of the Work in compliance with pertinent safety and other regulations.

- B. **DUMPSTER ENCLOSURES:** For all projects requiring dumpsters, where the dumpster is located within the geographical area of campus bounded by SW 13th Street, West University Avenue, Gale Lemerand Drive, and Stadium Road, the dumpster shall be enclosed by a solid wooden fence installed around the entire perimeter. This fence shall be a minimum of 6' high and shall be constructed of vertical 1 x 6's on a 2 x 4 frame. Pre-fabricated sections are acceptable.
- C. **TREE PROTECTION:** See tree protection guidelines, Appendix I, University of Florida Construction Standards, Volume 1.

2.5 TEMPORARY FENCING

- A. Provide and maintain for the duration of construction a temporary fence to prevent entry of the public into the jobsite. Fencing shall be six-foot high sealed wood or chain link fencing with dark-colored inlaid fabric mounted on fixed posts of metal or wood for temporary parking and work area. Open trenches and other hazards shall be enclosed in a fixed wire fence or wooden barricades with flashing lights.
- B. Maintain the security and appearance of fencing throughout construction.

2.6 EROSION and SEDIMENTATION CONTROL

- A. The Builder shall develop a "Sedimentation and Erosion Control Plan" per the UF Design & Construction Standards (Appendix C).
- B. This plan shall be submitted for review and approval prior to beginning any onsite work or applying for dig permits.
- C. The Builder shall erect and maintain control measures as outlined in the plan throughout construction. Such measures may include gravel "wash-down stations" at jobsite entry and exit points, silt fencing, and temporary grass seeding.

2.7 SIGNAGE

- A. Install and maintain the appearance of the standard University of Florida Board of Trustees Project Sign in a location directed by the University Project Manager.
- B. Florida Statutes 812.014 and 810.09 require that construction fences be adorned with the following sign: **"WARNING (red on white) - This area is a designated construction site. Anyone trespassing on this property shall, upon**

conviction, be guilty of a felony.” (*black on white*) Signs shall be approximately 14" x 18".

- C. Post the following notice on each leg of construction fencing:
“Immediately report sexual harassment from anyone at this construction site. Please contact the University’s Title IX Coordinator at (352.273.1094).”
- D. Provide way-finding, directional, and other informational signage as needed to safely accommodate the public’s need to pass around or through the Work. This shall include, as needed, directional assistance for ADA-compliant paths of travel throughout the duration of construction.
- E. No other signs or advertisements are permitted.

2.8 CLEANLINESS

The Builder shall keep the premises free from accumulation of waste material and rubbish, and shall remove from the premises all rubbish, implements, surplus materials, and temporary facilities provided during the course of the Work, leaving spaces broom clean.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. The Builder shall not mobilize and/or erect temporary facilities until the jobsite management plan has been reviewed and approved by the Owner.
- B. Prior to erection of fencing, the Builder shall review the proposed fencing plan onsite with the University Project Manager and representatives of EH&S, UFPD, and the Americans with Disabilities Act Office.
- C. Directional signage shall be installed simultaneously with fencing and/or temporary roads or paths.
- D. Traffic maintenance devices and procedures (signage, barricades and cones, flagmen, etc.) shall be per Florida Department of Transportation (FDOT) standards (2003 Edition, Manual on Uniform Traffic Control Devices (MUTCD), with Revision No. 1 Incorporated, dated November 2004). Work zone traffic control schemes and devices shall only be implemented or installed in the field by or under the direct supervision of a person who has satisfactorily completed the training requirements prescribed by FDOT Topic No: 625-010-010-f, “MAINTENANCE OF TRAFFIC TRAINING,” Work Zone Traffic Control and Maintenance of Traffic Intermediate or Advanced Level as appropriate for the project. All flagmen shall have successfully completed the Work Zone Traffic Control and Maintenance of Traffic - Basic Level.

3.2 WEATHER PROTECTION

- A. Take necessary precautions to ensure that roof openings and other critical openings in the building are secured. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday. Ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.
- B. When a warning of gale force (or higher) winds is issued, take precautions to minimize danger to persons, and protect the work and nearby Owner property. Precautions shall include, but are not limited to, closing openings; removing loose materials, tools, and equipment from exposed locations; removing or securing scaffolding and other temporary work; and arranging for all dumpsters to be emptied.

3.3 MAINTENANCE AND REMOVAL

- A. Maintain temporary facilities and controls as long as needed for safe, compliant, and proper completion of the Work.
- B. Remove temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Owner.

END OF SECTION

01505 Construction Waste Management

PART 1 – GENERAL

1.1 RELATED SECTIONS:

- A. Documents affecting the work of this Section include other elements of the Contract for Construction, including the Owner/Builder Agreement or Owner/Design-Builder Agreement, the General Terms & Conditions, other sections of the Division 0 and Division 1 non-technical specifications, and the technical plans and specifications.
- B. See the Physical Plant Division Solid Waste Management website at <https://www.ppd.ufl.edu/departments/refuse.shtml>.

1.2 HAZARDOUS SUBSTANCES

- A. The builder is responsible for proper management of hazardous substances used, stored, handled, generated, or disposed of by his own construction activities (e.g., excess or unwanted hazardous construction-related materials, including, but not limited to: equipment lubricants, used oil filters, aerosols, paints, activators, adhesives, caulks, and other hazardous wastes). In no case shall such construction hazardous waste be commingled with demolition hazardous waste. In no case shall such construction hazardous waste be commingled with non-hazardous construction or demolition waste.
- B. For renovation or demolition projects, hazardous wastes shall be segregated, collected, labeled, and disposed of via UF Environmental Health & Safety (EH&S). These include light fixture ballasts (PCB and non-PCB), mercury thermostats, and batteries. See www.ehs.ufl.edu/programs/chemrad_waste.
- C. Evaluation, on-site storage, transportation, disposal and other aspects of Hazardous Waste Management shall comply with applicable Federal, State, and local laws.
- D. Refer to the General Terms & Conditions for requirements related to the discovery of environmental contamination, including, but not limited to, Hazardous Substances.

END OF SECTION

01700 Project Closeout

PART 1 – GENERAL

1.1 RELATED SECTIONS:

Documents affecting the work of this Section include other elements of the Contract for Construction, including the Owner/Builder Agreement or Owner/Design-Builder Agreement, the General Terms & Conditions, other sections of the Division 0 and Division 1 non-technical specifications, and the technical plans and specifications.

1.2 CERTIFICATE OF OCCUPANCY

Prior to occupancy of a new building, the Division of Environmental Health & Safety (EH&S) shall issue a Certificate of Occupancy (CO). The CO will state the building is complete, constructed in accordance with the plans and specifications, and meets the minimum code requirements at the time of issuance of the building permit. Project must achieve at least a temporary CO in order to achieve Substantial Completion.

1.3 SUBSTANTIAL COMPLETION

Separate and distinct from completion requirements related to life safety and building codes is the contractual obligation to achieve Substantial Completion on or before the specified date. Refer to the “Construction Inspection and Closeout” link under “Forms & Standards” on the Planning Design & Construction website (www.facilities.ufl.edu). Checklists and forms related to closeout shall be tailored by the Owner and design professional (A/E) to the specific needs of the project.

1.4 AS-BUILT DOCUMENTS

See the General Terms & Conditions and certain technical specifications for more information regarding as-built / record documents.

1.5 O&M MANUALS

- A. Builder shall provide draft operation and maintenance (O&M) manuals and other documents for review by UF, the A/E, and the CxA prior to manufacturer startups, Cx Functional Performance Testing, and Owner training.
- B. Builder shall tailor the O&M documents to the project, excluding or striking through models/types not installed and otherwise including only information pertinent to the products, materials, equipment, or components actually installed. Builder shall clearly identify each item, with references to the construction documents as needed.

- C. Builder shall augment O&M documents with the final approved versions of any submittals, shop drawings, or other system/product data not already included.
- D. Builder shall finalize turnover/closeout documents (including O&Ms) by addressing review comments and incorporating missing or finalized documents, test reports, and other relevant information.
- E. See 1.9 below for content and format requirements.

1.6 UTILITY VIDEOS

When required by the technical specifications, television camera videos of underground utility lines shall be provided to the engineer of record and the Owner in MPEG or AVI format.

1.7 OWNER TRAINING

- A. Training on building systems, equipment, and materials, the specific requirements for which are outlined in the technical specifications, shall be completed prior to Substantial Completion, at which point the Owner assumes the responsibility for operation and maintenance of the facility.
- B. Builder shall coordinate the schedule for training with UF and provide a comprehensive schedule for all training sessions at least 30 calendar days prior to the first scheduled session.
- C. Builder shall provide – at least two weeks in advance of each scheduled session – a syllabus, outline, or agenda for each training session for review by UF, the A/E, and (for commissioned systems) the CxA.
- D. Training shall be conducted with the (draft) O&M manuals in hand – preferably in conjunction with commissioning activities – and shall be videotaped and turned over to the Owner in MPEG format.

1.8 ATTIC STOCK

Coordination of the physical storage location of “attic stock” items shall be made with the building O&M entity prior to Substantial Completion, and the items and quantities of same (as outlined in the technical specifications) shall be on hand as a requirement of Substantial Completion. The Builder shall develop a spreadsheet itemization of attic stock and other items to be turned over to the Owner, tracking the type and quantity of material, date(s) of turnover, and other relevant information.

1.9 ENERGY REBATE PROGRAM

Builder shall gather product data and other information as needed to assist Owner with its application for energy rebates based on the materials and products installed in the facility.

1.10 CLOSEOUT DOCUMENTS and OTHER DELIVERABLES

- A. The final version of all O&M manuals and other turnover/closeout documents shall be provided in electronic (searchable PDF) form prior to Final Completion, including a Table of Contents for each discreet manual. Provide these to UF, the A/E on CD-ROM or through a file-sharing platform (e.g., Sharepoint), assembled and organized in electronic folders as follows:

010000 – General Requirements *(with subfolders for pre-concealment photos and other general information such as a complete list of subcontractors with contact information, a list/inventory of attic stock, and a final list/inventory of all colors & finishes)*

230000 – HVAC

- B. Other than 010000, each e-folder listed above, where applicable, shall include the following sub-folders to consistently organize the documents and material:

1. IOM Documents and Product Data
2. Shop Drawings
3. Training *(including training agendas, sign-in sheets, and videos)*
4. Warranty Documents

END OF SECTION

01800-5

PART 1 - GENERAL

- A. The work covered by this division consists of providing all labor, equipment, and materials and performing all operations necessary for the installation of the mechanical work as herein called for and shown on the drawings.

1.2 Related Documents:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to work of this section.
- B. This is a Basic Mechanical Requirements Section. Provisions of this section apply to work of all Division 23 sections.
- C. Review all other contract documents to be aware of conditions affecting work herein.
- D. Definitions:
 - 1. Provide: Furnish and install, complete and ready for intended use.
 - 2. Furnish: Supply and deliver to project site, ready for subsequent requirements.
 - 3. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.

1.3 Permits and Fees: Contractor shall obtain all necessary permits, meters, and inspections required for his work and pay all fees and charges incidental thereto.

1.4 Verification of Owner's Data: Prior to commencing any work the Contractor shall satisfy himself as to the accuracy of all data as indicated in these plans and specifications and/or as provided by the Owner. Should the Contractor discover any inaccuracies, errors, or omissions in the data, he shall immediately notify the Architect/Engineer in order that proper adjustments can be anticipated and ordered. Commencement by the Contractor of any work shall be held as an acceptance of the data by him after which time the Contractor has no claim against the Owner resulting from alleged errors, omissions, or inaccuracies of the said data.

1.5 Delivery and Storage of Materials: Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. All material shall be stored to provide protection from the weather and accidental damage.

1.6 Extent of work is indicated by the drawings, schedules, and the requirements of the specifications. Singular references shall not be construed as requiring only one device if multiple devices are shown on the drawings or are required for proper system operation.

1.7 Field Measurements and Coordination:

- A. The intent of the drawings and specifications is to obtain a complete and satisfactory installation. Separate divisional drawings and specifications shall not relieve the Contractor or subcontractors from full compliance of work of his trade indicated on any of the drawings or in any section of the specifications.
- B. Verify all field dimensions and locations of equipment to ensure close, neat fit with other trades' work. Make use of all contract documents and approved shop drawings to verify exact dimension and locations.
- C. Coordinate work in this division with all other trades in proper sequence to ensure that the total work is completed within contract time schedule and with a minimum cutting and patching.
- D. Locate all apparatus symmetrical with architectural elements. Install to exact height and locations when shown on architectural drawings. When locations are shown only on mechanical drawings, be guided by architectural details and conditions existing at job and correlate this work with that of others.

- E. Install work as required to fit structure, avoid obstructions, and retain clearance, headroom, openings, and passageways. Cut no structural members without written approval.
- F. Carefully examine any existing conditions, piping, and premises. Compare drawings with existing conditions. Report any observed discrepancies. It shall be the Contractor's responsibility to properly coordinate the work and to identify problems in a timely manner. Written instructions will be issued to resolve discrepancies.
- G. Because of the small scale of the drawings, it is not possible to indicate all offsets and fittings or to locate every accessory. Drawings are essentially diagrammatic. Study carefully the sizes and locations of structural members, wall and partition locations, trusses, and room dimensions and take actual measurements on the job. Locate piping, ductwork, equipment, and accessories with sufficient space for installing and servicing. Contractor is responsible for accuracy of his measurements and for coordination with all trades. Contractor shall not order materials or perform work without such verification. No extra compensation will be allowed because field measurements vary from the dimensions on the drawings. If field measurements show that equipment or piping cannot be fitted, the Architect/Engineer shall be consulted. Remove and relocate, without additional compensation, any item that is installed and is later found to encroach on space assigned to another use.

1.8 Guarantee:

- A. The Contractor shall guarantee labor, materials, and equipment for a period of one (1) year from Substantial Completion, or from Owner's occupancy, whichever is earlier. Contractor shall make good any defects and shall include all necessary adjustments to and replacement of defective items without expense to the Owner.
- B. Owner reserves right to make emergency repairs as required to keep equipment in operation without voiding Contractor's Guarantee Bond nor relieving Contractor of his responsibilities during guarantee period.

1.9 Approval Submittals:

- A. When approved, the submittal control log and submittals shall be an addition to the specifications herewith, and shall be of equal force in that no deviation will be permitted except with the approval of the Architect/Engineer.
 - 1. Shop drawings, product literature, and other approval submittals will only be reviewed if they are submitted in full accordance with the General and Supplementary Conditions and the following.
 - a. Submittals shall be properly organized in accordance with the approved submittal control log.
 - b. Submittals shall not include items from more than one specification section in the same submittal package unless approved in the submittal control log.
 - c. Submittals shall be properly identified by a cover sheet showing the project name, Architect and Engineer names, submittal control number, specification section, a list of products or item names with model numbers in the order they appear in the package, and spaces for approval stamps. A sample cover sheet is included at the end of this section.
 - d. Submittals shall have been reviewed and approved by the Builder. Evidence of this review and approval shall be an "Approved" stamp with a signature and date on the cover sheet.
 - e. Submittals that include a series of fixtures or devices (such as valves) shall be organized by valve type and be marked accordingly.

- B. If the shop drawings show variation from the requirements of contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variation in writing in his letter of transmittal and on the submittal cover sheet in order that, if acceptable, Contractor will not be relieved of the responsibility for executing the work in accordance with the contract.
 - C. Review of shop drawings, product literature, catalog data, or schedules shall not relieve the Contractor from responsibility for deviations from contract drawings or specifications, unless he has in writing called to the attention of the Architect/Engineer each such deviation in writing at the time of submission, nor shall it relieve him from responsibility for errors of any sort in shop drawings, product literature, catalog data, or schedules. Any feature or function specified but not mentioned in the submittal shall be assumed to be included per the specification.
 - D. Submit shop drawings as called for in other sections after award of the contract and before any material is ordered or fabricated. Shop drawings shall consist of plans, sections, elevations, and details to scale (not smaller than 1/4" per foot), with dimensions clearly showing the installation. Direct copies of small scale project drawings issued to the Contractor are not acceptable. Drawings shall take into account equipment furnished under other sections and shall show space allotted for it. Include construction details and materials.
- 1.10 Test Reports and Verification Submittals: Submit test reports, certifications, and verification letters as called for in other sections. Contractor shall coordinate the required testing and documentation of system performance such that sufficient time exists to prepare the reports, submit the reports, review the reports, and take corrective action within the scheduled contract time.
- 1.11 O&M Data Submittals: Submit Operation and Maintenance (O&M) data as called for in other sections. When a copy of approval submittals is included in the O&M Manual, only the final "Approved" or "Approved as Noted" copy shall be used. Contractor shall organize these data in the O&M Manuals tabbed by specification number. Prepare O&M Manuals as required and as described herein. Submit manuals at the Substantial Completion inspection.

PART 2 - PRODUCTS

- 2.1 All materials shall be new or Owner-supplied reused as shown on the drawings, the best of their respective kinds, suitable for the conditions and duties imposed on them at the building and shall be of reputable manufacturers. The description, characteristics, and requirements of materials to be used shall be in accordance with qualifying conditions established in the following sections.
- 2.2 Equipment and Materials:
- A. Shall be new and the most suitable grade for the purpose intended. Equipment furnished under this division shall be the product of a manufacturer regularly engaged in the manufacture of such items for a period of three years. Where practical, all of the components shall be products of a single manufacturer in order to provide proper coordination and responsibility. Where required, Contractor shall furnish proof of installation of similar units or equipment.
 - B. The label of the approving agency, such as UL, IBR, ASME, ARI, AMCA, by which a standard has been established for the particular item shall be in full view.
 - C. The equipment shall be essentially the standard product of a manufacturer regularly engaged in the production of such equipment and shall be a product of the manufacturer's latest design.

- D. A service organization with personnel and spare parts shall be available within two hours for each type of equipment furnished.
- E. Install in accordance with manufacturer's recommendations. Place in service by a factory trained representative where required.
- F. Materials and equipment are specified herein by a single or by multiple manufacturers to indicate quality, material, and type of construction desired. Manufacturer's products shown on the drawings have been used as basis for design; it shall be the Contractor's responsibility to ascertain that alternate manufacturer's products, or the particular products of named manufacturers, meet the detailed specifications and that size and arrangement of equipment are suitable for installation.
- G. Model Numbers: Catalog numbers and model numbers indicated in the drawings and specifications are used as a guide in the selection of the equipment and are only listed for the contractor's convenience. The contractor shall determine the actual model numbers for ordering materials in accordance with the written description of each item and with the intent of the drawings and specifications.

2.3 Requests for Substitution:

- A. Where a particular system, product, or material is specified by name, consider it as standard basis for bidding, and base proposal on the particular system, product, or material specified.
- B. Requests by Contractor for substitution will be considered only when reasonable, timely, fully documented, and qualifying under one or more of the following circumstances:
 - 1. Required product cannot be supplied in time for compliance with Contract time requirements.
 - 2. Required product is not acceptable to governing authority, or determined to be non-compatible, or cannot be properly coordinated, warranted, or insured, or has other recognized disability as certified by Contractor.
 - 3. Substantial cost advantage is offered Owner after deducting offsetting disadvantages including delays, additional compensation for redesign, investigation, evaluation, and other necessary services and similar considerations.
- C. All requests for substitution shall contain a "Comparison Schedule" and clearly and specifically indicate any and all differences or omissions between the product specified as the basis of design and the product proposed for substitution. Differences shall include but shall not be limited to data as follows for both the specified and substituted products:
 - 1. Principal of operation.
 - 2. Materials of construction or finishes.
 - 3. Thickness of gauge of materials.
 - 4. Weight of item.
 - 5. Deleted features or items.
 - 6. Added features or items.
 - 7. Changes in other work caused by the substitution.
 - 8. Performance curves.
 - 9. If the approved substitution contains differences or omissions not specifically called to the attention of the Architect/Engineer, the Owner reserves the right to require equal or similar features to be added to the substituted products (or to have the substituted products replaced) at the Contractor's expense.

PART 3 - EXECUTION

- 3.1 Workmanship: All materials and equipment shall be installed and completed in a first-class workmanlike manner and in accordance with the best modern methods and practice. Any materials installed which do not present an orderly and reasonably neat and/or workmanlike appearance, or do not allow adequate space for maintenance, shall be removed and replaced when so directed by the Architect/Engineer.
- 3.2 Coordination:
- A. The Contractor shall be responsible for full coordination of the mechanical systems with shop drawings of the building construction so the proper openings and sleeves or supports are provided for piping or other equipment passing through slabs or walls.
 - B. Any additional steel supports required for the installation of piping shall be furnished and installed under the section of the specifications requiring the additional supports.
 - C. It shall be the Contractor's responsibility to see that all equipment such as valves, dampers, filters, and such other apparatus or equipment that may require maintenance and operation are made easily accessible, regardless of the diagrammatic location shown on the drawings.
 - D. All connections to fixtures and equipment shown on the drawings shall be considered diagrammatic unless otherwise indicated by detail. The actual connections shall be made to fully suit the requirements of each case and adequately provide for expansion and servicing.
 - E. The contractor shall protect equipment, material, and fixtures at all times. He shall replace all equipment, material, and fixtures which are damaged as a result of inadequate protection.
 - F. Prior to starting and during progress of work, examine work and materials installed by others as they apply to work in this division. Report conditions which will prevent satisfactory installation.
- 3.3 Start of work will be construed as acceptance of suitability of work of others.
- 3.4 Interruption of Service: Before any equipment is shut down for disconnecting or tie-ins, arrangements shall be made with the Engineer and this work shall be done at the time best suited to the Owner. This will typically be on weekends and/or holidays and/or after normal working hours. Services shall be restored the same day unless prior arrangements are made. All overtime or premium costs associated with this work shall be included in the base bid.
- 3.5 Phasing: Provide all required temporary valves, piping, and devices as required. Maintain temporary services to areas as required. Remove all temporary material and equipment on completion of work unless Engineer concurs that such material and equipment would be beneficial to the Owner on a permanent basis.
- 3.6 Cutting and Patching: Notify Builder to do all cutting and patching of all holes, chases, sleeves, and other openings required for installation of equipment furnished and installed under this section. Utilize experienced trades for cutting and patching. Obtain permission from Architect/Engineer before cutting any structural items.
- 3.7 Painting: Touch-up factory finishes on equipment located inside and outside shall be done under Division 23. Obtain matched color coatings from the manufacturer and apply as directed. If corrosion is found during inspection on the surface of any equipment, clean, prime, and paint, as required.
- 3.8 Clean-up: Thoroughly clean all exposed parts of apparatus and equipment of cement, plaster, and other materials, and remove all oil and grease spots. Repaint or touch up as required to look like new. During progress of work, contractor is to carefully clean

- up and leave premises and all portions of building free from debris and in a clean and safe condition.
- 3.9 Climate Control: Operate heating and cooling systems as required after initial startup to maintain temperature and humidity conditions to avoid freeze damage and warping or sagging of ceilings and carpet.
- 3.10 Record Drawings:
- A. During the progress of the work the Contractor shall record on their field set of drawings the exact location, as installed, of all piping, ductwork, equipment, and other systems which are not installed exactly as shown on the contract drawings.
 - B. Upon completion of the work, record drawings shall be prepared as described in the General Conditions and Supplementary Conditions.
- 3.11 Acceptance:
- A. Punch List: Submit written confirmation that all punch lists have been checked and the required work completed.
 - B. Instructions: At completion of the work, provide a competent and experienced person who is thoroughly familiar with project, for one day to instruct permanent operating personnel in operation of equipment and control systems. This is in addition to any specific equipment operation and maintenance training.
 - C. Operation and Maintenance Manuals: Furnish four complete manuals bound in ring binders with Table of Contents, organized, and tabbed by specification section. Manuals shall contain:
 - 1. Detailed operating instructions and instructions for making minor adjustments.
 - 2. Complete wiring and control diagrams.
 - 3. Routine maintenance operations.
 - 4. Manufacturer's catalog data, service instructions, and parts lists for each piece of operating equipment.
 - 5. Copies of approved submittals.
 - 6. Copies of all manufacturer's warranties.
 - 7. Copies of test reports and verification submittals.
 - D. Record Drawings: Submit record drawings.
 - E. Test and Balance Report: Submit four electronic certified copies. The Report shall be submitted for review prior to the Substantial Completion Inspection.
 - F. Acceptance will be made on the basis of tests and inspections of job. A representative of firm that performed test and balance work shall be in attendance to assist. Contractor shall furnish necessary mechanics to operate system, make any necessary adjustments and assist with final inspection.

PROJECT NAME
PROJECT NUMBER

ARCHITECT: Company Name

ENGINEER: Mitchell Gulledge Engineering

CONTRACTOR: Contractor Name

SUBCONTRACTOR: Sub Name

SUPPLIER: Supply Company

MANUFACTURER: Manufacturer

DATE: mm/dd/yyyy

SECTION: 23 XX XX/Section Name

1. Product 1: Manufacturer, Model

2. Product 2: Manufacturer, Model

3. Product 3: Manufacturer, Model

4. Product 4: Manufacturer, Model

5. Product 5: Manufacturer, Model

SAMPLE

Any standard heading is acceptable.

List each product individually. Include manufacturer name and model.

**Include GC or CM
Approval stamp indicating
review and acceptance by
responsible contractor.**

END OF SECTION

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PART 1 - GENERAL

- 1.1 The work covered by this division consists of providing all labor, equipment, and materials and performing all operations necessary for the installation of the mechanical work as herein called for and shown on the drawings.
- 1.2 This is a Basic Mechanical Requirements section. Provisions of this section apply to work of all Division 23 sections.

PART 2 - CODES

- 2.1 All work under Division 23 shall be constructed in accordance with the codes listed herein. The design has been based on the requirements of these codes; and while it is not the responsibility of the Contractor to verify that all work called for complies with these codes, he shall be responsible for calling to the Architect/Engineer's attention any drawings or specifications that are not in conformance with these or other codes prior to ordering equipment or installing work.
- 2.2 Comply with regulations and codes of utility suppliers.
- 2.3 Where no specific method or form of construction is called for in the contract documents, the Contractor shall comply with code requirements when carrying out such work.
- 2.4 Where code conflict exists, generally the most restrictive requirement applies. Comply with current code edition, unless noted.
- 2.5 Additional codes or standards applying to a specific part of the work may be included in that section.
- 2.6 The following codes and standards shall govern all work:
 - A. Florida Building Code – Sixth Edition (2017)
 - B. Florida Building Code – Sixth Edition (2017) – Existing Building
 - C. Florida Building Code – Sixth Edition (2017) – Energy Conservation
 - D. Florida Building Code – Sixth Edition (2017) – Mechanical
 - E. Standard for Air Conditioning and Ventilating Systems (NFPA 90A – 2012)
 - F. University of Florida Construction Standards
 - G. Florida Fire Prevention Code Sixth Edition
 1. Fire Code (NFPA 1 – 2017)
 2. Life Safety Code (NFPA 101 – 2017)

PART 3 - STANDARDS

All mechanical materials, installation, and systems shall meet the requirements of the following standards, including the latest addenda and amendments, to the extent referenced:

- 3.1 Underwriters' Laboratories (UL)
- 3.2 American National Standards Institution (ANSI)
- 3.3 American Society of Testing Materials (ASTM)
- 3.4 Air Conditioning and Refrigeration Institute (ARI)
- 3.5 American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)

END OF SECTION

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PART 1 - GENERAL

- 1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- 1.2 This section is a Division-23 Basic Mechanical Materials and Methods section, and is part of each Division-23 section making reference to or requiring identification devices specified herein.
- 1.3 Extent of mechanical identification work required by this section is indicated on drawings and/or specified in other Division-23 sections.
- 1.4 Refer to Division-26 sections for identification requirements of electrical work; not work of this section. Refer to other Division-23 sections for identification requirements for controls; not work of this section.
- 1.5 Codes and Standards: Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.

PART 2 - PRODUCTS

- 2.1 General: Provide manufacturer's standard products of categories and types required for each application as referenced in other Division-23 sections. Where more than single type is specified for application, selection is Installer's option, but provide single selection for each product category.
- 2.2 Painted Identification Materials:
 - A. Stencils: Standard fiberboard stencils, prepared for required applications with letter sizes generally complying with recommendations of ANSI A13.1 for piping and similar applications, but not less than 1-1/4" high letters for ductwork and not less than 3/4" high letters for access door signs and similar operational instructions.
 - B. Stencil Paint: Standard exterior type stenciling enamel; black, except as otherwise indicated; either brushing grade or pressurized spray-can form and grade.
 - C. Identification Paint: Standard identification enamel.
 - D. Plastic Pipe Markers.
 - E. Lettering: Manufacturer's standard pre-printed nomenclature which best describes piping system in each instance, as selected by Architect/Engineer in cases of variance with name as shown or specified.
 - F. Arrows: Print each pipe marker with arrows indicating direction of flow, either integrally with piping system service lettering (to accommodate both directions), or as separate unit of plastic.
- 2.3 Valve Tags:
 - A. Brass Valve Tags: Provide 19-gage polished brass valve tags with stamp-engraved piping system abbreviation in 1/4" high letters and sequenced valve numbers 1/2" high, and with 5/32" hole for fastener. Provide 1-1/2" diameter tags, except as otherwise indicated.
 - B. Plastic Laminate Valve Tags: Provide manufacturer's standard 3/32" thick engraved plastic laminate valve tags, with piping system abbreviation in 1/4" high letters and sequenced valve numbers 1/2" high, and with 5/32" hole for fastener. Provide 1-1/2" square black tags with white lettering, except as otherwise indicated.

PART 3 - EXECUTION

- 3.1 Coordination: Where identification is to be applied to surfaces which require insulation, painting or other covering or finish, including valve tags in finished mechanical spaces, install identification after completion of covering and painting.

Install identification prior to installation of acoustical ceilings and similar removable concealment.

3.2 Piping System Identification:

- A. General: Install pipe markers of one of the following types on each system indicated to receive identification, and include arrows to show normal direction of flow:
- B. Plastic pipe markers.
- C. Stenciled markers, black or white for best contrast.
- D. Locate pipe markers as follows wherever piping is exposed to view in occupied spaces, machine rooms, accessible maintenance spaces and exterior non-concealed locations.
- E. Near each valve and control device.
- F. Near each branch, excluding short take-offs for fixtures and terminal units; mark each pipe at branch, where there could be question of flow pattern.
- G. Near locations where pipes pass through walls, floors, ceilings, or enter non-accessible enclosures.
- H. At access doors, manholes and similar access points which permit view of concealed piping.
- I. Near major equipment items and other points of origination and termination.
- J. Spaced intermediately at maximum spacing of 50' along each piping run, except reduce spacing to 25' in congested areas of piping and equipment.
- K. On piping above removable acoustical ceilings, except omit intermediately spaced markers.

3.3 Valve Identification: Provide coded valve tag on every valve, cock, and control device in each piping system; exclude check valves, valves within factory-fabricated equipment units, plumbing fixture faucets, convenience and lawn-watering hose bibs, and shut-off valves at plumbing fixtures, HVAC terminal devices and similar rough-in connections of end-use fixtures and units. Coordinate code with operating instructions.

3.4 Valve Charts: Provide framed, glass covered valve charts in each mechanical room. Identify coded valve number, valve function, and valve location for each valve.

END OF SECTION

PART 1 - GENERAL

1.1 Related Documents:

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

1.2 Description of Work:

- A. Extent of meters and gauges required by this Section is indicated on drawings and/or specified in other Division 23 sections. Types of meters and gauges specified in this Section include the following:
 - 1. Calibrated Balancing Valves.
 - 2. Gauge Connector Plugs.

1.3 Quality Assurance:

- A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of meters and gauges, of types and sizes required, whose products have been in satisfactory use in similar service for not less than five years.
- B. Comply with ANSI and Instrument Society of America (ISA) standards pertaining to construction and installation of meters and gauges.

1.4 Submittals:

- A. Product Data: Submit manufacturer's technical product data, including installation instructions for each type of meter and gauge. Include scale range, ratings, and calibrated performance curves, certified where indicated. Submit meter and gauge schedule showing manufacturer's figure number, scale range, location, and accessories for each meter and gauge.

PART 2 - PRODUCTS

2.1 Temperature or Pressure Gauge Connector Plugs:

- A. General: Provide temperature gauge connector plugs rated for 500 psi and 200°F (93°C). Construct of brass and finish in nickel-plate, equip with 1/2" NPS fitting, with self-sealing valve core type neoprene gasketed orifice suitable for inserting 1/8" O.D. probe assembly from dial type insertion thermometer. Equip orifice with gasketed screw cap and chain. Provide extension, length equal to insulation thickness, for insulated piping.
- B. Acceptable manufacturers include Peterson Equipment Co.

2.2 Calibrated Balancing Valves:

- A. Provide as indicated, calibrated balance valves equipped with readout valves to facilitate connecting of differential pressure meter to balance valves. Each readout valve shall have an integral EPT check valve designed to minimize system fluid loss during monitoring process. Provide calibrated nameplate to indicate degree of closure of precision machined orifice. Construct balancing valve with internal EPT o-ring seal to prevent leakage around rotating element. Provide balance valves with pre-formed polyurethane insulation suitable for use on both heating and cooling systems. Acceptable manufacturers include Bell & Gossett, Taco, and Trush products.

PART 3 - EXECUTION

3.1 Inspection:

- A. Examine areas and conditions under which meters and gauges are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to the Installer.

3.2 Installation:

- A. Install gauge connector plugs in piping tees where indicated, located on pipe at most readable position. Secure cap.

END OF SECTION

PART 1 - GENERAL

- 1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to the work of this section.
- 1.2 This section is a Division-23 Basic Materials and Methods section, and is part of each Division-23 section making reference to or requiring valves specified herein.
- 1.3 Extent of valves required by this section is indicated on drawings and/or specified in other Division-23 sections.
- 1.4 Quality Assurance:
 - A. Valve Dimensions: For face-to-face and end-to-end dimensions of flanged or welding-end valve bodies, comply with ANSI B16.10.
 - B. Valve Types: Provide valves of same type by same manufacturer.
- 1.5 Approval Submittals: When required by other Division-23 sections, submit product data, catalog cuts, specifications, and dimensioned drawings for each type of valve. Include pressure drop curve or chart for each type and size of valve.
 - A. Ball Valves: Type BA.
 - B. Butterfly Valves: Type BF.
- 1.6 O&M Data Submittals:
 - 1. Submit maintenance data and a copy of approval submittals.

PART 2 - PRODUCTS

- 2.1 General: Provide factory-fabricated valves recommended by manufacturer for use in service indicated. Provide valves of types and pressure ratings indicated; provide proper selection as determined by Installer to comply with specifications and installation requirements. Provide sizes as indicated, and connections which properly mate with pipe, tube, and equipment connections.
- 2.2 Acceptable Manufacturers: Subject to compliance with requirements, provide valves of one of the producers listed for each valve type. The model numbers are listed for contractor's convenience only. In the case of a model number discrepancy, the written description shall govern.
- 2.3 Ball Valves:
 - A. General: Select with port area equal to or greater than connecting pipe area, include seat ring designed to hold sealing material.
 - B. Construction: Ball valves shall be rated for 150 psi saturated steam and 600 psi non-shock cold water. Pressure containing parts shall be constructed of ASTM B-584 alloy 844, or ASTM B-124 alloy 377. Valves shall be furnished with blow-out proof bottom loaded stem constructed of ASTM B-371 alloy 694 or other approved low zinc material. Provide TFE packing, TFE thrust washer, chrome-plated ball and reinforced teflon seats. Valves 1" and smaller shall be full port design. Valves 1-1/4" and larger shall be conventional port design. Stem extensions shall be furnished for use in insulated piping where insulation exceeds 1/2" thickness.
 - C. Comply with the following standards:
 - 1. MSS SP-110. Ball Valves Threaded, Solder Joint, Grooved and Flared Ends.
 - D. Types of ball (BA) valves:
 - 1. Threaded Ends 2" and Smaller (BA1): Bronze two-piece full port body with adjustable stem packing. Nibco T-585-70. Stockham S216-BR-R-T. Milwaukee BA125. Apollo 77-100.

2. Soldered Ends 2" and Smaller (BA2): Bronze three-piece full port body with adjustable stem packing. Nibco S-595-Y-66. Milwaukee BA350. Apollo 82-200.

2.4 Butterfly Valves:

- A. General: Comply with MSS SP-67, Butterfly Valves. Provide butterfly valves designed for tight shut-off. Where used for terminal or equipment removal or repair, select lug type valves. Select wafer type valves for other applications. Provide gear operators on all butterfly valves 6" and larger.
- B. Types of butterfly (BF) valves:
 1. Wafer Type 2-1/2" and Larger (BF1): 200 CWP, cast-iron body, lever-operated, cadmium-plated ductile iron disc, Type 410 stainless steel stem, EPT seat. Stockham LG-512. Nibco WD 2110-3. Crane 42-FXB-TL. Milwaukee MW222E-8416.
 2. Lug Type 2-1/2" and Larger (BF2): 200 CWP, cast-iron body, lever-operated, cadmium-plated ductile iron disc, Type 410 stainless steel stem, EPT seat. Stockham LG-712. Nibco LD 2110-3. Crane 44-FXB-TL. Milwaukee ML132B-8416.

2.5 Valve Features:

- A. General: Provide valves with features indicated and, where not otherwise indicated, provide proper valve features as determined by Installer for installation requirements. Comply with ANSI B31.1.
- B. Valve features specified or required shall comply with the following:
 1. Bypass: Comply with MSS SP-45, and except as otherwise indicated, provide manufacturer's standard bypass piping and valving. Provide for gate valves 8" and larger.
 2. Drain: Comply with MSS SP-45, and provide threaded pipe plugs complying with applicable Division-23 pipe or tube section. Provide for gate valves 8" and larger.
 3. Flanged: Provide valve flanges complying with ANSI B16.1 (cast iron), ANSI B16.5 (steel), or ANSI B16.24 (bronze).
 4. Threaded: Provide valve ends complying with ANSI B2.1.
 5. Solder-Joint: Provide valve ends complying with ANSI B16.18.
 6. Trim: Fabricate pressure-containing components of valve, including stems (shafts) and seats from brass or bronze materials, of standard alloy recognized in valve manufacturing industry unless otherwise specified.
 7. Non-Metallic Disc: Provide non-metallic material selected for service indicated in accordance with manufacturer's published literature.
 8. Renewable Seat: Design seat of valve with removable disc, and assemble valve so disc can be replaced when worn.
 9. Extended Stem: Increase stem length by 2" minimum, to accommodate insulation applied over valve.

PART 3 - EXECUTION

3.1 Installation:

- A. General: Install valves where required for proper operation of piping and equipment, including valves in branch lines to isolate sections of piping. Locate valves so as to be accessible and so that separate support can be provided when necessary. Install valves with stems pointed up, in vertical position where possible, but in no case with stems pointed downward below horizontal plane.

- B. Insulation: Where insulation is indicated, install extended-stem valves, arranged in proper manner to receive insulation.
 - C. Applications Subject to Corrosion: Do not install bronze valves and valve components in direct contact with steel, unless bronze and steel are separated by dielectric insulator.
 - D. Mechanical Actuators: Install mechanical actuators as recommended by valve manufacturer.
- 3.2 Selection of Valve Ends (Pipe Connections): Except as otherwise indicated, select and install valves with the following ends or types of pipe/tube connections:
- A. Tube Size 2" and Smaller: Threaded valves or soldered-joint valves may also be used.
 - B. Pipe Size 2-1/2" and Larger: Flanged valves.
- 3.3 Non-Metallic Disc: Limit selection and installation of valves with non-metallic disc to locations indicated and where foreign material in piping system can be expected to prevent tight shutoff of metal seated valves.
- 3.4 Renewable Seats: Select and install valves with renewable seats, except where otherwise indicated.

END OF SECTION

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PART 1 - GENERAL

- 1.1 Drawings and general provisions of Contract, including General Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- 1.2 This section is a Division-23 Basic Materials and Methods section, and is a part of each Division-23 section making reference to or requiring supports, anchors, and seals specified herein.
- 1.3 Extent of supports, anchors, and seals required by this section is indicated on drawings and/or specified in other Division-23 sections.
- 1.4 Code Compliance: Comply with applicable codes pertaining to product materials and installation of supports, anchors, and seals.
- 1.5 MSS Standard Compliance:
 - A. Provide pipe hangers and supports of which materials, design, and manufacture comply with ANSI/MSS SP-58.
 - B. Select and apply pipe hangers and supports, complying with MSS SP-69.
 - C. Fabricate and install pipe hangers and supports, complying with MSS SP-89.
 - D. Terminology used in this section is defined in MSS SP-90.
- 1.6 UL Compliance: Provide products which are Underwriters Laboratories listed.

PART 2 - PRODUCTS

- 2.1 Acceptable Manufacturers: Subject to compliance with requirements, provide supports and hangers by Grinnel, Michigan Hanger Company, B-Line Systems, or approved equal.
- 2.2 Horizontal-Piping Hangers and Supports: Except as otherwise indicated, provide factory-fabricated horizontal-piping hangers and supports complying with ANSI/MSS SP-58, of one of the following MSS types listed, selected by Installer to suit horizontal-piping systems, in accordance with MSS SP-69 and manufacturer's published product information. Use only one type by one manufacturer for each piping service. Select size of hangers and supports to exactly fit pipe size for bare piping, and to exactly fit around piping insulation with saddle or shield for insulated piping. Provide copper-plated hangers and supports for copper-piping systems.
 - A. Adjustable Steel Clevises: MSS Type 1.
 - B. Steel Double Bolt Pipe Clamps: MSS Type 3.
 - C. Adjustable Steel Band Hangers: MSS Type 7.
 - D. Steel Pipe Clamps: MSS Type 4.
- 2.3 Vertical-Piping Clamps: Except as otherwise indicated, provide factory-fabricated vertical-piping clamps complying with ANSI/MSS SP-58, of one of the following MSS types listed, selected by Installer to suit vertical piping systems, in accordance with MSS SP-69 and manufacturer's published product information. Select size of vertical piping clamps to exactly fit pipe size of bare pipe. Provide copper-plated clamps for copper-piping systems.
 - A. Two-Bolt Riser Clamps: MSS Type 8.
 - B. Four-Bolt Riser Clamps: MSS Type 42.
- 2.4 Hanger-Rod Attachments: Except as otherwise indicated, provide factory-fabricated hanger-rod attachments complying with ANSI/MSS SP-58, of one of the following MSS types listed, selected by Installer to suit horizontal-piping hangers and building attachments, in accordance with MSS SP-69 and manufacturer's published product information. Use only one type by one manufacturer for each piping service. Select

size of hanger-rod attachments to suit hanger rods. Provide copper-plated hanger-rod attachments for copper-piping systems.

- A. Steel Turnbuckles: MSS Type 13.
- B. Malleable Iron Sockets: MSS Type 16.

2.5 Building Attachments: Except as otherwise indicated, provide factory-fabricated building attachments complying with ANSI/MSS SP-58, of one of the following MSS types listed, selected by Installer to suit building substrate conditions, in accordance with MSS SP-69 and manufacturer's published product information. Select size of building attachments to suit hanger rods.

- A. Center Beam Clamps: MSS Type 21.
- B. C-Clamps: MSS Type 23.
- C. Malleable Beam Clamps: MSS Type 30.
- D. Side Beam Brackets: MSS Type 34.
- E. Concrete Inserts: MSS Type 18.

2.6 Saddles and Shields: Except as otherwise indicated, provide saddles or shields under piping hangers and supports, factory-fabricated, for all insulated piping. Size saddles and shields for exact fit to mate with pipe insulation.

- A. Protection Shields: MSS Type 40; of length recommended by manufacturer to prevent crushing of insulation.
- B. Protection Saddles: MSS Type 39; use with rollers, fill interior voids with segments of insulation matching adjoining insulation.

2.7 Miscellaneous Materials:

- A. Metal Framing: Provide products complying with NEMA STD ML 1.
- B. Steel Plates, Shapes, and Bars: Provide products complying with ANSI/ASTM A 36.
- C. Cement Grout: Portland cement (ANSI/ASTM C 150, Type I or Type III) and clean uniformly graded, natural sand (ANSI/ASTM C 404, Size No. 2). Mix at a ratio of 1.0 part cement to 3.0 parts sand, by volume, with minimum amount of water required for placement and hydration.
- D. Heavy-Duty Steel Trapezes: Fabricate from steel shapes or continuous channel struts selected for loads required; weld steel in accordance with AWS standards.

PART 3 - EXECUTION

3.1 Preparation:

- A. Proceed with installation of hangers, supports, and anchors only after required building structural work has been completed in areas where the work is to be installed. Correct inadequacies including (but not limited to) proper placement of inserts, anchors, and other building structural attachments.
- B. Prior to installation of hangers, supports, anchors, and associated work, Installer shall meet at project site with Contractor, installer of each component of associated work, and installers of other work requiring coordination with work of this section for purpose of reviewing material selections and procedures to be followed in performing the work in compliance with requirements specified.

3.2 Installation of Building Attachments:

- A. areas of work requiring attachments to existing concrete, use self-drilling rod inserts, Phillips Drill Co., "Red-Head", or equal.

3.3 Installation of Hangers and Supports:

- A. General: Install hangers, supports, clamps, and attachments to support piping properly from building structure; comply with MSS SP-69. Arrange for grouping of parallel runs of horizontal piping to be supported together on trapeze type hangers where possible. Install supports with maximum spacings complying with MSS SP-69 or as listed herein, whichever is most limiting. Where piping of various sizes is to be supported together by trapeze hangers, space hangers for smallest pipe size or install intermediate supports for smaller diameter pipe. Do not use wire or perforated metal to support piping, and do not support piping from other piping.

Horizontal steel pipe and copper tube 1-1/2" diameter and smaller: support on 6 foot centers.

1. Horizontal steel pipe and copper tube over 1-1/2" diameter: support on 10 foot centers.
 2. Vertical steel pipe and copper tube: support at each floor.
- B. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.
- C. Paint all black steel hangers with black enamel. Galvanized steel and copper clad hangers do not require paint.
- D. Prevent electrolysis in support of copper tubing by use of hangers and supports which are copper plated, or by other recognized industry methods.
- E. Provision for Movement:
1. Install hangers and supports to allow controlled movement of piping systems and to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
 2. Load Distribution: Install hangers and supports so that piping live and dead loading and stresses from movement will not be transmitted to connected equipment.
- F. Insulated Piping: Comply with the following installation requirements.
1. Shields: Where low-compressive-strength insulation or vapor barriers are indicated, install coated protective shields.
 2. Clamps: Attach clamps, including spacers (if any), to piping with clamps projecting through insulation; do not exceed pipe stresses allowed by ANSI B31.

END OF SECTION

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PART 1 - GENERAL

1.1 Related Documents:

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

1.2 Description of Work:

- A. Extent of work required by this Section is indicated on drawings and/or specified in other Division 23 sections. Types of vibration isolation specified in this Section include equipment support isolators, equipment bases, resilient lateral guides, and flexible pipe connectors.

1.3 Quality Assurance:

- A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of vibration isolation, of types and sizes required, whose products have been in satisfactory use in similar service for not less than five years.
- B. Comply with ASME B31 Series - Code for pressure piping.
- C. All metallic components installed outdoors shall be hot dipped galvanized after fabrication.
- D. All equipment provided under this division shall operate under all conditions of load, free of objectionable sound and vibration. Sound and vibration conditions considered objectionable by the Engineer shall be corrected in an approved manner.

1.4 Submittals:

- A. Product Data: Submit manufacturer's technical product data, including dimensions, supported loads, static deflections, isolator size, and type for each item of supported equipment for each of the following required types:
 - 1. Pipe flexible connectors, Type PF.

1.5 O&M Data Submittals:

- A. Submit maintenance data and a copy of approval submittals.

PART 2 - PRODUCTS

2.1 Acceptable Manufacturers:

- A. All vibration isolation materials and systems shall be supplied by a single, approved manufacturer. Acceptable suppliers are VMC Amber/Booth Co., Vibro-Acoustics Inc., Kinetics Noise Control, Inc., Metraflex, Inc, Mason Industries, Inc. (MI), Wheatley.

2.2 Flexible Pipe Connectors:

- A. Coil Connections (PF3): Stainless Steel Flexible Hoses (PF5): Provide 300 psi working pressure flexible hoses with corrugated hose body and braided cover. Basis of Design: Mason Industries CPSB-NSF with sweat ends.

PART 3 - EXECUTION

3.1 Application:

- A. Isolate new work from existing equipment.
- B. Vibration isolation devices shall be installed for all piping recommended by the manufacturer at the vibration products, and in accordance with recognized industry standards.

3.2 Installation:

- A. Location of all vibration isolation equipment shall be selected for ease of inspection and adjustment as well as for proper operation. Installation of vibration isolation equipment shall be in accordance with the manufacturer's written instructions.
- B. Sealed resilient penetration sleeves shall maintain an airtight seal around the penetrating element and shall prevent rigid contact of the penetrating element and the building structure.
- C. All vibration isolators shall be aligned squarely above or below mounting points of the supported equipment. Hanger rods for vibration isolated support shall be connected to structural beams or joists, not from the floor slab between beams and joist. Provide intermediate support members as necessary.
- D. Vibration isolation hanger elements shall be positioned so that the hanger housing may rotate a full 360 degrees about the rod axis without contacting the building structure or any object.
- E. No pipes shall be supported from other pipes or equipment. Resiliently isolated pipes shall not contact any rigid building structure or equipment.
- F. No equipment unit shall bear directly on vibration isolators unless its own frame is suitably rigid to span between isolators and such direct support is approved by the equipment manufacturer. In the case that a base frame is required for the unit because of the equipment manufacturer's requirements and is not specifically called for on the equipment schedule, a base frame recommended by the equipment manufacturer shall be provided at no additional expense.

END OF SECTION

PART 1 - GENERAL

- 1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- 1.2 Division-23 Basic Mechanical Materials Sections apply to work of this section.
- 1.3 Description of Work:
 - A. Extent of testing, adjusting, and balancing work (TAB) is indicated by requirements of this section, and also by drawings and schedules, and is defined to include, but is not necessarily limited to, air distribution systems, hydronic distribution systems and associated equipment and apparatus of mechanical work. The work consists of setting speed and volume (flow) adjusting facilities provided for systems, recording data, conducting tests, preparing and submitting reports, and recommending modifications to work as required.
 - B. Pretesting: Where required by the drawings or other Division 23 sections, pretest existing HVAC systems as directed and report findings prior to start of demolition work or any other modifications to the existing systems. Results of pretesting shall be reported to the Engineer in a timely manner. Comply with standards for final TAB reports described herein.
 - C. Coordination: Coordinate with the General Contractor and Mechanical Contractor responsible for the HVAC system installation as required to complete the TAB work.
- 1.4 The intent of this specification is to balance HVAC systems within the tolerances listed, maintaining the pressure relationships indicated, with a minimum of noise.
 - A. Airflow Tolerances:
 1. Air Handling: The supply air, return air, and outdoor air quantities shall be balanced within +/-5% of design values.
 2. Terminal Units: The air quantities associated with fan coil units and other similar devices shall be balanced within +/-5% of design values.
 3. Ceiling Diffusers, Supply Registers, Return and Exhaust Inlets: Balance to an air quantity within +/-10% of the design values.
 - B. Temperature Tolerances:
 1. Air Handling Temperatures: The controlled temperatures at AHUs shall be verified to be under control within +/-1°F of design values.
 2. Room Temperatures: Balance systems and controls within +/-2°F of indicated settings.
 - C. Hydronic Flow: Balance hydronic flow rates to within 10% of design values.
- 1.5 Quality Assurance: The TAB Contractor shall be certified as follows:
 - A. Tester: A firm certified by National Environmental Balancing Bureau (NEBB) in those testing and balancing disciplines required for this project, who is not the Installer of the systems to be tested and is otherwise independent of the project. Comply with NEBB's "Procedural Standards for Testing, Adjusting and Balancing of Environmental Systems" as applicable to this work.
 - B. Tester: A firm certified by Associated Air Balance Council (AABC) in those testing and balancing disciplines required for this project. AABC-certified firms are independent by definition. Comply with AABC's Manual MN-1 "AABC National Standards", as applicable to this work.
 - C. Industry Standards: Comply with American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) recommendations pertaining to

measurements, instruments and testing, adjusting and balancing, except as otherwise indicated.

1.6 Job Conditions:

- A. Do not proceed with testing, adjusting, and balancing work until HVAC work (including Controls) has been completed and is operable. Ensure that there is no residual work still to be completed.
- B. Do not proceed until work scheduled for testing, adjusting, and balancing is clean and free from debris, dirt, and discarded building materials.
- C. Do not proceed until architectural work that would affect balancing (walls, ceiling, windows, doors) have been installed.
- D. Testing may proceed system by system, but each HVAC system must be complete as describe herein.
- E. The mechanical contractor shall make any changes in pulleys, belts, and dampers, and/or add dampers as required for correct balancing.

1.7 Approval Submittals:

- A. Submit the name of the proposed test and balance company for the Engineer's approval within thirty (30) days after awarding of contract.

1.8 Test Reports and Verification Submittals:

- A. Submit an electronic copy of the dated test and balance report upon completion of TAB work. The report shall include a list of instruments used for the work. The report shall be signed by the supervisor who performed the TAB work.

PART 2 - PRODUCTS

2.1 Patching Materials: Except as otherwise indicated, use same products as used by original Installer for patching holes in insulation, ductwork, and housings which have been cut or drilled for test purposes, including access for test instruments, attaching jigs, and similar purposes.

2.2 Test Instruments: Utilize test instruments and equipment of the type, precision, and capacity as recommended in the referenced standard. All instruments shall be in good condition and shall have been calibrated within the previous six (6) months (or more recently if required by standard).

PART 3 - EXECUTION

3.1 General:

- A. Examine installed work and conditions under which testing is to be done to ensure that work has been completed, cleaned, and is operable. Do not proceed with TAB work until unsatisfactory conditions have been corrected in manner acceptable to Tester.
- B. Test, adjust, and balance environmental systems and components, as indicated, in accordance with procedures outlined in applicable standards, and as modified or detailed herein.
- C. Test, adjust, and balance systems during summer season for air conditioning systems and during winter season for heating systems, including at least a period of operation at outside conditions within 5°F wet bulb temperature of maximum summer design condition, and within 10°F dry bulb temperature of minimum winter design condition. When seasonal operation does not permit measuring final temperatures, then take final temperature readings when seasonal operation does permit. The Contractor shall

return for a change of seasons test at no additional cost to the Owner and submit the revised TAB report.

- D. Punch List: Prepare a deficiency (punch)list for the Contractor with a copy of the Engineer that lists all items that are incorrectly installed or are functioning improperly. Provide a retest after all items are corrected.
- E. Prepare TAB report of test results, including instrumentation calibration reports, in format recommended by applicable standards, modified as required to include all data listed herein.
- F. Mark equipment settings, including damper control positions, valve indicators, fan speed control levers, and similar controls and devices, to show final settings at completion of TAB work. Provide markings with paint or other suitable permanent identification materials.
- G. Include in the TAB report recommendations for correcting unsatisfactory mechanical performances when system cannot be successfully balanced.
- H. Include an extended warranty of ninety (90) days after completion of test and balance work, during which time the Engineer, at his discretion, may request a recheck, or resetting of any component as listed in test report. The TAB company shall provide technicians and instruments and make any tests required by the Engineer during this time period.

3.2 Controls:

- A. Check all HVAC controls for proper location, calibration, and sequence of operation.
- B. Check operation of all controllers and controlled devices to verify proper action and direction. Check the operation of all interlocks.
- C. Check all control valves for complete closure and correct action under all operating conditions.

3.3 Air Balancing:

- A. Leakage tests on ductwork must have been completed before air balancing.
- B. Set dampers, volume controls, and fan speeds to obtain specified air delivery with minimum noise level. Rebalance as required to accomplish this. Simulate fully loaded filters during test.
- C. Set grille deflections as noted on plans. Modify deflections if required to eliminate drafts or objectionable air movement.
- D. Record air terminal velocity after completion of balance work.
- E. Record final grille and register deflection settings if different from that specified on contract drawings.
- F. Record all fan speeds.

3.4 Water Balancing:

- A. Verify proper operation of all hydronic system devices to ensure the proper flowrate, flow direction, and pressure are maintained.
- B. Set balancing cocks and flow control devices to obtain specified water flow rates to all terminal units and coils.
- C. Provide use of ultrasonic and/or non-invasive equipment where existing or new measuring devices do not exist. Repair insulation to new specifications.

3.5 Data Collection:

- A. In addition to the data required for any specified performance tests, measure and record the temperatures, pressures, flow rates, and nameplate data for all components listed herein.

- B. It is the intent of this section to record data on balanced systems, under normal operating or design conditions.
- C. Temperatures:
 - 1. Outside dry and wet bulb temperatures.
 - 2. Dry bulb temperature in each room and at least one wet bulb temperature in each zone.
 - 3. Inlet and outlet temperature of each heat exchange device - both fluids.
- D. Pressures:
 - 1. Suction and discharge static pressure of each fan.
 - 2. Suction and discharge pressure of each pump.
 - 3. Water pressure drop through each heat exchanger.
- E. Flow rates:
 - 1. Flow rate through each fan.
 - 2. Flow rate through each pump.
 - 3. Flow rate through each coil or heat exchange device.
- F. Nameplate Data:
 - 1. Complete nameplate data for all equipment.
 - 2. Motor data to include horsepower, phase, voltage, RPM, full load nameplate current, fuse rating in disconnect switch, number or manufacturer's size designation, and ampere rating of overcurrent and low voltage protection devices in starters.

END OF SECTION

PART 1 - GENERAL

- 1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- 1.2 Division-23 Basic Mechanical Materials and Methods Sections apply to work of this section.
- 1.3 Approval Submittals:
 - A. Product Data: Submit producer's data sheets and installation instructions on each insulation system including insulation, coverings, adhesives, sealers, protective finishes, and other material recommended by the manufacturer for applications indicated. Submit for:
 - 1. Cellular glass pipe above ground insulation.
- 1.4 O&M Data Submittals: Submit a copy of all approval submittals. Include in O&M Manual.

PART 2 - PRODUCTS

- 2.1 Acceptable Manufacturers: Subject to compliance with requirements, provide insulation products by Armstrong, Johns Manville, Knauf, Owens Corning, Pittsburgh Corning, U.S. Rubber, or approved equal. All products shall be asbestos-free.
- 2.2 Flame/Smoke Ratings: Provide composite mechanical insulation (insulation, jackets, coverings, sealers, mastics, and adhesive) with a flame-spread rating of 25 or less, and a smoke-developed rating of 50 or less, as tested by ANSI/ASTM E84.
- 2.3 Pipe Insulation Materials:
 - A. Cellular Glass Pipe Insulation: ASTM C552, Type II, Class 1. (Uncovered.)
 - B. Flexible Unicellular Pipe Insulation: ASTM C534, Type I. (Tubular, suitable for use to 200°F.)
 - C. Staples, Bands, Wires, and Cement: As recommended by the insulation manufacturer for applications indicated.
 - D. Adhesives, Sealers, Protective Finishes: Products recommended by the insulation manufacturer for the application indicated.
 - E. Bedding Compound for CHW Systems: Provide products to completely cover the piping or equipment being insulated. Products shall be low odor type. Foster 30-45 or Foster 95-50.

PART 3 - EXECUTION

- 3.1 General:
 - A. Install thermal insulation products in accordance with manufacturer's written instructions, and in compliance with recognized industry practices to ensure that insulation serves intended purpose.
 - B. Install insulation materials with smooth and even surfaces and on clean and dry surfaces. Redo poorly fitted joints. Do not use mastic or joint sealer as filler for gapping joints and excessive voids resulting from poor workmanship.
 - C. Maintain integrity of vapor-barrier on insulation and protect it to prevent puncture and other damage. Label all insulation "ASBESTOS FREE".
 - D. Do not apply insulation to surfaces while they are hot or wet.
 - E. Do not install insulation until systems have been checked and found free of leaks. Surfaces shall be clean and dry before attempting to apply insulation. A professional insulator with adequate experience and ability shall install insulation.

3.2 Cellular Glass Pipe Insulation:

- A. Insulate the following piping systems:
 - 1. Chilled water: 1-1/2" thick
- B. Indoor Concealed Locations: Cut insulation in sections at fittings and carefully fit to the pipe and fittings. No stovepipe or single miter insulation is allowed. Apply cellular glass bedding compound to the pipe surface to achieve 100%. Apply vapor barrier mastic to all edges of the cellular insulation and between joints in the insulation. Wire the cellular glass in place with stainless steel wire 9" on center. Provide hanger or pipe support shields of 16 gauge (minimum) galvanized steel over or embedded in the insulation which extend halfway up the pipe insulation cover and at least 4" on each side of the hanger. Insulate anchors adequately to prevent moisture condensation problems. Finish cellular glass insulation in concealed locations by applying a white fire rated jacket with self-sealing lap. Finish elbows and fittings with weather barrier sealant reinforced with white glass fabric.

END OF SECTION

PART 1 - GENERAL

1.1 Related Documents:

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

1.2 Summary:

- A. This Section includes piping systems for chilled water systems. Piping materials and equipment specified in this Section include pipes, fittings, specialties, and valves.

1.3 Definitions:

- A. Pipe sizes used in this Specification are Nominal Pipe Size (NPS).

1.4 Submittals:

- A. Product Data: Submit manufacturer's technical product data for:

1. Valves
2. Meters and Gauges
3. Vibration Control
4. Access Doors

1.5 Shop Drawings:

- A. Submit scaled layout drawings of piping systems in mechanical rooms including, but not necessarily limited to pipe sizes, location, offsets, connections, elevations, and hydronic specialties. Indicate interface and spatial relationship between piping and equipment. Coordinate with all other trades work and existing conditions. Field verify final location of pipe prior to submittal of layout drawings and fabrication.

1.6 Maintenance Data: For hydronic specialties and special duty valves, for inclusion in operating and maintenance manuals.

1.7 Quality Control Submittals:

1. Welders' certificates certifying that welders comply with the quality requirements specified in Quality Assurance below.
2. Certification of compliance with ASTM and ANSI manufacturing requirements for pipe, fittings, and specialties.
3. Submit reports specified in Part 3 of this Section.

1.8 Quality Assurance:

- A. Qualifications for Welding Processes and Operators: ASME "Boiler and Pressure Vessel Code", Section IX, "Welding and Brazing Qualification".
- B. ASME Compliance: Fabricate and stamp air separators and compression tanks to comply with ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

PART 2 - PRODUCTS

2.1 Pipe and Tubing Materials:

- A. General: Provide piping materials and factory-fabricated piping products of sizes, types, pressure ratings, temperature ratings, and capacities as indicated. Where not indicated, provide proper selection as determined by Installer to comply with

installation requirements. Provide materials and products complying with ASME B31.9 Code for Building Services Piping where applicable, base pressure rating on hydronic piping systems maximum design pressures. Provide sizes and types matching piping and equipment connections; provide fittings of materials which match pipe materials used in hydronic piping systems. Where more than one type of materials or products are indicated, selection is Installer's option.

- 2.2 Basic Identification: Provide identification complying with Division-23 Basic Mechanical Materials and Methods section "Mechanical Identification."
- 2.3 Mechanical Materials and Methods section "Pipes and Pipe Fittings", in accordance with the following listing:
 - A. Tube Size 3" and Smaller: Copper tube; Type L, hard-drawn temper; wrought-copper fittings with soldered joints.
- 2.4 Basic Piping Specialties: Provide piping specialties complying with Division-23 Basic Mechanical Materials and Methods section "Piping Specialties."
- 2.5 Basic Supports and Anchors: Provide supports and anchors complying with Division-23 Basic Mechanical Materials and Methods section "Supports and Anchors."
- 2.6 Basic Valves: Provide valves complying with Division-23 Basic Materials and Methods section "Valves" and the following list:
 - A. Standard Service Sectional Valves: Type BA1, BA3, BF2
 - B. Standard Service Shutoff Valves: BA1, BF2
 - C. Standard Service Drain Valves: Type BA1.
 - D. Standard Service Terminal Runout Valves: Type BA2.
- 2.7 Basic Meters and Gauges: Provide meters and gauges complying with Division-23 Basic Mechanical Materials and Methods section "Meters and Gauges", in accordance with the following listing:
 - A. Temperature gauges and fittings.
 - B. Pressure gauges and fittings.
- 2.8 Basic Vibration Control: Provide vibration control products complying with Division-23 Basic Mechanical Materials and Methods section "Vibration Control" and the following list:
 - A. Coil Connections: Type PF3.

PART 3 - EXECUTION

- 3.1 General: Examine areas and conditions under which hydronic piping systems materials and products are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.
- 3.2 Installation of Hydronic Piping:
 - A. General: Install hydronic piping in accordance with Division-23 Basic Mechanical Materials and Methods section "Pipes and Pipe Fittings".
 - B. Install eccentric reducers where pipe is reduced in size in direction of flow, with tops of both pipes and reducer flush. Do not use bushings.
 - C. Install piping with 1/32" per foot (¼%) upward slope in direction of flow, or as indicated on the drawings. The intent is to install piping sloped to drains at low points in the system for a drainable system.
 - D. Connect branch-feed piping to mains at horizontal center line of mains, connect run-out piping to branches at horizontal center line of branches.

- E. Locate groups of pipes parallel to each other, spaced to permit applying full insulation and servicing of valves.
 - F. Install piping specialties in accordance with Division-23 Basic Mechanical Materials and Methods section "Piping Specialties".
 - G. Install supports and anchors in accordance with Division-23 Basic Mechanical Materials and Methods section "Supports and Anchors".
 - H. Install valves in accordance with Division-23 Basic Mechanical Materials and Methods section "Valves".
- 3.3 Sectional Valves: Install on each branch and riser, close to main, where branch or riser serves 2 or more hydronic terminals or equipment connections, and elsewhere as indicated.
- 3.4 Shutoff Valves: Install on inlet and outlet of each mechanical equipment item, and on inlet and outlet of each hydronic terminal, and elsewhere as indicated.
- 3.5 Drain Valves: Install on each mechanical equipment item located to completely drain equipment for service or repair. Install at base of each riser, at base of each rise or drop in piping system, and elsewhere where indicated or required to completely drain hydronic piping system.
- 3.6 Install meters and gauges in accordance with Division-23 Basic Materials and Methods section "Meters and Gauges".
- 3.7 Equipment Connections:
- A. General: Connect hydronic piping system to mechanical equipment as indicated on the drawings, and comply with equipment manufacturer's instructions where not otherwise indicated. Install shutoff valve and union on supply and return and a drain valve on the drain connection.
 - B. Connections between dissimilar metals shall be made with dielectric devices.
- 3.8 Hydronic Terminals: Install hydronic terminals with shutoff valves, unions, and related devices as shown on the drawings. Install manual air vent valve on element in accordance with manufacturer's instructions. Locate valves and balancing cocks for ease of maintenance. Where indicated, install automatic temperature control valve with unions on return line between coil and shutoff valve.
- 3.9 Provide sufficient swing joints, expansion loops and devices necessary for a flexible piping system. Install drain valves at all low points of each system to enable complete drainage, and air vents at all high points in the piping system to enable complete air venting.
- 3.10 Locate and coordinate installation of access doors for all valves and devices in accordance with Division-23 Basic Mechanical Materials and Methods section "Access Doors".
- 3.11 Testing, Cleaning, Flushing, and Inspecting: Test, clean, flush, and inspect hydronic piping systems in accordance with requirements of Division-23 Basic Mechanical Materials and Methods section "Testing, Cleaning, and Sterilization of Piping Systems."
- 3.12 New piping shall be flushed, cleaned and pre-treated as recommended by Chemtreat the current University of Florida water treatment vendor. Contractor shall purchase the necessary chemicals from Chemtreat, and flushing, cleaning, and pre-treatment shall be witnessed by the Chemtreat representative. Submit test report.

END OF SECTION

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PART 1 - GENERAL

1.1 Related Documents:

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

1.2 Summary:

- A. This Section specifies piping materials and installation methods common to more than one section of Division 23 and includes joining materials, piping specialties, including drip pans, sleeves, and seals and basic piping installation instructions.

1.3 Quality Assurance:

- A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of piping specialties of types and sizes required, whose products have been in satisfactory use in similar service for not less than five years.

1.4 Submittals:

- A. Product Data: Submit product data on escutcheons, dielectric unions and fittings, mechanical sleeve seals, roof drains, and strainers.
- B. Quality Control Submittals: Submit welders' certificates.

1.5 Delivery, Storage, and Handling:

- A. Provide factory-applied plastic end-caps on each length of pipe and tube, except for concrete, corrugated metal, hub-and-spigot, clay pipe. Maintain end-caps through shipping, storage, and handling to prevent pipe-end damage and prevent entrance of dirt, debris, and moisture.

PART 2 - PRODUCTS

2.1 Joining Materials:

- A. Welding Materials: Comply with Section II, Part C, ASME Boiler and Pressure Vessel Code.
- B. Soldering Materials: Refer to individual piping system specifications for solder appropriate for each respective system.
- C. Gaskets for Flanged Joints: Gasket material shall be full-faced for cast-iron flanges and raised-face for steel flanges. Select materials which conform to their respective ANSI Standard (A21.11, B16.20, or B16.21).

2.2 Piping Specialties:

- A. Unions: Malleable-iron, Class 150 for low pressure service and Class 250 for high pressure service; hexagonal stock, with ball-and-socket joints, metal-to-metal bronze seating surfaces; female threaded ends.
- B. Y-Type Strainers: Provide strainers full line size of connecting piping. Screens shall be Type 304 stainless steel, with 3/64" perforations at 233 per square inch.
 - 1. Provide strainers with 125 psi working pressure rating for low pressure applications, and 250 psi pressure rating for high pressure application.
 - 2. Threaded or Flanged Ends, 2" and Smaller: bronze body, screwed screen retainer with centered blowdown fitted with pipe plug.
 - 3. Acceptable manufacturers include Armstrong Machine Works, Hoffman Specialty ITT (Fluid handling Div.), Metraflex Corp., R-P & C Valve (Div. White

Consolidated Industries Inc.), Spirax Sarco, Victaulic Co., of America, and Watts Regulator Co.

- C. Pipe Sleeves: Provide pipe sleeves of one of the following:
 - 1. Sheet-Metal: Fabricate from galvanized sheet metal; round tube closed with snap-lock joint, welded spiral seams, or welded longitudinal joint. Fabricate from the following gauges: 3" and smaller, 20 gauge; 4" to 6", 16 gauge; over 6", 14 gauge.
 - 2. Steel Sleeves: Schedule 40 galvanized welded steel pipe, ASTM A53, Grade A.
- D. Fire Barrier Penetration Seals:
 - 1. Cracks, Voids, or Holes up to 4" Diameter: Use putty or caulking, one-piece intumescent elastomer, noncorrosive to metal, compatible with synthetic cable jackets, and capable of expanding ten times when exposed to flame or heat, UL listed.
 - 2. Openings 4" or Greater: Use sealing system capable of passing three-hour fire test in accordance with ASTM E-814, consisting of wall wrap or liner, partitions, and end caps capable of expanding when exposed to temperatures of 250 to 350°F UL listed.
 - 3. Acceptable manufacturers include Electro Products Div./3M, and Nelson (Unit of General Signal).
- E. Drip Pans: Provide drip pans fabricated from corrosion-resistant sheet metal with watertight joints, and with edges turned up 2-1/2". Reinforce top, either by structural angles or by rolling top over 1/4" steel rod. Provide hole, gasket, and flange at low point for watertight joint and 1" drain line connection.
- F. Manual Air Vent: Bronze body and non-ferrous internal parts, 150 psig working pressure, 225°F operating temperature; manually operated with screw driver or thumb screw and having 1/8" discharge connection and a 1/2" inlet connection. Acceptable manufacturers include Armstrong, Bell & Gossett, Hoffman Specialty, and Spirax Sarco.

PART 3 - EXECUTION

3.1 Preparation:

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe. Remove scale, slag, dirt, and debris both inside and outside of piping and fittings before assembly.

3.2 Installations:

- A. So far as practical, install piping as indicated. Install piping free of sags or bends, tight to slabs, beams, joists, columns, walls, and other permanent elements of the building. Provide space to permit insulation applications, with one-inch clearance outside the insulation. Allow sufficient space above removable ceiling panels to allow for panel removal. Locate groups of pipes parallel to each other, spaced to permit applying full insulation and servicing valves.
- B. Install drains at low points in mains, risers, and branch lines consisting of a tee fitting, 3/4" ball valve, and short 3/4" threaded nipple and cap. Hose bibbs will not be used. If low points are created and are not on plans or shop drawings, a drain shall be installed and noted on as-built drawings.

- C. Seal pipe penetrations through exterior walls using sleeves and mechanical sleeve seals. Pipe sleeves smaller than 6" shall be steel; pipe sleeves 6" and larger shall be sheet metal.
- D. Where pipes pass through fire rated walls, partitions, ceilings, or floors, the fire rated integrity shall be maintained.
- E. Fire Barrier Penetration Seals: Provide seals for any opening through fire rated walls, floors, or ceilings used as a passage for mechanical components such as piping or ductwork. Fill entire opening with sealing compound. Adhere to manufacturer's installation instructions.
- F. Install manual air vents at all high points of the piping systems and as indicated on the drawings.

3.3 Fittings and Specialties:

- A. Remake leaking joints using new materials.
- B. Install unions adjacent to each valve, and at the final connection to each piece of equipment and plumbing fixture having 2" and smaller connections, and elsewhere as indicated.
- C. Install flanges in piping 2-1/2" and larger, where indicated, adjacent to each valve, and at the final connection to each piece of equipment.
- D. Install dielectric unions to connect piping materials of dissimilar metals in all piping systems.
- E. Pipe Sleeves: Install steel-pipe sleeves except as otherwise indicated where piping passes through walls, floors, ceilings, and roofs. Do not install sleeves through structural members of work, except as detailed on drawings, or as reviewed by Architect/Engineer. Install sleeves accurately centered on pipe runs. Size sleeves so that piping and insulation (if any) will have free movement in sleeve, including allowance for thermal expansion; but not less than two pipe sizes larger than piping run. Where insulation includes vapor-barrier jacket, provide sleeve with sufficient clearance for installation. Install length of sleeve equal to thickness of construction penetrated, and finish flush to surface; except floor sleeves. Extend floor sleeves 1/4" above level floor finish, and 3/4" above concrete and other work around sleeves, and provide temporary closure to prevent concrete and other materials from entering sleeves.
- F. Drip Pans: Locate drip pans under piping passing over or within three feet horizontally of electrical equipment, and elsewhere as indicated. Hang from structure with rods and building attachments, weld rods to sides of drip pan. Brace to prevent sagging or swaying. Connect 1" drain line to drain connection, and run to nearest plumbing drain or elsewhere as indicated.

3.4 Joints:

- A. Nonferrous Pipe Joints:
 - 1. Brazed and Soldered Joints: For copper tube and fitting joints, braze joints in accordance with ANSI B31.1.0 - Standard Code for Pressure Piping, Power Piping and ANSI B9.1 - Standard Safety Code for Mechanical Refrigeration. Thoroughly clean tube surface and inside surface of the cup of the fittings, using very fine emery cloth, prior to making soldered or brazed joints. Wipe tube and fittings clean and apply flux. Flux shall not be used as the sole means for cleaning tube and fitting surfaces.

3.5 Testing:

- A. See individual specification sections in which piping specialties are installed for testing procedures for piping systems.

END OF SECTION

23 24 00 TESTING, CLEANING, AND STERILIZATION OF PIPING SYSTEMS

PART 1 - GENERAL

- 1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- 1.2 This section is a Division-23 Basic Mechanical Materials and Methods section and is part of each Division-23 section making reference to or requiring the testing and other procedures specified herein.
- 1.3 Notify the Architect/Engineer when system tests are ready to be witnessed at least 24 hours prior to the test.
- 1.4 All materials, test equipment, and devices required for cleaning, testing, sterilizing or purging shall be provided by the Contractor.

PART 2 - PRODUCTS

- 2.1 None.

PART 3 - EXECUTION

3.1 Pressure Tests:

- A. General: Provide temporary equipment for testing, including pump and gauges. Test piping systems before insulation is installed wherever feasible and remove control devices before testing. Test each natural section of each piping system independently but do not use piping system valves to isolate sections where test pressure exceeds valve pressure rating. Fill each section with indicated medium and pressurize for indicated pressure and time.
- B. Required test period is 2 hours.
- C. No piping, fixtures, or equipment shall be concealed or covered until they have been tested. The contractor shall apply each test and ensure that it is satisfactory for the period specified before calling the Architect/Engineer to observe the test. Test shall be repeated upon request to the satisfaction of those making the inspection.
- D. Observe each test section for leakage at the end of the test period. Test fails if leakage is observed or if pressure drop exceeds 5% of the test pressure.
- E. Check of systems during application of test pressures should include visual check for water leakage and soap bubble or similar check for air and nitrogen leakage.
- F. During heating and cooling cycles, linear expansion shall be checked at all elbows and expansion joints for proper clearance.
- G. Repair piping systems sections which fail required piping test. Disassemble and re-install using new materials to extent required to overcome leakage. Do not use chemicals, stop-leak compounds, mastics, or other temporary repair methods.
- H. Pressure testing requirements must be coordinated with phasing requirements. Make accommodations to pressure test all new piping as required by the phasing of the work.

3.2 Pressure Test Requirements:

- A. Chilled Water: Perform hydrostatic test at 150% of the normal operating pressure, but not less than 150 psig.

3.3 Cleaning and Sterilization:

- A. General: Clean exterior surfaces of installed piping systems of superfluous materials, and prepare for application of specified coatings (if any). Flush out piping systems with clean water or blowdown with air before proceeding with required tests. Inspect each run of each system for completion of joints, supports and accessory items.

23 24 00 TESTING, CLEANING, AND STERILIZATION OF PIPING SYSTEMS

- B. Flush and drain all water systems at least three times. Reverse flush systems from smallest piping to largest piping. Replace startup strainers with operating strainers.
- C. Cleaning: After completion of all work and operational check out of the HVAC installations and prior to acceptance of the project by the Owner, the following shall be accomplished. The completed piping systems shall be thoroughly flushed (reversed flushing) and chemically cleaned as needed to remove all dirt, debris, and any foreign matter that may have been trapped in the piping systems during construction. After flushing of systems is complete, the Contractor shall clean all main strainers and all strainers at air handlers, fan coil units.
- D. A second cleaning of all strainers will be required if requested by the Engineer. Contractor shall furnish and install all valves and piping stub outs in the piping systems as needed to accommodate this flushing operation. Install the valves and stub outs at a location and in a manner that will allow them to remain in place for future flushing operations. The flushing and strainer cleaning operations shall be witnessed and approved by the Engineer and Owner's representative.
- E. Flushing requirements must be coordinated with phasing requirements. Make accommodations to flush all new piping and existing piping as required by the phasing of the work and as outlined on the plans.

END OF SECTION

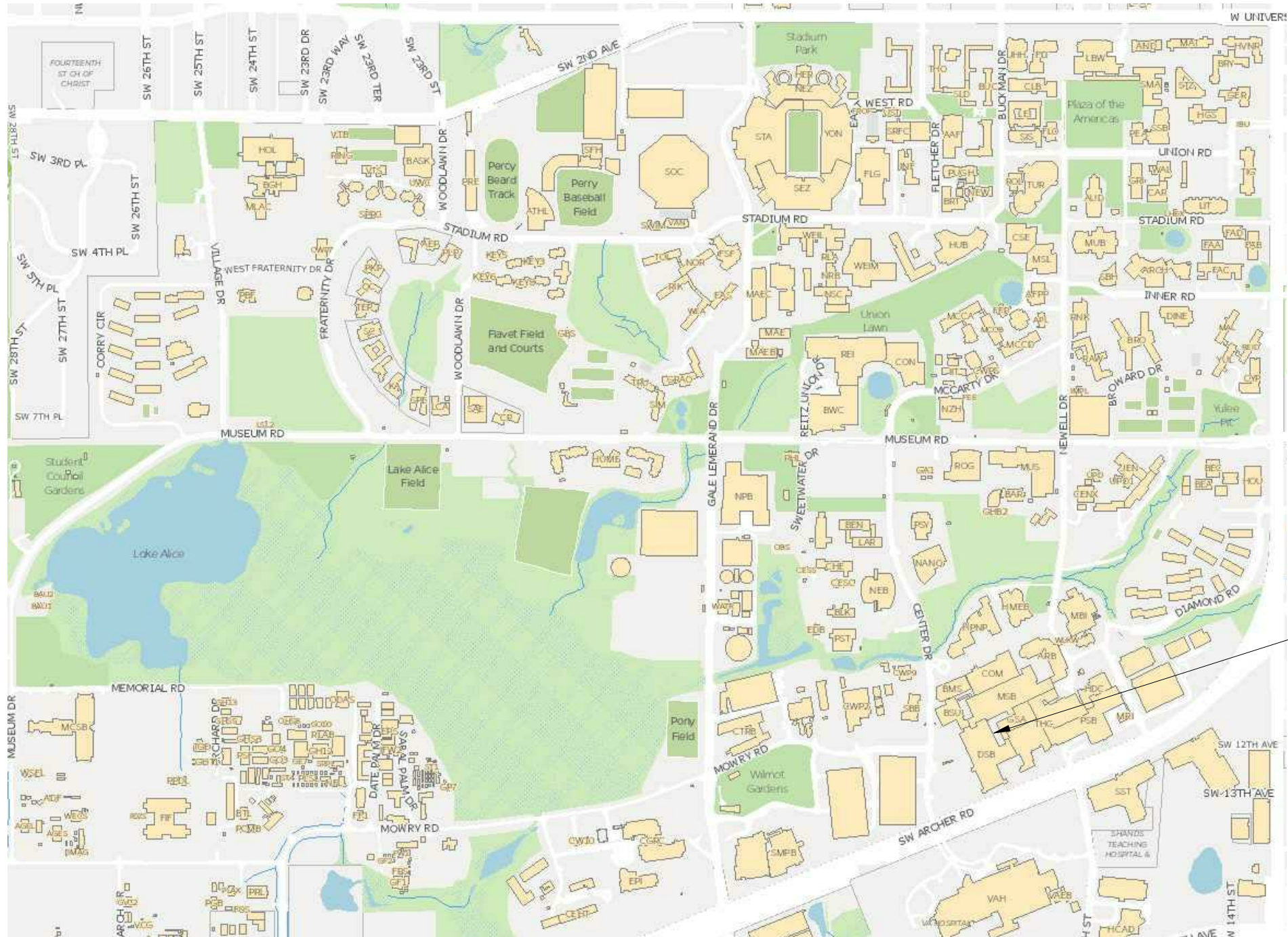
DENTAL SCIENCE CHW PIPE REPLACEMENT - FLOOR 8,9,&10

J HILLIS MILLER HEALTH SCIENCE CENTER

MP-04810
245 Gale Lemerand / PO Box 115050
Gainesville, FL 32611-5050



SITE LOCATION MAP



Sheet List	
Sheet Number	Sheet Name
M0.1	MECHANICAL LEGEND, NOTES AND DETAILS
M1.0	MECHANICAL CHW SYSTEM AXONOMETRIC VIEW
M1.8N	MECHANICAL PIPING PLAN - EIGHTH FLOOR NORTH
M1.8S	MECHANICAL PIPING PLAN - EIGHTH FLOOR SOUTH
M1.9N	MECHANICAL PIPING PLAN - NINTH FLOOR NORTH
M1.9S	MECHANICAL PIPING PLAN - NINTH FLOOR SOUTH
M1.10N	MECHANICAL PIPING PLAN - TENTH FLOOR NORTH

100% CONSTRUCTION DOCUMENTS
JULY 23, 2019



Mitchell Gullledge Engineering, Inc.
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Gainesville, FL 32601
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www.mitchellgullledge.com 19027

MECHANICAL ABBREVIATIONS

A/C	AIR CONDITIONING
ABS	ABSOLUTE
AFF	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
AMPS	AMPERES
ATM	ATMOSPHERE
AUTO	AUTOMATIC
BD	BALANCING DAMPER
BFC	BELOW FINISHED CEILING
BHP	BRAKE HORSE POWER
BT	BOTTOM THROAT
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CI	CAST IRON
CO	CLEAN OUT
DB	DRY BULB OR DECIBELS
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DN	DOWN
EACH	EACH
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EP	ELECTRIC PNEUMATIC
EWB	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FA	FREE AREA IN SQUARE FEET
FC	FAIL CLOSED; FLEXIBLE CONNECTION
FLA	FULL LOAD AMPS
FO	FAIL OPEN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GPH	GALLON PER HOUR
GPM	GALLON PER MINUTE
HB	HOSE BIB
HP	HORSE POWER
HVAC	HEATING VENTILATING AND AIR-CONDITIONING
HZ	HERTZ
IN	INCHES
IN H2O	INCHES OF WATER
IN WG	INCHES OF WATER GAUGE
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB TEMPERATURE
LRA	LOCK ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MER	MECHANICAL EQUIPMENT ROOM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OOA	OPERABLE AIR OPENING
PH	PHASE
PRV	PRESSURE REDUCING VALVE
OSD	OPPOSED BLADE DAMPER
PSI	POUNDS PER SQUARE INCH
OZ	OUNCE
PE	PNEUMATIC ELECTRIC
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
S/S	STAINLESS STEEL
SA	SUPPLY AIR
SD	SPLITTER DAMPER
SEC	SECOND
SP	STATIC PRESSURE
SQ FT	SQUARE FOOT
STD	STANDARD
T	THROAT
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TSP	TOTAL STATIC PRESSURE
TT	TOP THROAT
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE
W	WIDTH, WEST, WATER
W/	WITH
W/O	WITHOUT
WB	WET BULB
WMS	WIRE MESH SCREEN

MECHANICAL LEGEND

	CONNECT TO EXISTING
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CALIBRATED BALANCING VALVE (CIRCUIT SETTER)
	RELIEF VALVE
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	PLUG VALVE
	PRESSURE REDUCING VALVE
	STRAINER
	THERMOMETER
	GAUGE CONNECTOR PLUG
	DIELECTRIC WATERWAY
	PRESSURE GAUGE
	ECCENTRIC REDUCER
	CONCENTRIC REDUCER
	VENTURI FLOW METER
	FLEXIBLE PIPE CONNECTION

MECHANICAL GENERAL NOTES

1. IN GENERAL, PLANS AND DIAGRAMS ARE SCHEMATIC ONLY AND SHOULD NOT BE SCALED.
2. THE INTENT OF THE SPECIFICATIONS AND DRAWINGS IS TO CLARIFY THE SCOPE OF WORK AND ALERT CONTRACTOR OF EXISTING CONDITIONS. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL CLEARANCES BEFORE FABRICATION OF PIPING AND PROVIDE ADDITIONAL OFFSET AND/OR CHANGES IN PIPING SIZES TO MEET FIELD CONDITIONS AND COORDINATE WITH EXISTING CONDITIONS BEFORE START OF CONSTRUCTION WORK.
3. SHOULD ANY CONFLICTS ARISE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE CONFLICT BEFORE ANY CHANGES ARE MADE. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL BEFORE PROCEEDING WITH ANY CHANGES.
4. ALL WORK COVERED IN THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST PUBLISHED STANDARDS OF ASHRAE, AND NFPA.
5. PENETRATIONS THROUGH SMOKE OR FIRE-RATED ASSEMBLIES: PENETRATIONS FOR PIPES THROUGH ASSEMBLIES (WALLS, PARTITIONS, ETC.) WITH A REQUIRED FIRE RESISTANCE RATING SHALL BE SEALED TO THE PENETRATING MEMBER IN AN APPROVED MANNER WHICH MAINTAINS THE REQUIRED FIRE RESISTANCE RATING OF THE ASSEMBLY.
6. SUBMIT MATERIAL SUBMITTALS FOR PIPING AND PIPING ACCESSORIES.
7. CONTRACTOR SHALL ARRANGE TO PAY FOR ALL NECESSARY PERMITS, LICENSES AND INSPECTIONS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

TEST AND BALANCE NOTES

THE TAB CONTRACTOR SHALL SUBMIT A PRETEST REPORT FOR REVIEW AND APPROVAL PRIOR TO COMMENCING ANY NEW WORK WITH DATA OBTAINED IN THE FOLLOWING MANNER:

1. OVERRIDE ALL FCU COOLING COIL PNEUMATIC CONTROLS VALVES TO MAXIMUM COOLING SETPOINT.
2. MEASURE CHW FLOW AT EACH FAN COIL UNIT WITH AN ULTRASONIC METER.
3. MEASURE AIR INLET AND OUTLET TEMPERATURE.
4. MEASURE ROOM SUPPLY AND RETURN AIRFLOW RATE FROM EACH FAN COIL UNIT.
5. PROVIDE FULL SPEC OF EACH FCU AND NOTE ANY SPECIFIC FUNCTIONAL DEFICIENCIES.

FOLLOWING THE NEW CHW PIPING INSTALLATION AND CONNECTION TO THE EXISTING FAN COIL UNITS, THE TAB CONTRACTOR SHALL BALANCE THE EXISTING FCUS TO MATCH THE PRETEST VALUES OR OTHE VALUES PROVIDED BY THE ENGINEER OR OWNER.

DESCRIPTION OF THE WORK

THE WORK CONSISTS GENERALLY OF REPLACEMENT OF THE EXISTING CHILLED WATER PIPING SUPPLY AND RETURN ON EACH FLOOR AS SHOWN ON THE FLOORPLANS WITH NEW PIPING, DEVICES, SUPPORTS, AND INSULATION PER CURRENT UNIVERSITY STANDARDS AND AS DETAILED ON THE DRAWINGS AND SPECIFIED IN THE BOUND PROJECT MANUAL. THE WORK IS INTENDED TO BE PHASED BY THE CONTRACTOR IN A MANNER THAT LIMITS OUTAGES FOR EACH CHILLED WATER FAN COIL UNIT SERVING EACH SPACE TO ONLY PREMIUM TIME HOURS. ALL WORK SHALL BE PERFORMED OUTSIDE OF NORMAL WORKING HOURS TO PREVENT INTERUPTION OF ONGOING OCCUPANT ACTIVITIES. ALL WORK SHALL BE COORDINATED WITH THE DENTAL SCIENCE BUILDING FACILITY MANAGER AND JOBSITE CLEANUP SHALL BEGIN AND END EACH NIGHT ON A ROOM BY ROOM BASIS AS DESIGNATED BY THE DENTAL SCIENCE BUILDING FACILITY MANAGER. COORDINATE WITH ANY REQUIRED ABATEMENT WORK.

BASE BID

PROVIDE PHASED NEW WORK AS SHOWN AND DETAILED FOR THE 9TH & 10TH FLOOR.

ADDITIVE ALTERNATE #1

PROVIDE ADDITIVE ALTERNATE TO INCLUDE PHASED DEMOLITION OF THE EXISTING PIPING AS SHOWN TO BE REPLACED ON THE 9TH & 10TH FLOOR.

ADDITIVE ALTERNATE #2

PROVIDE PHASED NEW WORK AS SHOWN AND DETAILED FOR THE 8TH FLOOR NORTH.

ADDITIVE ALTERNATE #3

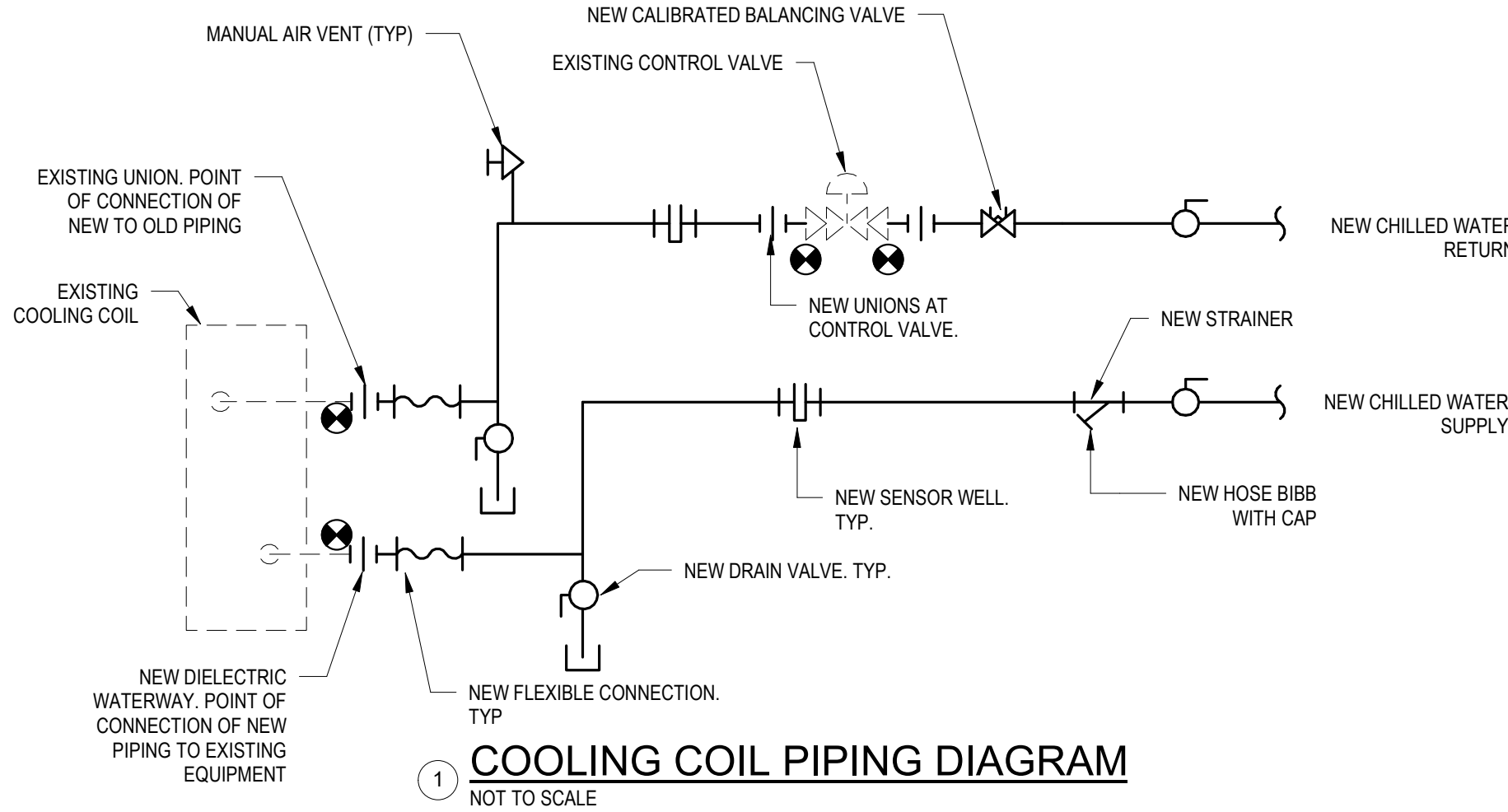
PROVIDE ADDITIVE ALTERNATE TO INCLUDE PHASED DEMOLITION OF THE EXISTING PIPING AS SHOWN TO BE REPLACED ON THE 8TH FLOOR NORTH.

ADDITIVE ALTERNATE #4

PROVIDE PHASED NEW WORK AS SHOWN AND DETAILED FOR THE 8TH FLOOR SOUTH.

ADDITIVE ALTERNATE #5

PROVIDE ADDITIVE ALTERNATE TO INCLUDE PHASED DEMOLITION OF THE EXISTING PIPING AS SHOWN TO BE REPLACED ON THE 8TH FLOOR SOUTH.



PROJECT NAME:
**J HILLIS MILLER HEALTH SCIENCE CENTER
DENTAL SCIENCE CHW PIPE REPLACEMENT - FLOOR 8,9,&10**

OWNER:
J HILLIS MILLER HEALTH
SCIENCE CENTER
245 Gale Lemerand / PO Box
115050
Gainesville, FL 32611-5050

OWNER'S PROJECT NUMBER:
MP-04810

MG PROJECT
NUMBER: 19027
REVISIONS:
REV DESC DATE

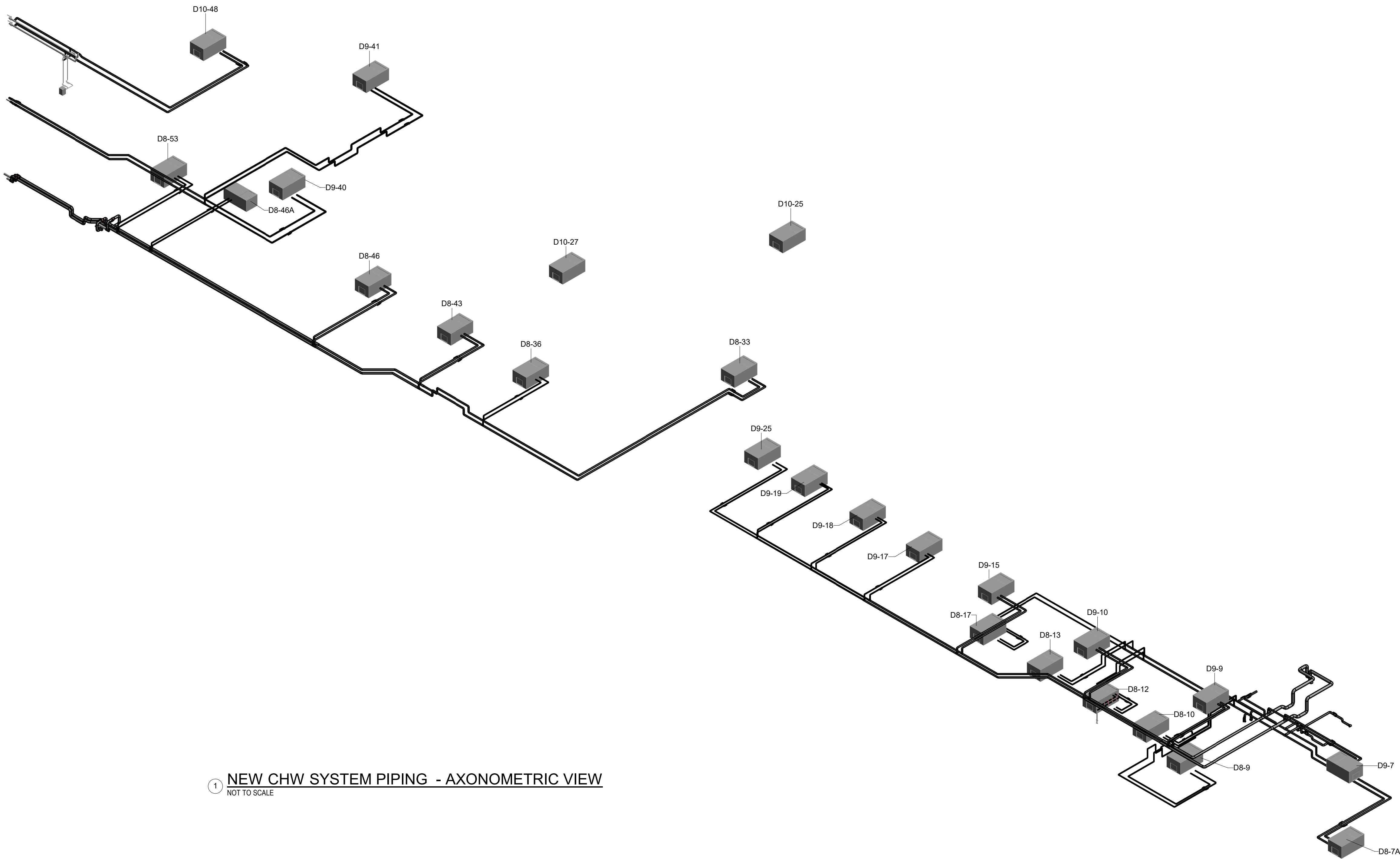
ISSUE:
100% CONSTRUCTION
DOCUMENTS

ISSUE DATE:
JULY 23, 2019

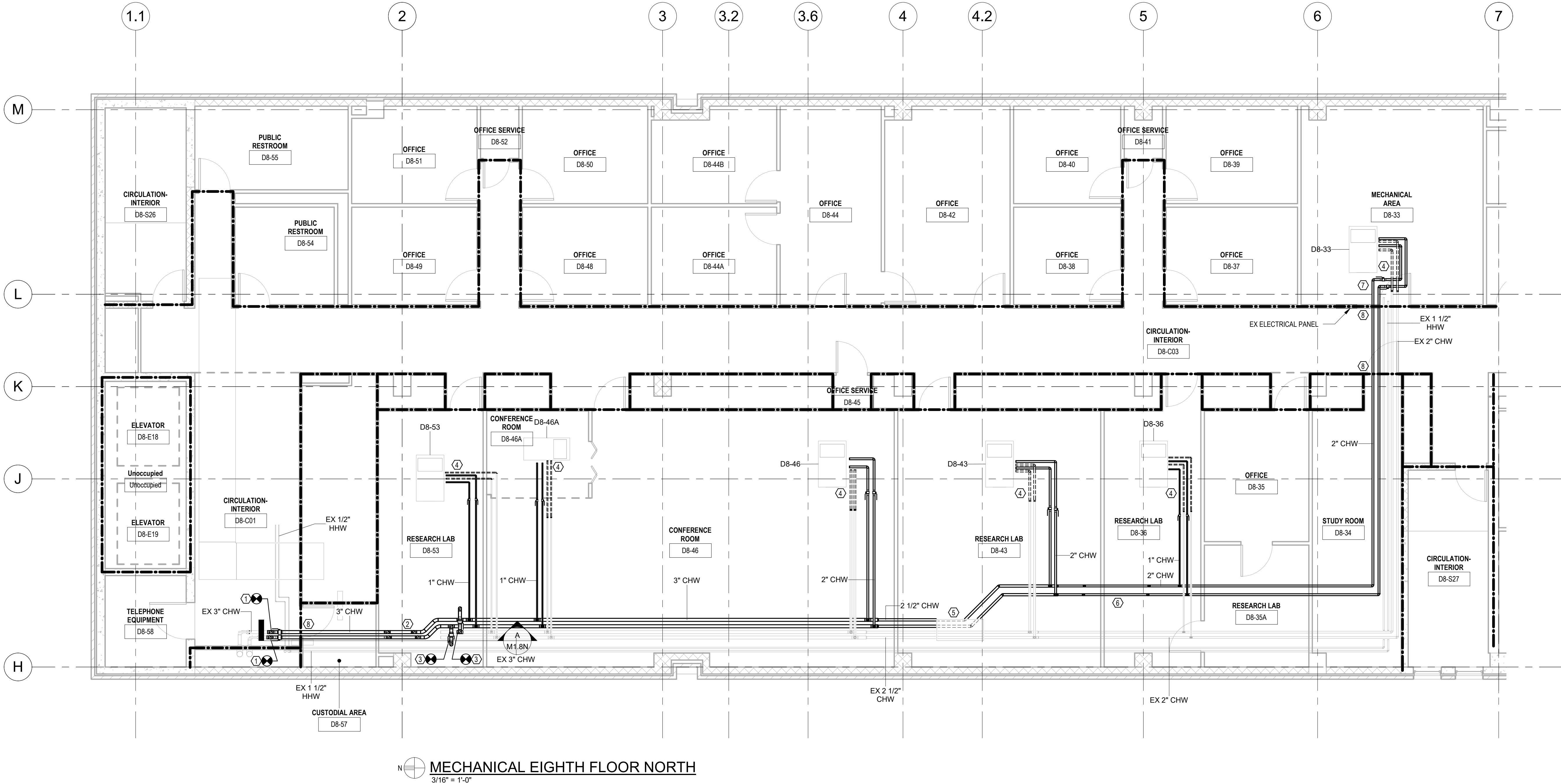
CHECKED BY:
RCG

SHEET TITLE:
**MECHANICAL CHW
SYSTEM
AXONOMETRIC VIEW**
SHEET NUMBER:

M1.0



NEW CHW SYSTEM PIPING - AXONOMETRIC VIEW
NOT TO SCALE



GENERAL NOTES:

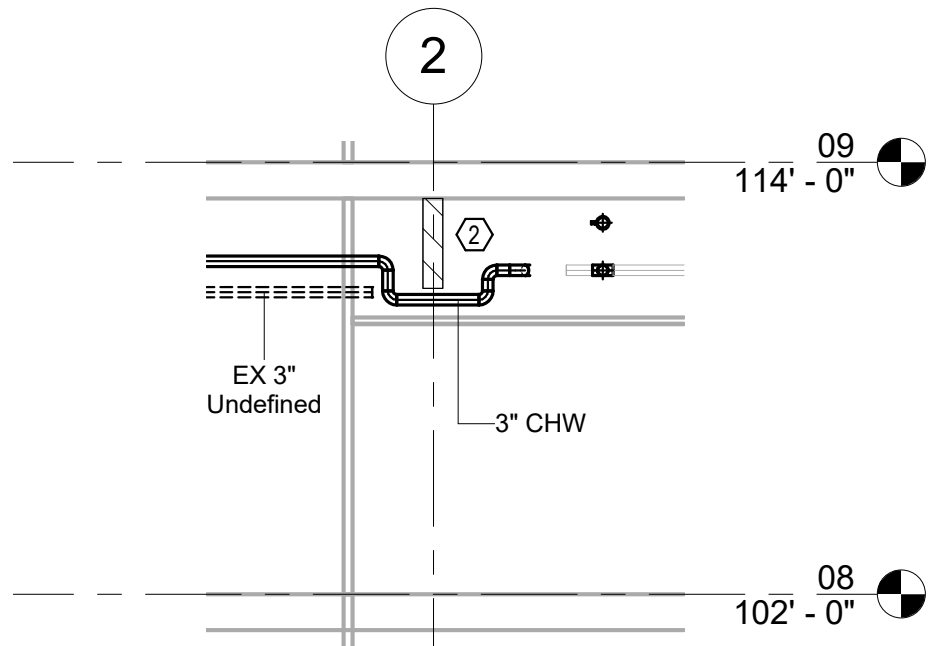
- CONTRACTOR SHALL COORDINATE ALL CHW SERVICE SHUT DOWNS WITH DENTAL SCIENCE BUILDING FACILITY MANAGER.
- ALL WORK SHALL BE PERFORMED AFTER OPERATING HOURS. ALL WORK AREAS SHALL BE CLEANED UP AND RESTORED TO ORIGINAL CONDITION AT THE END OF EACH WORK SESSION.
- PIPING SHOWN WITHOUT INSULATION FOR CLARITY. SEE SPECIFICATIONS FOR INSULATION REQUIREMENTS.
- PROVIDE DIELECTRIC UNIONS AT ALL STEEL TO COPPER PIPING CONNECTIONS.
- NEW ISOLATION VALVES SHALL BE INSTALLED TO ALLOW EASY ACCESS AND EASE OF VALVE OPERATION. FIELD VERIFY ACCESSIBLE LOCATION FOR VALVE INSTALLATION.

PHASING NOTES:

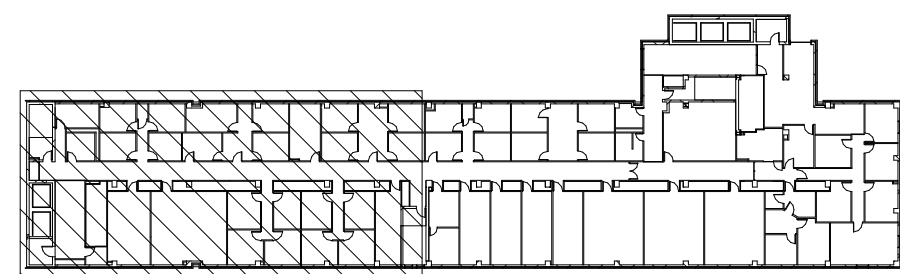
- THE FOLLOWING WORK SHALL BE PERFORMED IN THE ORDER GIVEN BELOW:
- INSTALL NEARLY ALL NEW CHWS&R PIPING WITHOUT CONNECTING TO EXISTING FAN COILS OR RISERS.
 - INSTALL FCU COOLING COIL PIPE RUNOUTS AND ALL DEVICES EXCEPT CONTROL VALVE. PROVIDE SPOOL PIECE AT CONTROL VALVE LOCATION BETWEEN NEW UNIONS AND TEMPORARY PIPING BETWEEN SUPPLY AND RETURN LEGS AT EACH FCU COOLING COIL TO ALLOW A TEMPORARY PIPE LOOP FOR PRESSURE TESTING PURPOSES.
 - PRESSURE TEST ALL NEW CHW PIPING.
 - FLUSH ALL NEW PIPING PER SPECIFICATIONS PRIOR TO CONNECTION TO EXISTING SYSTEM.
 - SCHEDULE THE FOLLOWING TASKS AS ONE EVENT OUTSIDE OF NORMAL OPERATING HOURS:
 - CONNECT NEW 3" CHWS&R TO EXISTING FLOOR MAINS AND CAP PIPING SLATED FOR DEMOLITION.
 - CONNECT NEW 3" CHWS&R PIPING TO EXISTING PIPING AND BACKFEED EXISTING FCUS FOR TEMPORARY FEED.
 - MAKE CONNECTIONS OF NEW PIPING TO EXISTING FCUS ON A ONE-BY-ONE BASIS BY ISOLATING THEM FROM TEMPORARY FEED. DEMOLISHING THE EXISTING COIL RUNOUT PIPING DOWNSTREAM OF EXISTING ISOLATION VALVE AND CONNECTING NEW PIPING TO THE FCU COOLING COIL.
 - AFTER ALL FCUs LOCATED ON 8TH FLOOR NORTH ARE CONNECTED TO NEW PIPING PERFORM 2ND PIPING FLUSH AND CLEAN ALL STRAINERS.
 - DISCONNECT TEMPORARY BACKFEED FROM THE NEW CHW SYSTEM. CAP PIPING AND REMOVE TEMPORARY PIPING.

SHEET NOTES: 1/2/3/4/5/6/7/8

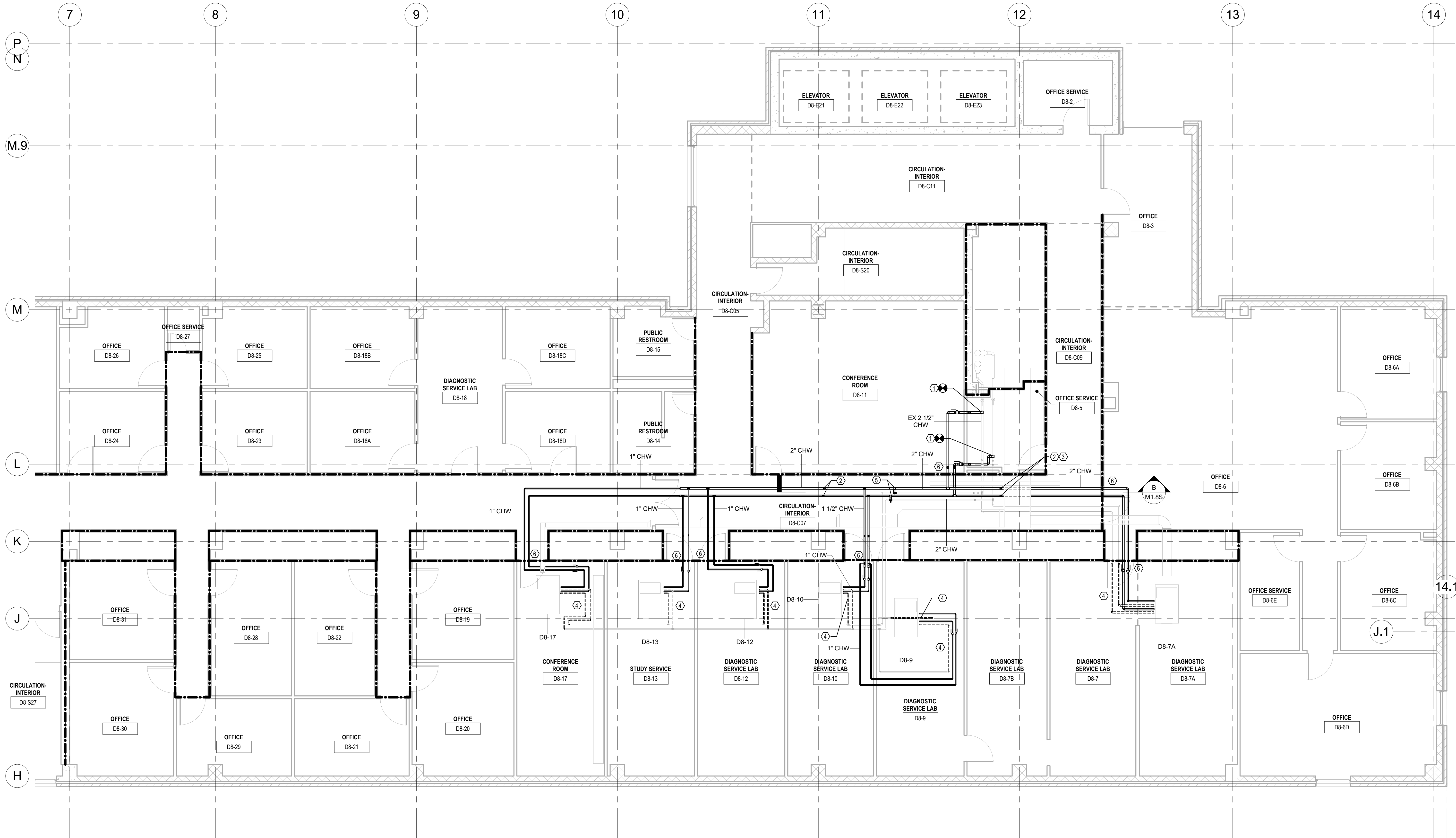
- ROUTE NEW PIPE ABOVE EXISTING.
- DEMOLISH EXISTING 3" CHWS&R MAINS TO ALLOW NEW PIPE TO FIT UNDER THE BEAM AT COLUMN NO. 2 AND ABOVE THE CEILING. CAP EXISTING.
- CONNECT NEW 3" TEMPORARY FEED PIPING TO EXISTING 3" CHWS&R. PROVIDE ISOLATION VALVES.
- DEMOLISH EXISTING COIL RUNOUT PIPING DOWNSTREAM OF ISOLATION VALVES. CONNECT NEW PIPING TO FCU COOLING COIL. SEE COIL PIPING DIAGRAM FOR ALL REQUIRED DEVICES.
- PIPE ROUTED UNDER EXISTING FAN AND DUCT.
- PIPE ROUTED ABOVE EXISTING DUCT. PROVIDE MANUAL AIR VENT WITH BALL ISOLATION VALVE.
- PROVIDE STAINLESS STEEL DRAIN PAN 2" DEEP UNDER ALL CHW AND HHW PIPING LOCATED ABOVE ELECTRICAL AND TELECOM EQUIPMENT. ROUTE DRAIN TO CORRIDOR WALL SIMILAR TO EXISTING.
- PROVIDE FIRE BARRIER PROTECTION AT NEW PIPE PENETRATION.



EIGHTH FLOOR NORTH - SECTION A
3/16" = 1'-0"



KEY PLAN - EIGHTH FLOOR NORTH
NOT TO SCALE



MECHANICAL EIGHTH FLOOR SOUTH
3/16" = 1'-0"

GENERAL NOTES:

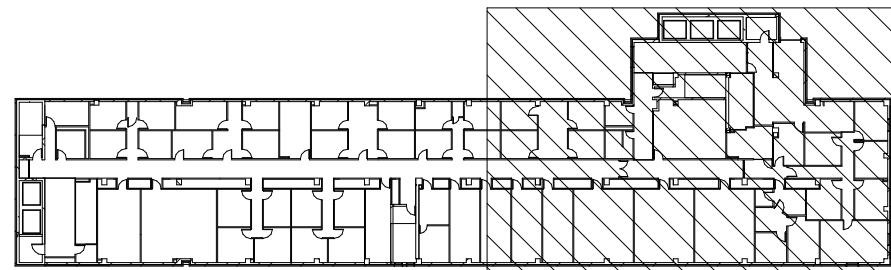
- CONTRACTOR SHALL COORDINATE ALL CHW SERVICE SHUT DOWNS WITH DENTAL SCIENCE BUILDING FACILITY MANAGER.
- ALL WORK SHALL BE PERFORMED AFTER OPERATING HOURS. ALL WORK AREAS SHALL BE CLEANED UP AND RESTORED TO ORIGINAL CONDITION AT THE END OF EACH WORK SESSION.
- PIPING SHOWN WITHOUT INSULATION FOR CLARITY. SEE SPECIFICATIONS FOR INSULATION REQUIREMENTS.
- PROVIDE DIELECTRIC UNIONS AT ALL STEEL TO COPPER PIPING CONNECTIONS.
- NEW ISOLATION VALVES SHALL BE INSTALLED TO ALLOW EASY ACCESS AND EASE OF VALVE OPERATION. FIELD VERIFY ACCESSIBLE LOCATION FOR VALVE INSTALLATION.

PHASING NOTES:

- THE FOLLOWING WORK SHALL BE PERFORMED IN THE ORDER GIVEN BELOW:
- INSTALL NEARLY ALL NEW CHWS&R PIPING WITHOUT CONNECTING TO EXISTING FAN COILS OR RISERS.
 - INSTALL FCU COOLING COIL PIPE RUNOUTS AND ALL DEVICES EXCEPT CONTROL VALVE. PROVIDE SPOOL PIECE AT CONTROL VALVE LOCATION BETWEEN NEW UNIONS AND TEMPORARY PIPING BETWEEN SUPPLY AND RETURN LEGS AT EACH FCU COOLING COIL TO ALLOW A TEMPORARY PIPE LOOP FOR PRESSURE TESTING PURPOSES.
 - PRESSURE TEST ALL NEW CHW PIPING
 - FLUSH ALL NEW PIPING PER SPECIFICATIONS PRIOR TO CONNECTION TO EXISTING SYSTEM.
 - SCHEDULE THE FOLLOWING TASKS AS ONE EVENT OUTSIDE OF NORMAL OPERATING HOURS:
 - CONNECT NEW 2-1/2" CHWS&R TO EXISTING FLOOR MAINS AND CAP PIPING SLATED FOR DEMOLITION.
 - CONNECT NEW 2" CHWS&R PIPING TO EXISTING PIPING AND BACKFEED EXISTING FCUs FOR TEMPORARY FEED.
 - MAKE CONNECTIONS OF NEW PIPING TO EXISTING FCUs ON A ONE-BY-ONE BASIS BY ISOLATING THEM FROM TEMPORARY FEED, DEMOLISHING THE EXISTING COIL RUNOUT PIPING DOWNSTREAM OF EXISTING ISOLATION VALVE AND CONNECTING NEW PIPING TO THE FCU COOLING COIL.
 - AFTER ALL FCUs LOCATED ON 8TH FLOOR SOUTH ARE CONNECTED TO NEW PIPING PERFORM 2ND PIPING FLUSH AND CLEAN ALL STRAINERS.
 - DISCONNECT TEMPORARY BACKFEED FROM THE NEW CHW SYSTEM. CAP PIPING AND REMOVE TEMPORARY PIPING.

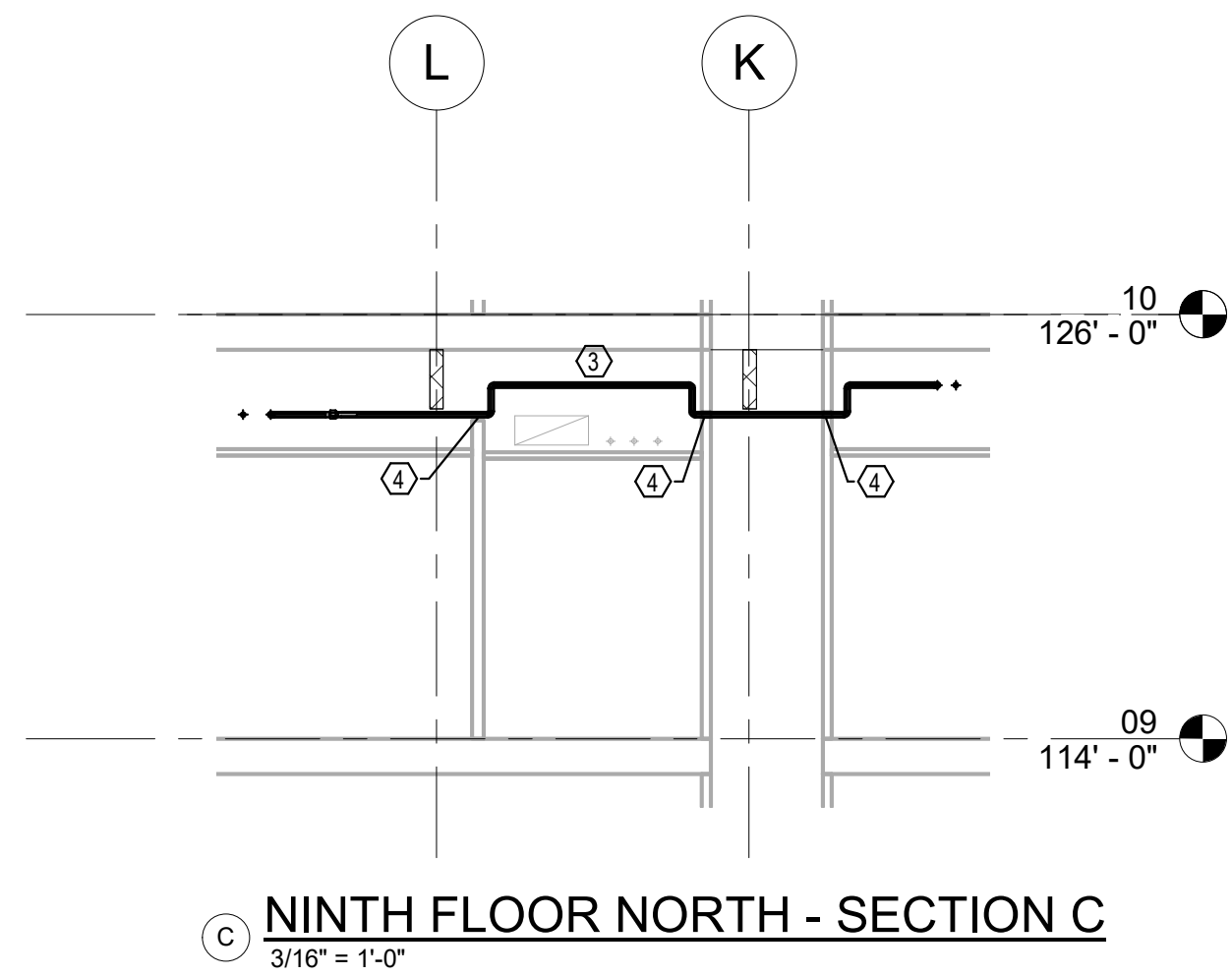
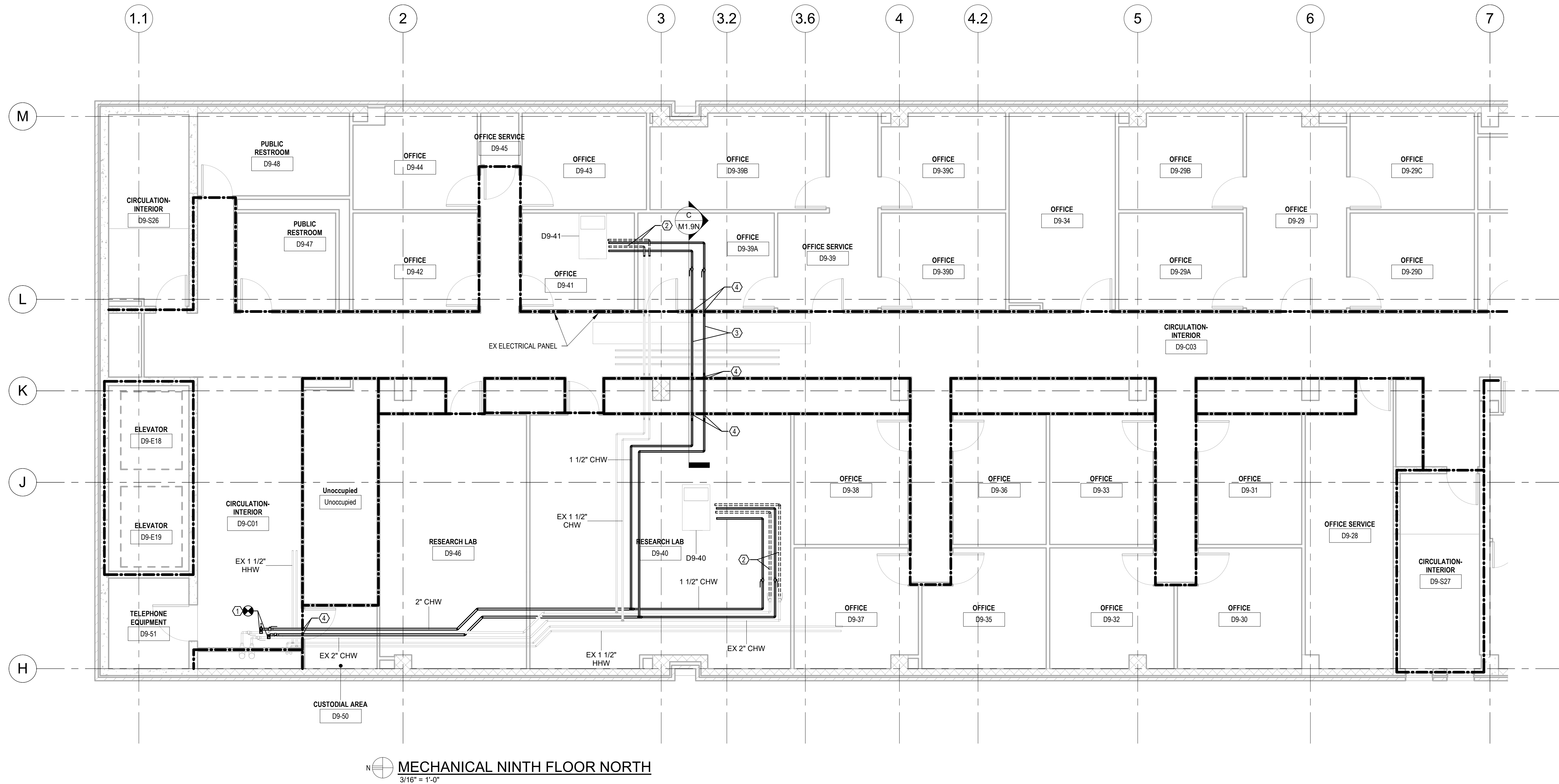
SHEET NOTES: ①②③④⑤⑥

- CONNECT NEW 2-1/2" CHWS&R TO EXISTING. THE OFFICE D8-5 CEILING IS LOWER THAN IN CONFERENCE ROOM D8-11 THE NEW PIPE MUST OFFSET UP PRIOR PENETRATING THE WALL. PIPE ELEVATION SHALL BE ABOVE CEILING IN CONFERENCE ROOM AND BELOW BEAM AT COLUMN-L.
- OFFSET NEW CHWS&R ABOVE DUCT AFTER COLUMN-L AND ROUTE IT AT THE HIGH ELEVATION UNTIL BEAM AT COLUMN 11 AND COLUMN 12.
- ROUTE PIPING UNDER EXISTING DUCT TO FCU IN ROOM D8-7A.
- DEMOLISH EXISTING COIL RUNOUT PIPING DOWNSTREAM OF EXISTING ISOLATION VALVES. CONNECT NEW PIPING TO FCU COOLING COIL. SEE COIL PIPING DIAGRAM FOR ALL REQUIRED DEVICES.
- CONNECT NEW 2" CHWS&R PIPING TO EXISTING PIPING ROUTED NORTH. THE PIPING WILL BE USED AS TEMPORARY FEED DURING CONSTRUCTION. PROVIDE NEW ISOLATION VALVES IN THE VERTICAL.
- PROVIDE FIRE BARRIER PROTECTION AT NEW PIPE PENETRATION



KEY PLAN - EIGHTH FLOOR SOUTH
NOT TO SCALE

EIGHTH FLOOR SOUTH - SECTION B
3/16" = 1'-0"



GENERAL NOTES:

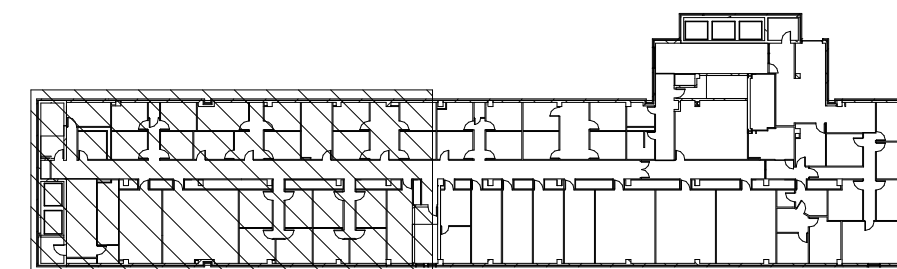
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- ALL WORK SHALL BE PERFORMED AFTER OPERATING HOURS. ALL WORK AREAS SHALL BE CLEANED UP AND RESTORED TO ORIGINAL CONDITION AT THE END OF EACH WORK SESSION.
- PIPING SHOWN WITHOUT INSULATION FOR CLARITY. SEE SPECIFICATIONS FOR INSULATION REQUIREMENTS.
- PROVIDE DIELECTRIC UNIONS AT ALL STEEL TO COPPER PIPING CONNECTIONS.
- NEW ISOLATION VALVES SHALL BE INSTALLED TO ALLOW EASY ACCESS AND EASE OF VALVE OPERATION. FIELD VERIFY ACCESSIBLE LOCATION FOR VALVE INSTALLATION.

PHASING NOTES:

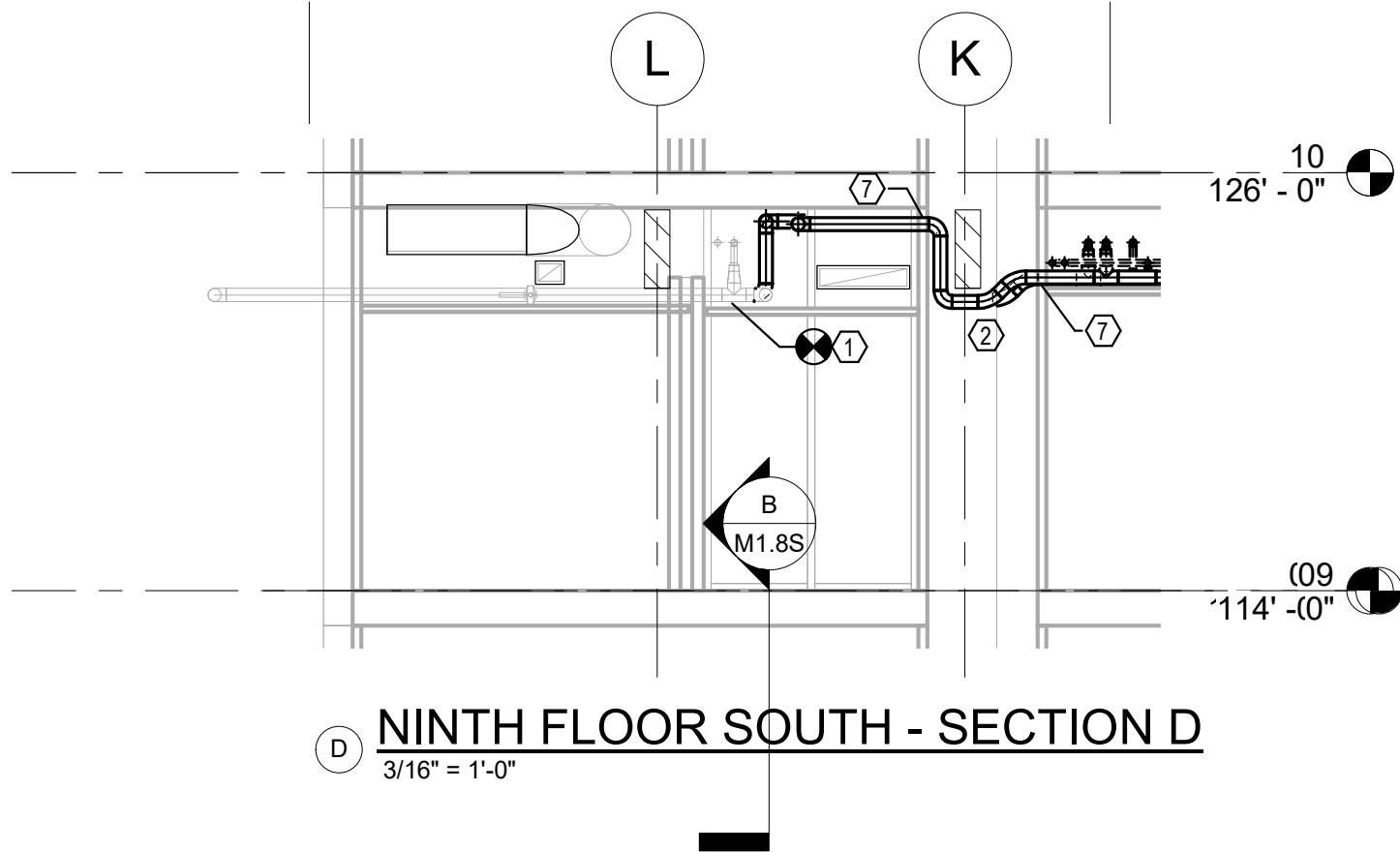
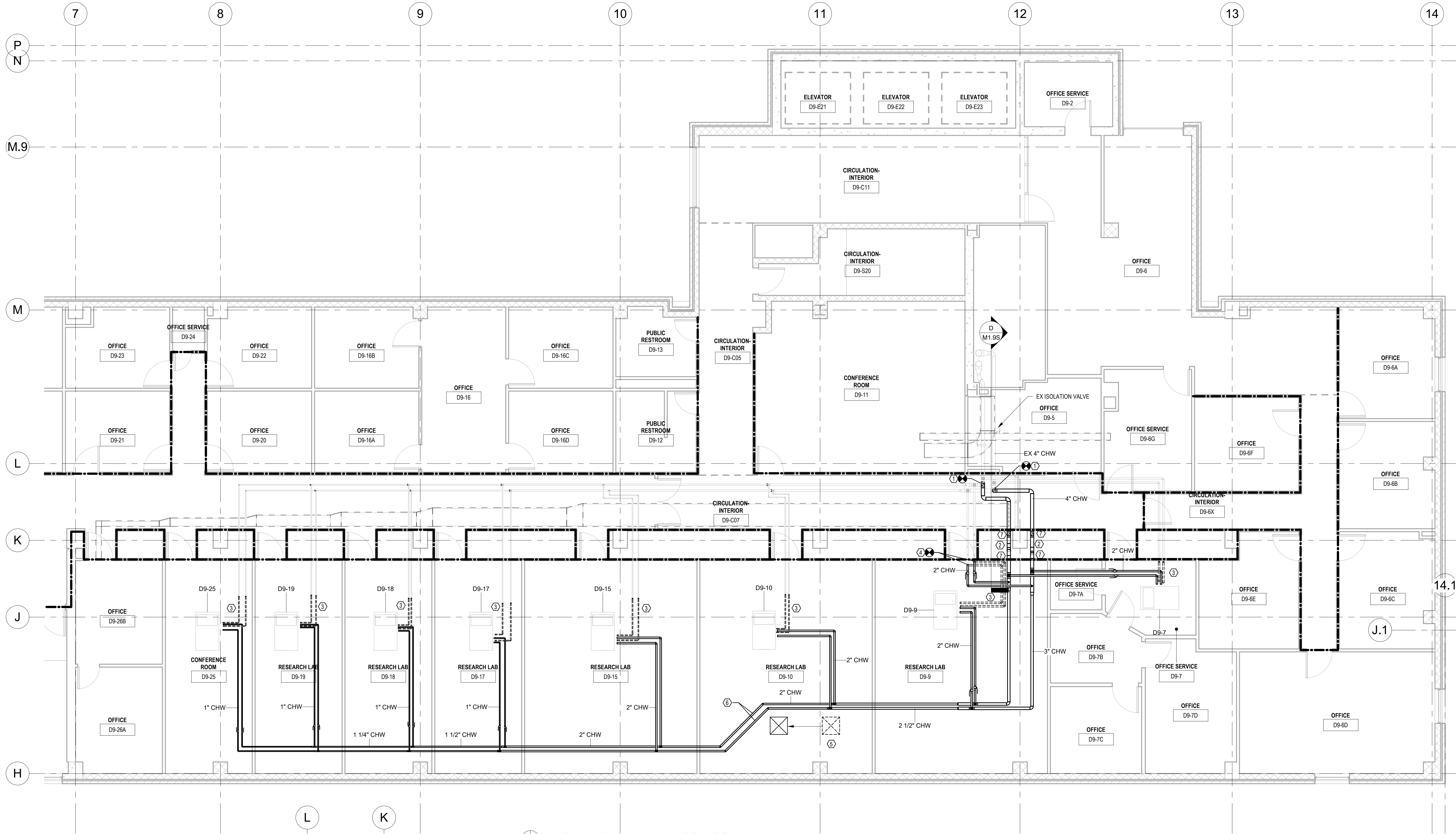
- THE FOLLOWING WORK SHALL BE PERFORMED IN THE ORDER GIVEN BELOW:
- INSTALL NEARLY ALL NEW CHWS&R PIPING WITHOUT CONNECTING TO EXISTING FAN COILS OR RISERS.
 - INSTALL FCU COOLING COIL PIPE RUNOUTS AND ALL DEVICES EXCEPT CONTROL VALVE. PROVIDE SPOOL PIECE AT CONTROL VALVE LOCATION BETWEEN NEW UNIONS AND TEMPORARY PIPING BETWEEN SUPPLY AND RETURN LEGS AT EACH FCU COOLING COIL TO ALLOW A TEMPORARY PIPE LOOP FOR PRESSURE TESTING PURPOSES.
 - PRESSURE TEST ALL NEW CHW PIPING.
 - FLUSH ALL NEW PIPING PER SPECIFICATIONS PRIOR TO CONNECTION TO EXISTING SYSTEM.
 - SCHEDULE THE FOLLOWING TASKS AS ONE EVENT OUTSIDE OF NORMAL OPERATING HOURS:
 - CONNECT NEW BOTH FCUS TO NEW CHWS&R PIPING.
 - AFTER ALL FCUS LOCATED ON 9TH FLOOR NORTH ARE CONNECTED TO NEW PIPING PERFORM 2ND PIPING FLUSH AND CLEAN ALL STRAINERS.

SHEET NOTES: ①②③④

- CONNECT NEW 2" CHWS&R PIPING TO THE BOTTOM OF EXISTING PIPE. PROVIDE 12" DRIP LEG WITH 3/4" DRAIN HOSE CONNECTION AND SHUT-OFF VALVE. ROUTE PIPE BELOW EXISTING TO ALLOW THE NEW PIPE TO FIT UNDER BEAM AT COLUMN NO 2.
- DEMOLISH EXISTING COIL RUNOUT PIPING DOWNSTREAM OF EXISTING ISOLATION VALVES. CONNECT NEW PIPING TO FCU COOLING COIL. SEE COIL PIPING DIAGRAM FOR ALL REQUIRED DEVICES.
- OFFSET NEW CHWS&R BELOW EXISTING BEAM AND ABOVE EXISTING DUCTWORK AND ELECTRICAL CONDUIT.
- PROVIDE FIRE BARRIER PROTECTION AT NEW PIPE PENETRATION



KEY PLAN - NINTH FLOOR NORTH
NOT TO SCALE



MECHANICAL NINTH FLOOR SOUTH
3/16" = 1'-0"

GENERAL NOTES:

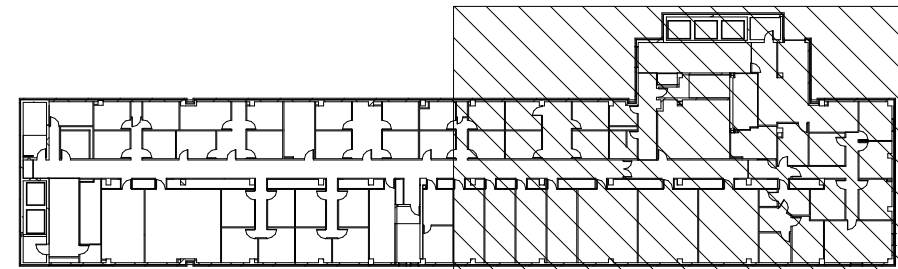
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2. ALL WORK SHALL BE PERFORMED AFTER OPERATING HOURS. ALL WORK AREAS SHALL BE CLEANED UP AND RESTORED TO ORIGINAL CONDITION AT THE END OF EACH WORK SESSION.
3. PIPING SHOWN WITHOUT INSULATION FOR CLARITY. SEE SPECIFICATIONS FOR INSULATION REQUIREMENTS.
4. PROVIDE DIELECTRIC WATERWAYS AT ALL STEEL TO COPPER PIPING CONNECTIONS. NEW ISOLATION VALVES SHALL BE INSTALLED TO ALLOW EASY ACCESS AND EASE OF VALVE OPERATION. FIELD VERIFY ACCESSIBLE LOCATION FOR VALVE INSTALLATION.
- 5.

PHASING NOTES:

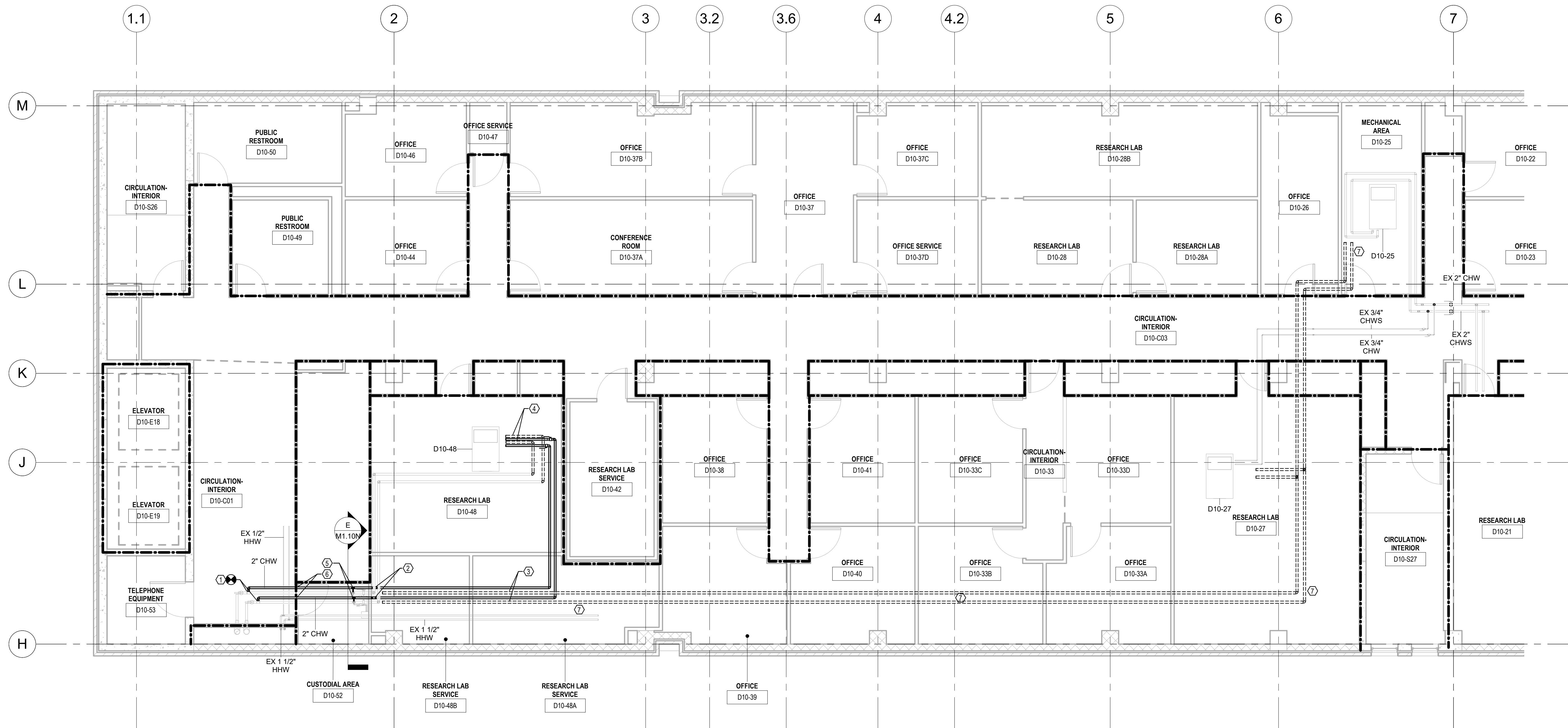
- THE FOLLOWING WORK SHALL BE PERFORMED IN THE ORDER GIVEN BELOW:
1. INSTALL NEARLY ALL NEW CHWS&R PIPING WITHOUT CONNECTING TO EXISTING FAN COILS OR RISERS.
 2. INSTALL FCU COOLING COIL, PIPE RUNOUTS AND ALL DEVICES EXCEPT CONTROL VALVE. PROVIDE SPOOL PIECE AT CONTROL VALVE LOCATION BETWEEN NEW UNIONS AND TEMPORARY PIPING BETWEEN SUPPLY AND RETURN LEGS AT EACH FCU COOLING COIL TO ALLOW A TEMPORARY PIPE LOOP FOR PRESSURE TESTING PURPOSES.
 3. PRESSURE TEST ALL NEW CHW PIPING
 4. FLUSH ALL NEW PIPING PER SPECIFICATIONS PRIOR TO CONNECTION TO EXISTING SYSTEM.
 5. SCHEDULE THE FOLLOWING TASKS AS ONE EVENT OUTSIDE OF NORMAL OPERATING HOURS:
 - A. CONNECT NEW 4" CHWS&R TO EXISTING FLOOR MAINS AND CAP PIPING SLATED FOR DEMOLITION.
 - B. CONNECT NEW 2" CHWS&R PIPING TO EXISTING PIPING AND BACKFEED EXISTING FCUS FOR TEMPORARY FEED.
 6. MAKE CONNECTIONS OF NEW PIPING TO EXISTING FCUs ON A ONE-BY-ONE BASIS BY ISOLATING THEM FROM TEMPORARY FEED, DEMOLISHING THE EXISTING COIL RUNOUT PIPING DOWNSTREAM OF EXISTING ISOLATION VALVE AND CONNECTING NEW PIPING TO THE FCU COOLING COIL.
 7. AFTER ALL FCUs LOCATED ON 9TH FLOOR SOUTH ARE CONNECTED TO NEW PIPING PERFORM 2ND PIPING FLUSH AND CLEAN ALL STRAINERS.
 8. DISCONNECT TEMPORARY BACKFEED FROM THE NEW CHW SYSTEM. CAP PIPING AND REMOVE TEMPORARY PIPING.

SHEET NOTES: 1 2 3 4 5 6 7

1. CONNECT NEW 4" CHWS&R TO EXISTING AT ELBOW. ROUTE NEW PIPE ACROSS THE CORRIDOR TO LAB D9-9.
2. OFFSET PIPING UNDER EXISTING BEAM.
3. DEMOLISH EXISTING COIL RUNOUT PIPING DOWNSTREAM OF EXISTING ISOLATION VALVES. CONNECT NEW PIPING TO FCU COOLING COIL. SEE COIL PIPING DIAGRAM FOR ALL REQUIRED DEVICES.
4. CONNECT NEW 2" CHWS&R PIPING TO PORTION OF EXISTING PIPING SERVING FCU IN LAB D9-9. THE PIPING WILL BE USED AS TEMPORARY FEED DURING CONSTRUCTION.
5. RELOCATE EXISTING DIFFUSER AND FLEXIBLE DUCT RUNOUT TO NEW LOCATION SHOWN TO ALLOW NEW CHW PIPING TO PASS BETWEEN THE BEAM AND CEILING. BLACK FABRIC TO SUPPORT FLEX DUCT IS NOT ACCEPTABLE.
6. OFFSET PIPING AS SHOWN TO ALLOW PIPE TO PASS UNDER EXISTING DUCT AND INLINE EXHAUST FAN.
7. PROVIDE FIRE BARRIER PROTECTION AT NEW PIPE PENETRATION



KEY PLAN - NINTH FLOOR SOUTH
NOT TO SCALE



MECHANICAL TENTH FLOOR NORTH
3/16" = 1'-0"

GENERAL NOTES:

- CONTRACTOR SHALL COORDINATE ALL CHW SERVICE SHUT DOWNS WITH DENTAL SCIENCE BUILDING FACILITY MANAGER.
- ALL WORK SHALL BE PERFORMED AFTER OPERATING HOURS. ALL WORK AREAS SHALL BE CLEANED UP AND RESTORED TO ORIGINAL CONDITION AT THE END OF EACH WORK SESSION.
- PIPING SHOWN WITHOUT INSULATION FOR CLARITY. SEE SPECIFICATIONS FOR INSULATION REQUIREMENTS.
- PROVIDE DIELECTRIC UNIONS AT ALL STEEL TO COPPER PIPING CONNECTIONS.
- NEW ISOLATION VALVES SHALL BE INSTALLED TO ALLOW EASY ACCESS AND EASE OF VALVE OPERATION. FIELD VERIFY ACCESSIBLE LOCATION FOR VALVE INSTALLATION.

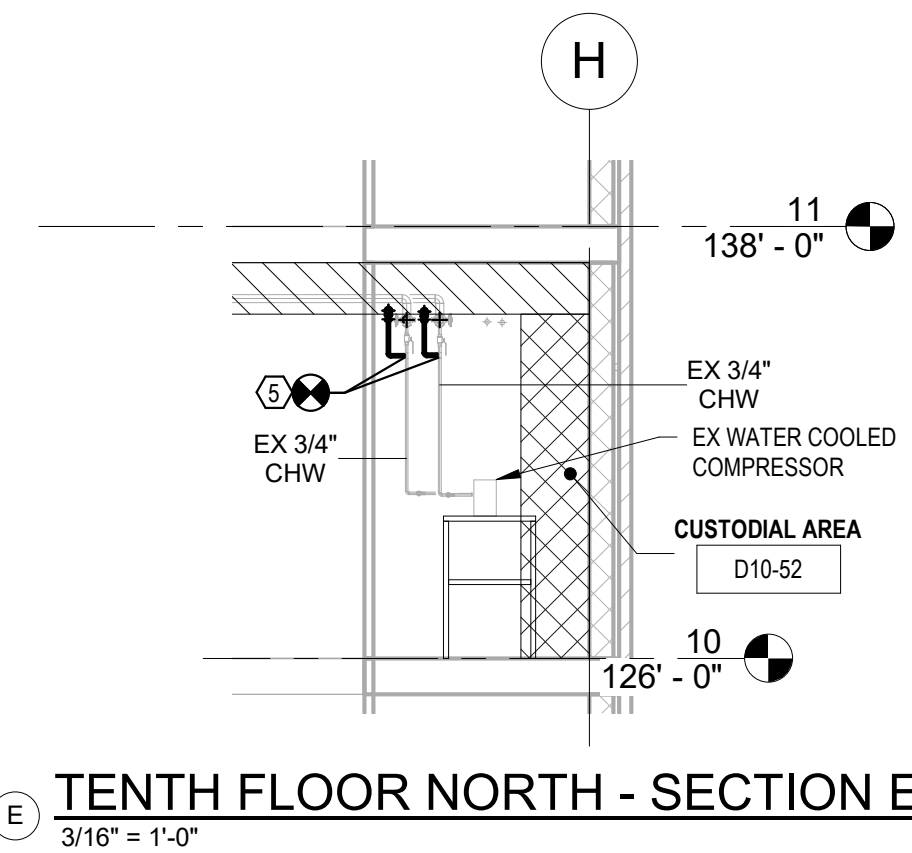
PHASING NOTES:

THE FOLLOWING WORK SHALL BE PERFORMED IN THE ORDER GIVEN BELOW. THE CHW PIPING ON NORTH SIDE OF 10TH FLOOR SERVES ONLY ONE FCU LOCATED IN D10-48.

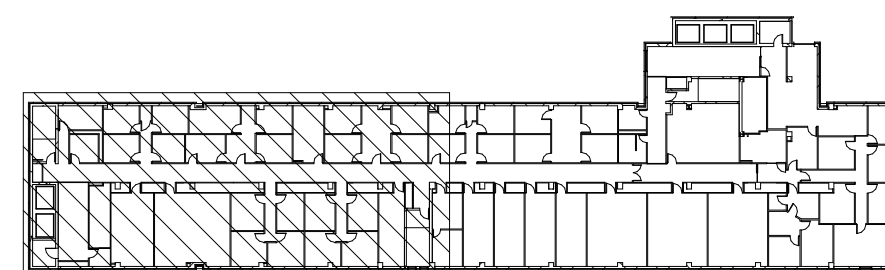
- INSTALL NEARLY ALL NEW CHWS&R PIPING WITHOUT CONNECTING TO EXISTING FAN COILS OR RISERS.
- INSTALL FCU COOLING COIL PIPE RUNOUTS AND ALL DEVICES EXCEPT CONTROL VALVE. PROVIDE SPOOL PIECE AT CONTROL VALVE LOCATION BETWEEN NEW UNIONS AND TEMPORARY PIPING BETWEEN SUPPLY AND RETURN LEGS AT EACH FCU COOLING COIL TO ALLOW A TEMPORARY PIPE LOOP FOR PRESSURE TESTING PURPOSES.
- PRESSURE TEST ALL NEW CHW PIPING
- FLUSH ALL NEW PIPING PER SPECIFICATIONS PRIOR TO CONNECTION TO EXISTING SYSTEM.
- SCHEDULE THE FOLLOWING TASKS AS ONE EVENT OUTSIDE OF NORMAL OPERATING HOURS:
 - CONNECT NEW 2" CHWS&R PIPING TO EXISTING PIPING AND BACKFEED EXISTING FCUS FOR TEMPORARY FEED.
- MAKE FINAL CONNECTIONS OF NEW PIPING TO EXISTING FCUS. DEMOLISHING THE EXISTING COIL RUNOUT PIPING DOWNSTREAM OF EXISTING ISOLATION VALVE AND CONNECTING NEW PIPING TO THE FCU COOLING COIL.
- AFTER ALL FCUS LOCATED ON 10TH FLOOR NORTH ARE CONNECTED TO NEW PIPING PERFORM 2ND PIPING FLUSH AND CLEAN ALL STRAINERS.

SHEET NOTES: 1 2 3 4 5 6 7

- CONNECT NEW 2-1/2" CHWS&R PIPING TO EXISTING DOWNSTREAM OF ISOLATION VALVE. ROUTE PIPING ABOVE AND ADJACENT TO THE EXISTING PIPING.
- OFFSET NEW PIPING DOWN TO EXISTING PIPING LEVEL PAST THE CUSTODIAL ROOM TO ALLOW IT TO FIT BELOW BEAM AT COLUMN 2.
- DEMOLISH PORTION OF EXISTING CHW PIPING TO INSTALL NEW PIPE IN THE EXISTING LOCATION. PROVIDE NEW PIPE HANGERS. PHASE TO PREVENT OUTAGES.
- DEMOLISH EXISTING COIL RUNOUT PIPING DOWNSTREAM OF ISOLATION VALVES. CONNECT NEW PIPING TO FCU COOLING COIL. SEE COIL PIPING DIAGRAM FOR ALL REQUIRED DEVICES.
- CONNECT EXISTING 3/4" CHWS&R PIPING SERVING EXISTING WATER COOLED COMPRESSOR LOCATED IN CUSTODIAL ROOM D10-52 TO NEW CHWS&R MAINS.
- PROVIDE FIRE BARRIER PROTECTION AT NEW PIPE PENETRATION.
- EXISTING ABANDONED CHW PIPING TO BE REMOVED. NO NEW PIPING REQUIRED FOR D10-25 & D10-27.



TENTH FLOOR NORTH - SECTION E
3/16" = 1'-0"



KEY PLAN - TENTH FLOOR NORTH
NOT TO SCALE