

# UConn HEALTH

## PROJECT SPECIFICATIONS

### **R1207 / 41 Convert to Zebrafish Facility**

**PROJECT NUMBER 19-063**

**Prepared by:**

The Department of Campus Planning, Design and Construction  
UConn Health  
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MARCH 6, 2020

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# NOTICE AND INSTRUCTIONS TO BIDDERS

## ARTICLE 1      GENERAL PROVISIONS

### **1.1      Contractor's Qualifications**

1.1.0 Each Bidder shall submit a completed University of Connecticut Health Center (UCHC) Contractor Qualification Statement demonstrating that it satisfies the UCHC's objective criteria for evaluating qualifications. Additionally, for projects \$500,000 and over the Contractor must be Pre-Qualified by the Department of Administrative Services and the UCHC for the work of this project.

1.1.2 Each Bidder shall demonstrate, to the satisfaction of UCHC, that it is able to post surety bonds satisfactory for the project and required by the Contract and that it possesses the financial, managerial and technical ability, and the integrity necessary to faithfully and efficiently perform the work for which it submits a bid, without conflict of interest.

1.1.3 UCHC shall evaluate whether the bidder is qualified based upon the bidder's experience with projects similar to that for which the bid is submitted, the nature of UCHC's experience, if any, with the Bidder on prior or ongoing UCHC projects and upon the above-stated and following objective criteria:

#### .1      Previous Experience

.1 The Bidder must show or be able to demonstrate to the satisfaction of UCHC that it possesses the ability and capacity to successfully complete the project through the satisfactory past performance of work of a similar nature, size, scope, and comparable dollar value to that of the subject work/projects.

.2 The Bidder shall demonstrate that it has maintained a satisfactory level of performance on such similar work continuously over a 5-year period preceding the date of the Bid. If the Bidder is unable to do so, it must include in the Qualification Statement any and all information demonstrating its ability and capacity to perform the Work.

.3 The Bidder shall be able to furnish references from Owners, Architects, or Engineers indicating that it has completed satisfactorily and in a timely manner work similar to the project being bid. If delays occurred, evidence explaining and exonerating the Bidder shall also be provided.

.4 The Contractor shall be able to demonstrate expertise in the various types of major trades or work required on the work/projects listed by example of successfully completed similar projects.

.5 All Contractors and major subcontractors must possess, at the time the Bid is submitted, a valid license, registration or certification issued by the Department of Consumer Protection in accordance with Connecticut General Statutes Section 20-341(a). If a joint venture, all joint venture partners shall be so licensed, registered or certified.

.6 If a Bidder intends to perform the work of any trade(s) with its own forces, and a license, registration or certification is required by the State of Connecticut in order to perform that work, the Bidder shall hold a valid license or registration

to perform work at the time its Bid is submitted. If a joint venture, all joint venture partners shall be so licensed, registered or certified.

.2 Financial Ability/bonding Capacity

- .1 The Bidder shall demonstrate that it has sufficient bonding capacity to perform the work in question, is bonded through a surety or sureties possessing a history of responsibility, financial stability and resources satisfactory to UCHC, and is able to post surety bonds which may be required by any contract for which it submits a bid.
- .2 The Bidder shall demonstrate, through the materials submitted in its Qualification Statement or as requested, that it possesses sufficient financial resources and stability, and is otherwise financially responsible and able to satisfactorily perform and complete the work for which it submit a bid.

.3 Managerial Ability

- .1 The Bidder shall have on its payroll, or must be able to prove that it customarily employs managerial and supervisory personnel of the type qualified to perform the kind of work which may be called for on any project for which it submits a bid.
- .2 The Bidder shall demonstrate, through the information submitted in its Qualification Statement or as requested, that it possesses the managerial resources, capability and commitment necessary for and satisfactory to UCHC for the proper performance of the work for which it submits a bid.

.4 Technical Ability

- .1 The Bidder or its principals shall own or possess rented or leased equipment of the type customarily required by contractors in the performance of contract work and that such equipment, if needed, is available for the job bid on.
- .2 The Bidder or its principals shall have adequate physical facilities in which and from which the Work can be performed.
- .3 The Bidder shall demonstrate, through the information submitted in its Qualification Statement or as requested, that it possesses the technical capacity, resources, capability and commitment for the proper performance of the Work for which it submits a bid.

.5 Integrity

- .1 The Bidder shall have purchased materials over the past five years from suppliers who customarily sell same in quantity to contractors.
- .2 The Bidder shall have a record of harmonious, cooperative, non-adversarial and honest relationships with Owners, including UCHC and the State of Connecticut if the Bidder has performed work on prior UCHC or State projects, as well as, with Architects, Engineers, and Consultants, Subcontractors and Suppliers on prior State projects or other projects.
- .3 The Bidder shall demonstrate that it has not been cited for three or more willful or serious violations of any OSHA, or of any standard, order or regulation promulgated pursuant to such act, during the 5-year period preceding this bid,



which violations were cited in accordance with the provisions of any State Occupational Safety and Health Act or the Occupational Safety and Health Act of 1970 and which were not abated within the time fixed by the citation; which citations have been set aside following appeal to the appropriate agency or court having jurisdiction.

- .4 The Bidder shall not have received one or more criminal convictions related to the injury or death of any employee in the 5-year period preceding this bid.
- .5 The Bidder shall not have appeared on any list published by the Connecticut State Labor Commission of persons or firms that have been found in violation of the National Labor Relations Act, 29 U.S.C. 151 et seq., by the National Labor Relations Board and by a final decision rendered by a federal court or that have been found in contempt of court by a final decision of a federal court for failure to correct a violation of said National Labor Relations Act on three or more occasions involving different violations during the five preceding calendar years, if the first day of July following publication of said list has occurred less than three years prior to the Award of any Contract to the Bidder.
- .6 The Bidder, or any entity in which the Applicant has an interest, shall not have appeared on any list published by the Connecticut State Labor Commission of persons or firms whom he has found to have disregarded their obligations under Connecticut General Statutes Section 31-53 and 31-76c to employees and subcontractors on public works projects or to have been barred from federal government contracts in accordance with the provisions of the Davis Bacon Act, 40 U.S.C. 276a-2, if said list has been published less than three years prior to the Award of any Contract to the Bidder.
- .7 The Bidder or its principals shall not have been convicted of, nor entered any plea of guilty, or nolo contendere, or otherwise have been found civilly liable for any criminal offense or civil action involving embezzlement; forgery; bribery; falsification or destruction of records; receipt of stolen property; collusion, antitrust, conspiracy or other offenses arising out of the submission of bids or proposals on public works project or contracts.
- .8 The Bidder shall not be the subject of any order in effect which has been issued by the Commission of Human Rights and Opportunities, pursuant to Connecticut General Statutes 46a-56 or any regulation, prohibiting any contracting agency of the State of Connecticut from entering into contracts with the Bidder. The Bidder shall also not be listed in any current list compiled by the Commission of contractors whom it has found to be in non-compliance with anti-discrimination or contract compliance statutes, nor shall the Bidder be the subject of any unabated or un-expired Notice of Non-Compliance issued by the Commissioner.
- .9 The Bidder shall demonstrate, through the information submitted in its Qualification Statement, that, by its past and present actions and conduct, and that of its principals and principal employees, it possesses the integrity necessary for, and satisfactory to UCHC, for the proper performance of the Work for which it submits a bid.

.6 Conflict of Interest

- .1 The Bidder shall disclose and identify to UCHC, with its Qualification Statement, any relationships which may constitute a potential conflict of interest with the Office of Facility Contracts & Leases, Facilities Development

and Operations, Purchasing Services, or any other UCHC organizations or department; or architect, engineer, consultant, or designer of the proposed project(s) for the purpose of determining whether a conflict of interest exists. All such disclosures require acceptance/approval action on the part of UCHC, which shall determine whether an impermissible conflict exists.

- .7 UCHC also reserves the right to find any Bidder to be non-responsible or non-qualified with respect to a specific project, notwithstanding the fact that it may have previously been selected for previous projects for UCHC.

## **1.2 Schedule**

- 1.2.1 It is important to UCHC, in order to maintain the integrity of its ongoing activities, that its rules and regulations and the requirements of the Contract Documents, regarding noise control, traffic control etc. and other matters which may affect its operations be strictly adhered to, and that its schedule be maintained. Therefore, all Bidders shall familiarize themselves with and comply with the schedule of UCHC, and its regulations regarding noise, traffic, etc. which are available from Facilities Development and Operations. No noise generating work shall be allowed where the noise will impact UCHC functions. Examples of noise generating work include, but are not limited to, sawing, drilling, and hammering/jack hammering. The Contractor shall keep UCHC Representative informed as to the location of its operations to enable necessary precautions or co-ordination to be implemented.

## **1.3 Non-Discrimination and Affirmative Action Provisions**

- 1.3.1 This Section is inserted in connection with Subsection (a) of Sections 4a-60, and 4a-60a of the General Statutes of Connecticut, as revised.
- 1.3.2 The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation or physical disability including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut. The Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved.
- 1.3.3 The Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission on Human Rights and Opportunities.
- 1.3.4 The Contractor agrees, to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission advising the labor union or workers' representative of the Contractor's commitments under Sections 4a-60 and 4a-60a of the Connecticut General Statutes, and to post copies of the notice in conspicuous places available to employees and applicants for employment.
- 1.3.5 The Contractor agrees to comply with each provision of Sections 4a-60, 4a-60a, 46a-68e and 46a-68f of the Connecticut General Statutes, and with each regulation or relevant order

issued by said Commission pursuant to Sections 46a-56, 46a-68e and 46a-68f of the Connecticut General Statutes.

- 1.3.6 The Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provision of Sections 4a-60, 4a-60a and 46a-56 of the Connecticut General Statutes. The Contractor further agrees and warrants that he will make good faith efforts to employ minority business enterprises as Subcontractors and suppliers of materials on the project.
- 1.3.7 The Contractor shall include the provisions of Clauses 1.4.1 through 1.4.6 and 1.4.8, (as provided in Connecticut General Statutes Sections 4a-60(a) and 4a-60a (a)) in every subcontract or purchase order entered in order to fulfill any obligation of a contract with the University and such provisions shall be binding on a Subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission.
- 1.3.8 The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the law of the United States or of the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation.

#### **1.4 Union Labor**

- 1.4.1 Attention is called to the fact that there may be construction work now being carried on at the site at which this construction is contemplated being done by UNION LABOR. This fact must be kept in mind by all Bidders submitting proposals for this work.

#### **1.5 Labor Market Area**

- 1.5.1 All Bidders shall have read Sections 31-52 and 31-52a of the Connecticut General Statutes, as amended. These references relate to the preference of State citizens, the preference of residents of the labor market area in which the work under the Contract is to be done and the penalties for violations.
- 1.5.2 In order to avoid violations by the Contractor and to cooperate with and assist UCHC in the implementation of the statutory mandates, any Contractor awarded a contract with UCHC shall be required to provide UCHC with the following information:
- .1 The names and addresses of employees utilized by the Contractor and by its Subcontractors and how long each such employee has resided in Connecticut.
  - .2 How long each employee has resided in the labor market area, as established by the State Labor Commissioner, in which the work under the Contract is to be done.
  - .3 Within thirty (30) days after the start of work, the Contractor shall submit a signed statement setting forth the procedures the Contractor and its Subcontractors have taken to assure that they have sought out qualified residents of the labor market area. Also, the statement shall include information as to how many persons were considered for employment and how many were actually hired. Such procedures will include, but not be limited to, obtaining names of available persons from area Employment Security Offices.

- .4 In the same manner as Clause 1.5.2.3 above, the statement shall indicate the steps taken to assure that the Contractor and its Subcontractors have sought out qualified residents of the State of Connecticut.
- .5 The Contractor shall cooperate with and provide information to UCHC Representative assigned to collect and verify the information required. UCHC may request that all such information be updated during the term of the Contract at reasonable times.
- .6 All such information gathered and compiled by UCHC shall be forwarded to the State Labor Commissioner.

## **1.6 Wage Rates**

- 1.6.1 Each contractor who is awarded a contract on or after October 1, 2002 shall be subject to provisions of the Connecticut General Statutes, Section 31-53 as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages".

## **ARTICLE 2 BIDDERS' REPRESENTATIONS**

- 2.1 The amount of each Bid shall be deemed to include the entire cost and expense of every item of labor and material necessary to complete the work bid upon, as specified, in full detail ready for use. The risk of all such costs and expenses shall be deemed assumed by the successful Bidder. UCHC shall assign a UCHC Representative to work with the successful Contractor as a liaison.
- 2.2 In performing its obligations under this Contract, the Contractor agrees to comply with all applicable statutes, laws, ordinances, regulations, codes, rules or orders of, or issued by, any governmental body having jurisdiction over the work, location of the work or contract.

## **ARTICLE 3 BIDDING DOCUMENTS**

### **3.1 Bid Clarifications, Addenda and Interpretations**

- 3.1.1 No interpretations of the meaning of the Drawings, specifications or other Contract Documents will be made orally to any Bidder. Every request for such interpretation must be made in writing to UCHC Office of Facility Contracts & Leases, and to be given consideration shall be received at least ten (10) days prior to the date fixed for the opening of Bids unless directed otherwise.
- 3.1.2 Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be mailed, emailed and/or faxed to all prospective Bidders (at the respective addresses furnished for such purposes) not later than five (5) days prior to the date fixed for the opening of Bids unless directed otherwise. Failure of any Bidder to receive any such addendum or interpretation shall not release any Bidder from any obligations under his Bid as submitted, provided notice has been sent to the address furnished by such prospective Bidder for the transmittal of notices, addenda and interpretations. It shall be the Bidder's responsibility to make inquiry as to, and to obtain, the Addenda issued, if any.
- 3.1.3 The number of days shown in 3.1.1 and 3.1.2 may differ from the actual dates given in an Agenda for a Pre-Bid or Pre-Proposal Conference, if so, the number of days listed are, hereby, superseded by the Agenda dates, unless the Bid or Proposal is extended by Addendum, in which case the number of days will again apply unless stated differently in the Addendum.

- 3.1.4 Bidders shall promptly notify the UCHC of any ambiguity, inconsistency or error which they may discover upon examination of these Contract Documents.

#### **ARTICLE 4 BIDDING PROCEDURES**

##### **4.1 Form of Proposal**

- 4.1.1 Enclosed within this Project Manual is a Bid Form. Bids shall be submitted on a copy of this form. Additional instructions to bidders including information on submission of bids and award and Contract appear on this form. This and all other documents required by these Bid Documents must be returned with your Bid.

##### **4.2 Bids and Rejection of Bids**

- 4.2.1 General Bids shall be for the complete work as specified and shall include the names of any Subcontractors for the classes of work specified in Article 4.1.1 below, and for each other class of work for which UCHC has required a separate section and the dollar amounts of their subcontracts, and the General Contractor shall be selected on the basis of such general Bids. It shall be presumed that the general Bidder intends to perform with its own employees all work in such four classes and such other classes, for which no Subcontractor is named. The general Bidder's qualifications for performing such work shall be subject to review by UCHC pursuant to the Bid and the Contract Documents.
- 4.2.2 Bids shall be submitted only on the forms furnished for the specific project, which shall include a completed Bid Form containing all information required on the Proposal form, executed with an original signature by a duly authorized officer or representative of the Bidder, and, in the case of a Joint Venture, by duly authorized representatives of each Joint Venturer. In no event will Bids or changes in Bids made by telephone or telefax be considered. Any Bid Form which omits or adds items, alters the form, contains conditional or alternative Bids, will be rejected.
- 4.2.3 Any Bids received after the scheduled closing time for the receipt of Bids will be returned to the Bidders unopened.
- 4.2.4 Any Bid may only be withdrawn by letter of request, signed by the depositing Bidder and presented to the Office of Facility Contracts & Leases, prior to the time of opening of any Bid for the project designated or identified project.

##### **4.3 Bid Security**

- 4.3.1 Each Bid must be accompanied by a Bid Bond in the form required by UCHC, having as surety thereto such surety company or companies acceptable to UCHC and as are authorized to do business in this State, for an amount not less than 10 per cent of the Bid, or the Bid may be accompanied by a certified check payable to the order of UCHC. All checks submitted by unsuccessful Bidders shall be returned to them after the Contract has been awarded. Bid Security is not required for projects under \$20,000.00.
- 4.3.2 Failure of the successful Bidder to file the required Performance and Labor & Material bonds shall be just cause for the amount of the security deposited with the Bid to be forfeited, any part of the whole of which may be used to make up the difference between the Bid of the defaulting Bidder and the Bid of the next lowest responsible qualified Bidder to whom the work is finally awarded. Failure to execute a contract after award as specified and bid shall also result in the forfeiture of such Bid Bonds or Certified Check.

#### **4.4 Subcontractors**

- 4.4.1 The Bidder agrees that each of the Subcontractors listed on the Proposal Form will be used for the work indicated at the amount stated unless a substitution is permitted by UCHC.
- 4.4.2 Within five days after being notified of the award of a general Contract by UCHC, or, in the case of an approval of a substitute Subcontractor by UCHC, within five days after being notified of such approval, the general Bidder shall present to each listed or substitute Subcontractor:
- .1 A subcontract in the form set forth in Section 4b-96 of the Connecticut General Statutes, which form is appended and is located under the subcontractor agreement section of the Invitation to Bid must be executed with all of Bidder's named subcontractors in Bidder's form of proposal.
  - .2 Notice of the time limit under this section for executing a subcontract: If a listed Subcontractor fails within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the general Bidder selected as a General Contractor, to perform his agreement to execute a subcontract in the form hereinafter set forth with such general Bidder, contingent upon the execution of the general Contract, the General Contractor shall select another Subcontractor, with the approval of UCHC. When seeking approval for a substitute Subcontractor, the general Bidder shall provide UCHC with all documents showing (a) the general Bidder's proper presentation of a subcontract to the listed Subcontractor and, (b) communications to or from such Subcontractor after such presentation. UCHC shall adjust the Contract Price to reflect the difference between the amount of the price of the new Subcontractor and the amount of the price of the listed Subcontractor if the new Subcontractor's price is lower and may adjust such Contract Price if the new Subcontractor's price is higher. The general Bidder shall, with respect to each listed Subcontractor or approved substitute Subcontractor, file with UCHC a copy of each executed subcontract within ten days, Saturdays, Sundays and legal holidays excluded, of presentation of a subcontract to such Subcontractor.

#### **ARTICLE 5 CONSIDERATION OF BIDS**

- 5.1 Every general bid which is conditional or which contains any addition not called for shall be invalid; and UCHC shall reject every such general Bid. UCHC shall be authorized to waive minor irregularities, which it considers in its best interest, provided the reasons for any such waiver are stated in writing by UCHC and made a part of the contract file. No such general Bid shall be rejected because of the failure to submit prices for, or information relating to, any item or items for which no specific space is provided in the general Proposal Form furnished by UCHC, but this sentence shall not be applicable to any failure to furnish prices or information required by Articles 4.2.1 and 4.4.1 above to be furnished in the form provided by UCHC. UCHC also reserves the right to reject any and all bids and again advertise for bids, or to otherwise proceed as permitted under Connecticut General Statutes 10a-109a through 10a-109y.
- 5.2 General Bids shall be publicly opened and read by UCHC forthwith. UCHC may require in the Proposal Form that the General Contractor agree to perform a stated, minimum percentage of work with his own forces. UCHC may also require the General Contractor to set aside a portion of the contract for Subcontractors who are eligible for set aside contracts. UCHC shall not permit substitution of a Subcontractor for one named in accordance with the provisions of these Instructions or substitution of a Subcontractor for any designated sub trade work bid to be performed by the General Contractor's own forces, except for good cause. The term "good cause" includes but is not limited to a Subcontractor's or, where appropriate, a General Contractor's: (1) Death or physical disability, if the listed Subcontractor is an individual; (2)

dissolution, if a corporation or partnership; (3) bankruptcy; (4) inability to furnish any performance and payment bond shown on the Proposal Form; (5) inability to obtain, or loss of, a license necessary for the performance of a particular category of work; (6) failure or inability to comply with a requirement of law applicable to Contractors, Subcontractors, on construction, alteration, or repair projects; (7) failure to perform his agreement to execute a subcontract under Connecticut General Statutes Section 4b-96 and Exhibit U appended hereto.

- 5.3 Pursuant to Connecticut General Statute § 4b-93, the general bid shall include plans and specifications detailing all labor and materials to be furnished the contract. The specifications shall have a separate section for each of the following classes of work if, in the estimate of UCHC, the class of work will exceed twenty-five thousand dollars: (1) Masonry work; (2) electrical work; (3) mechanical work other than heating, ventilating and air conditioning work; and (4) heating, ventilating and air conditioning work. Such specifications shall also have a separate section for each other class of work for which UCHC deems it necessary or convenient. The Bidder shall provide the names of the subcontractor and price of the subcontract for all classes of work designated on the Bid Form provided with the general Bid. **FAILURE TO CORRECTLY STATE A SUBCONTRACTOR'S PRICE SHALL BE CAUSE FOR REJECTION OF THE GENERAL BIDDER'S BID.**
- 5.4 Any General Contractor who violates any provision of Connecticut General Statutes Section 4b-95 may be disqualified from bidding on other contracts that are subject to the provisions of Chapter 60 of the General Statutes for a period not to exceed twenty-four months, commencing from the date on which the violation is discovered, for each violation.
- 5.5 UCHC reserves the right to accept or reject any or all Bids within 90 calendar days of the Bid opening, and the Bidder agrees that it may not modify, withdraw, or cancel its Bid and that its Bid Price will be firm for this 90 day period. This 90 day period may be extended by mutual agreement between UCHC and the Bidder.
- 5.6 The project will be awarded to the responsible qualified Bidder submitting the lowest Bid in compliance with the Bid requirements and within the budget, subject to the provisions of Connecticut General Statutes 10a-109a through 10a-109y.
- 5.7 UCHC reserves the right to elect to implement some, all or none of the Alternates and/or Options set forth in the Proposal forms, as may be in the best interest of UCHC. The low Bid shall be determined by taking the Base Price set forth in Proposal form as selected by UCHC, plus the Alternates and/or Options selected by UCHC.
- 5.8 The Bidder agrees that if selected as General Contractor, he shall, within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by UCHC, execute a contract in accordance with the terms of the general Bid.

## **ARTICLE 6 POST-BID INFORMATION**

### **6.1 Affirmative Action**

- 6.1.1 Pursuant to Connecticut General Statutes Section 46a-68d, if this project is estimated to cost more than \$50,000.00 then: In the event that the Bidder's Bid is accepted, after acceptance, but before a contract is awarded, the successful Bidder shall file and have approved by the Commission on Human Rights and Opportunities an Affirmative Action Plan. The Commission may provide for conditional acceptance of an Affirmative Action Plan provided written assurances are given by the Contractor that it will amend its plan to conform to affirmative action requirements. UCHC shall withhold 2% of the total Contract Price per month from any payment made to such Contractor until such time as the Contractor has developed an Affirmative Action Plan, and received the approval of the Commission.

- Notwithstanding the provisions of Connecticut General Statutes Section 46a-68d, a Contractor subject to the provisions of that Section may file a plan in advance of or at the same time as its Bid.
- 6.1.2 UCHC shall not enter into a contract with any Bidder or prospective Contractor unless the Bidder or prospective Contractor has satisfactorily complied with the provisions of Sections 4a-60, 32-9e, 46a-56 and 46a-68c to 46a-68f, inclusive of the Connecticut General Statutes, or submits a program for compliance acceptable to the Commission on Human Rights and Opportunities.
- 6.1.3 The Contractor shall designate an "Equal Opportunity Contract Compliance Officer" for the project. The Contractor designee, in addition to any other duties assigned by the Contractor, shall have the following responsibilities for the implementation of the Contractor Affirmative Action Plan (AAP) that is required for the project pursuant to Connecticut General Statutes Sections 46a-68c and 46a-68d.
- .1 Maintain a project EEO file to include all records, correspondence and other documentation related to the project AAP.
  - .2 Communicate to and inform all project Contractors and Subcontractors, regardless of tier, and labor referral organizations (if applicable) about project equal opportunity and AAP expectations and performance requirements.
  - .3 Compile all on-site Contractor MONTHLY EMPLOYMENT UTILIZATION REPORTS (form CHRO cc-257) and submit a cumulative report for the project each month to report on contractor compliance to project AAP hiring goals. The cumulative report shall be submitted to the contract awarding agency and to the Commission on Human Rights and Opportunities by the 15th day following the end of each calendar month during the pendency of the on-site construction work of the project.
  - .4 Attach a copy of your transmittal letter to CHRO as a document to be submitted with your invoice.
  - .5 Compile and submit a QUARTERLY SMALL CONTRACTOR AND MINORITY BUSINESS ENTERPRISE PAYMENT STATUS REPORT (form CHRO cc-258) to report on the participation of such Contractors identified to participate on the project. The report shall be submitted to the contract awarding agency and to the Commission on Human Rights and Opportunities by the 15th day following the end of each calendar quarter during the pendency of the on-site construction work of the project.
  - .6 Attach a copy of your transmittal letter to CHRO as a document to be submitted with your invoice.
  - .7 Participate in project job meetings to inform project Contractors about project equal opportunity and AAP performance.
  - .8 Coordinate "External Communication" section (employment outreach) of contractor AAP for all employment opportunities resultant during the course of the project from all project Contractors and maintain documentation of all contacts and responses.

## **ARTICLE 7 PERFORMANCE AND PAYMENT BOND**

### **7.1 Performance Bond**



7.1.1 Prior to the award of the Contract, the successful Bidder shall substitute for the Bid Bond or check accompanying his Bid, an executed UCHC Performance Bond, in the amount of 100 per cent of the Contract Price, conditioned upon the faithful performance of the Contract.

7.2 Labor and Material Payment Bond

7.2.1 At this same time, the Bidder shall submit a UCHC Labor and Material Payment Bond in the sum of not less than 100 per cent of the Contract Price, containing the condition that the Contractor will promptly pay for all material furnished and labor, supplied or performed in the prosecution of the work whether or not said material or labor is involved and/or becomes a component part of the structure or structures to be erected. Such additional bond shall be held for the use of each party who, as Subcontractor or otherwise, shall have furnished material or supplies or shall have performed labor in the prosecution of the work as herein provided and who has not been paid therefore. Such additional bond shall provide specifically that any person may bring suit thereon in the name of the person suing, prosecute the same to the final judgment and have execution thereon for such sum or sums as may be justly due. The State shall not be liable to furnish counsel nor for the payment of any costs or expenses of any such suit. This bond is to be furnished pursuant to Section 49-41 of the General Statutes of Connecticut, and claims thereon shall be subject to the provisions of Connecticut General Statutes Section 49-42.

**7.3 General Provisions Regarding Bonds**

7.3.1 The aforementioned Performance and Payment bonds shall be provided in the forms required by UCHC, samples of which are appended hereto. If the Contractor is a Joint Venture, all such bonds shall name all joint venturers as principals. The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney. The above bonds shall be required for projects for which the total estimated cost of labor and materials under the Contract is at least \$20,000.00. The above bonds shall be acceptable to UCHC and, as a minimum, issued through a bonding company licensed to transact such business in the State of Connecticut and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the "Treasury Department Circular 570."

END OF SECTION

### CONTRACTOR QUALIFICATION STATEMENT

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

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

PREQUALIFICATION FOR:  GENERAL CONTRACTOR     CONSTRUCTION MANAGER AT RISK  
 TRADE: \_\_\_\_\_

General Information

MBE    SBE    WBE    DBE

Name of Company: \_\_\_\_\_

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

City/State/Zip: \_\_\_\_\_

Main Office    Regional Office     Local Office

Corporation    Partnership    Sole Proprietorship    LLC    Joint Venture

Name of President/General Partners/Owner: \_\_\_\_\_

Parent Company: \_\_\_\_\_

Year Company Started: \_\_\_\_\_

State of Incorporation: \_\_\_\_\_ Date of Incorporation: \_\_\_\_\_

Other names your Company has operated under: \_\_\_\_\_

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

List of Corporate Officers, Partners, Proprietors, & Members of your Organization: \_\_\_\_\_

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

Contractor's License Number: \_\_\_\_\_ State: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Contractor's License Number: \_\_\_\_\_ State: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Contractor's License Number: \_\_\_\_\_ State: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

List any Subsidiaries and Affiliates of your Company: \_\_\_\_\_  
\_\_\_\_\_

List jurisdictions and/or trade categories in which your Firm is legally qualified to do business. It is mandatory that the firm be legally qualified to do business in the State of Connecticut. If the applicant is a joint venture, all joint venture partners must be qualified to do business in the State of Connecticut. Connecticut General Statutes: 20-341gg; 20-330 et seq.; 33-615. \_\_\_\_\_  
\_\_\_\_\_

**RELEVANT EXPERIENCE**

Trade that your Company is requesting to be qualified: \_\_\_\_\_

List categories of work that your company normally performs with its own forces: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Upon request provide the Agency with a list of major projects your organization has completed in the past five years, giving the name of the project, owner, architect, date of completion, and percentage of the cost of the work performed with your own forces.

**DAS PREQUALIFICATION**

Prequalification by the State of Connecticut, Department of Administrative Services (DAS) is not required however each bidding contractor so qualified shall complete information below.

DAS Prequalification (List all DAS Categories which your firm is currently Pre-Qualified): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Provide and attach to this Contractor Qualification Statement the following information;

- √ **Provide a copy of your current DAS Certificate for the Classification required in this specific project.**

**CLAIMS & SUITS**

Within the past 5 years has your firm or any part of your firm; any owner, or partial owner of your firm; or any other person in any way associated with or employed by your firm ever been barred, suspended,

disqualified or otherwise precluded from bidding or offering a proposal on contracts by any municipality or any agency of the State of Connecticut, other states, or the Federal Government? **YES / NO**

√ **If yes, on a separate page, include an explanation of any previous debarment and copies of any notice of reinstatement.**

State whether within the past 5 years you have been defaulted, terminated, or have had any liquidated damages or other contractual penalties for failures to timely or properly perform a contract assessed against you and indicate the current status of any litigation involving those transactions. **YES / NO**

√ **If yes, on a separate page, include an explanation of any previous default, termination or damage assessment and copies of any notice of reinstatement.**

State whether within the past 5 years you have been declared to be a non-responsible bidder or proposer on any public work project? and identify the project and date of the findings. **YES / NO**

√ **If yes, on a separate page, identify the project name, the Owner of the project and the date of the findings.**

Please indicate either yes or no to the following questions. You may attach a separate sheet to explain any yes answers. For any yes answer in response to the following questions please identify the offense, along with the location of the court or tribunal administering the matter, and the docket or proceeding number of the matter.

Has your firm or any part of your firm, any owner, or partial owner of your firm, or any person in any way associated with or employed by your firm ever:

Had a conviction or entry of a plea of guilty or nolo contendere for commission of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract or in the performance of such contract or subcontract? (Connecticut General Statute31-57c) **YES / NO**

\_\_\_\_\_

Had a conviction or entry of a plea of guilty or nolo contendere under state or federal law for embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty which affects responsibility as a contractor? (Connecticut General Statute31-57c) **YES / NO**

\_\_\_\_\_

Had a conviction or entry of a plea of guilty or nolo contendere under state or federal antitrust, collusion or conspiracy statutes arising out of the submission of bids or proposals? (Connecticut General Statute31-57c) **YES / NO**

\_\_\_\_\_

Been cited for noncompliance with contract provisions on a public project, of a character regarded by the awarding authority to be of such gravity as to indicate a lack of responsibility to perform as a state contractor, including deliberate failure, without good cause, to perform in accordance with specifications or time limits provided in a contract? **YES / NO**

\_\_\_\_\_

Within the previous 5 years compiled a record of failure to perform or of unsatisfactory performance in accordance with the terms of one or more contracts, unless such failure to perform or unsatisfactory performance was caused by acts beyond your control? **YES / NO**

\_\_\_\_\_

On a public project or contract, been cited for any other cause the awarding authority determined to be so serious or compelling as to affect responsibility as a state contractor, including disqualification by another governmental entity, having caused financial loss to the state or having caused a serious delay or inability of state officials to carry out their duties on a past contract or contracts? **YES / NO**

\_\_\_\_\_

On a separate sheet of paper, identify all litigation or arbitration proceedings including out of court settlements initiated by or against you within the past five (5) years including all pending cases. List the name of the project, the project location and the court or arbitration number and location. Briefly describe, use a separate sheet if necessary, the circumstances and disposition of each case. Specifically identify and provide details of each instance of claims or legal proceedings by or against a public or private Owner. Please note that generalized responses such as "litigation arising in the ordinary course of doing business" are not acceptable.

\_\_\_\_\_

On a separate sheet of paper, identify any OSHA citations within the past five (5) years under present business name or any past business name. Have you been cited for three or more willful or serious violations of OSHA, or of any standard, order or regulations promulgated pursuant to such Act which violations were cited in accordance with the provisions of any State Occupational Safety and Health Act or the Occupational Safety and Health Act of 1970 and which were not abated within the time fixed by the citation; and which citation has not been set aside following appeal to the appropriate agency or court having jurisdiction? Additionally list any criminal convictions related to the injury or death of any employee. (Connecticut General Statute 31-57b)

\_\_\_\_\_

Have you appeared on any list published by the Connecticut State Labor Department of persons or firms that have been found by the National Labor Relations Board and by a final decision rendered by a Federal Court to have been in violation of the National Labor Relations Act, 29USC 151 et. seq. or to have been found in contempt of court by a final decision of a Federal Court for failure to correct a violation of the National Labor Relations Act on three or more occasions involving different violations? (Connecticut General Statute 31-57a) **YES / NO**

√ **If the answer to the preceding question is "yes" state the date of publication of such list by the Connecticut State Labor Department.** \_\_\_\_\_

On a separate sheet of paper, identify any instances within the previous five years in which you or any entity in which you have an interest, has appeared on a list published by the State of Connecticut Labor Department of persons or firms who the Labor Department has found you to have disregarded or violated your obligations to employees and subcontractors on public works projects under Connecticut General Statutes 31-53 and 31-76c (i.e. payment of prevailing wages and overtime payments) or in which you have been barred from Federal government contracts in accordance with the provisions of the Davis Beacon Act, 40 U.S. C. 276a-2. Describe in detail the circumstances of each violation, including

but not limited to, the date and nature of the violation, the project on which the violation occurred, the source, if known, of any complaint giving rise to any Department of Labor investigation, the results of any such investigation, the penalty imposed or other action taken by the Department of Labor, any remedial action which was taken and any other resolution of any such complaint or violation. (Connecticut General Statute 31-53a)

On a separate sheet of paper, identify any instances in which any complaint has been made to, or any investigation or inquiry has been conducted by, the State of Connecticut Department of Labor regarding any alleged non-compliance by your or by any subcontractors on your previous projects, of any provision of Part III of Chapter 557 (Connecticut General Statutes Sections 31-52 through 31-57e, prevailing wage and other requirements) and Chapter 558 (Connecticut General Statutes Sections 31-58 through 31-761, minimum wage, overtime and other requirements) during the five calendar years immediately preceding this Application. Describe in detail the circumstances of each violation, including but not limited to, the date and nature of the violation, the project on which the violation occurred, the source, if known, of any complaint giving rise to any Department of Labor investigation, the results of any such investigation, the penalty imposed or other action taken by the Department of Labor, any remedial action which was taken and any other resolution of any such complain or violation.

- √ If in the event that there were such instances as described in your responses, you are further required to provide with your Application a written statement of the policy and procedures you would implement on this project in an effort to insure that you and your subcontractors would remain in compliance with the statutory requirements for wage rates and payment of wages as noted above. \_\_\_\_\_

State whether you have ever been cited or penalized by any government agency for failure to comply with any affirmative action, non-discrimination, or other human rights requirements applicable to any work performed by you. If so, provide the date(s), details, disposition and docket number(s) for each such instance.

On a separate sheet of paper, identify any criminal charges, indictments or civil enforcement actions currently pending against you or your principals involving any of the offenses or violations referred to above? If so identify the offense(s), court docket number and status of proceeding(s).\_\_\_\_\_

Have you ever been found by the Connecticut Department of Public Works, or another State Agency to be in violation of the subcontractor listing requirements or other provisions of Connecticut General Statutes Section 4b-95? **YES / NO**

- √ **If yes, on a separate page, indicate the nature, date and circumstances of any such violation.**

Have you ever been cited for or been the subject of a civil or criminal court proceeding alleging that you have violated the provisions of Connecticut General Statutes Sections 31-52 or 31-52a regarding providing preference to Connecticut citizens or residents in the construction of public buildings or works? **YES / NO**

- √ If yes, provide details concerning the date, circumstances and disposition of any such citation or court proceeding

**MANAGERIAL ABILITY**

Upon request provide the Agency with a list of construction experience and present commitments of the key individuals of your organization. Additionally list the personnel, together with their qualifications and resumes, of whom would most likely be assigned to the project team for this project, including but not limited to the Project Executive, Site Manager, Project Manager(s), Safety Engineer/Superintendent, support staff, either located at the University or your home office or both for administrative, accounting, estimating etc. State the specific anticipated involvement of each individual in the project. Such proposed project team shall demonstrate through their resumes, relevant experience in like size projects, duration and scope as the one you are submitting to be prequalified for.

**TECHNICAL ABILITY**

Every Firm is expected to have in place a QA/QC/CC program and procedures as well as a Health and Safety Plan. Upon request such information shall be provided to the Agency.

QA/QC/CC program and procedures should include, but not be limited to, a description of any and all inspection and testing procedures and activities, the various steps and procedures and methods used in the QA/QC/CC process, the nature and qualifications of the internal team and/or organizations and process are being followed from the planning, through construction, and through any applicable warranty or post construction period, the methods used to report on inspections and observations such as, Quality Control reports, the methods to report to the Owner and to address and correct instances of contract and code non-compliance and construction and/or design defects and deficiencies, and whether your firm’s QA/QC/CC program and procedures are in writing.

---

**FINANCIAL**

**Provide a letter from your Bonding Company or its representative confirming bonding limits.**

Name and address of bonding company: \_\_\_\_\_  
\_\_\_\_\_

What is the most current rating the A.M. Best Company has assigned your bonding company? \_\_\_\_\_

Total bonding capacity as of the first working day of this month, state in dollars, not as a range:  
\$ \_\_\_\_\_

Total bonding committed as of the first working day of this month, state in dollars not as a range:  
\$ \_\_\_\_\_

Maximum bonding permitted by your Bonding Company for a single project for your firm, state in dollars not as a range:  
\$ \_\_\_\_\_

Provide a listing of your anticipated completion of current bonded work to indicate when additional capacity will be available.

Does your bonding company hold a Certificate of Authority as an acceptable Surety and/or Reinsuring Company acceptable to the US Department of Treasury?

\_\_\_\_\_yes \_\_\_\_\_no

**If requested the Bidder shall provide a copy of the most recent Audited or Reviewed Financial Statement.**

**WORKERS COMPENSATION INSURANCE CERTIFICATE**

Attach a sample copy of your Connecticut Workers Compensation Insurance Certificate. Also please provide your National Council on Compensation Insurance (NCCI) Experience Modification Sheet and state here your Workers Compensation Experience Modification: \_\_\_\_\_

If the Contractor's workers compensation experience modification rating is in excess of 1.00, the Contractor shall demonstrate to the satisfaction of the University with their submission, a letter detailing the reasons why your rating is in excess and what managerial commitment your firm is taking to reduce its rating as necessary for and satisfactory to the University for the proper performance of the work for which it intends to bid.



**ACKNOWLEDGEMENT**

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of Two Thousand and \_\_\_\_\_ (\_\_\_\_\_)

Name of Company: \_\_\_\_\_

Completed by: \_\_\_\_\_

(must be an Officer of the Company)

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

\_\_\_\_\_ being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as to not be misleading.

Subscribed and sworn before me this \_\_\_\_\_ Day of \_\_\_\_\_, \_\_\_\_\_

Notary Public: \_\_\_\_\_ My commission expires: \_\_\_\_\_

**CONTRACTOR QUALIFICATION DOCUMENT CHECKLIST**

As part of this submission, the Contractor shall include the following information (hard copy documentation):

- State Department of Administrative Services Certificate of Pre-qualification
- Letter from Bonding Company
- National Council on Compensation Insurance (NCCI) experience Modification Sheet.
- Copies of your company's licenses, registrations, and/or certifications from the State of Connecticut.

Upon request, the Contractor shall be prepared to provide any or all of the following information (hard copy documentation) as part of or in addition to this submission:

- Explanation of any all Claims or Suits, attach all details
- A list if any citations for alleging that you or your company have violated the provisions of Connecticut General Statutes Sections 31-52 or 31-52a.
- List of construction experience and commitments of key individuals of your organization. Include list of personnel, with their qualifications and resumes. (See Section on Managerial Ability).
- Company Quality Assurance/Quality Control/Code Compliance Program and Procedures as well as Health and Safety Plan
- Copy of most recent Audited or Reviewed Financial Statement

**PROJECT NAME:** R1207 / 41 CONVERT TO ZEBRAFISH FACILITY

**PROJECT NUMBER:** 19-063

**PROPOSAL OF:**  
BIDDER'S NAME

BIDDER'S ADDRESS

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

1. In accordance with Connecticut General Statutes Sections 10a-109a through 10a-109y and pursuant to, and in compliance with your Invitation to Bid, the Notice and Instructions to Bidders, the Form of Contract, including the conditions thereto, the form of required bond, I (we) propose to furnish the labor and/or materials installed as required for the project named and numbered on the BID FORM of this proposal to the extent of the Proposal submitted herein, furnishing all necessary equipment, machinery, tools, labor and other means of construction, and all materials specified in the manner and at the time prescribed strictly in accordance with the provisions of the Contract including specifications and/or drawings together with all addenda issued and received prior to the scheduled closing time for the receipt of the bids, and in conformity with requirements of the University of Connecticut and any laws or departmental regulations of the State of Connecticut or of the United States which may affect the same, for and in consideration of the price(s) stated on the said BID FORM, hereof.
  
2. The Lump Sum Base Bid by me (us) on the BID FORM includes all work indicated on the drawings and/or described in the specifications, except:
  - A. Work covered by Alternates as may be listed on the BID FORM.
  - B. Contingent work covered by Unit Prices as may be listed on the BID FORM.
  - C. Work covered by Options as may be listed on the BID FORM.
  
3. This proposal is submitted subject to and in compliance with the foregoing and following conditions and/or information.
  - A. AWARD: All proposals shall be subject to the provisions and requirements of the Bid Documents and for purpose of award, consideration shall be given only to proposals submitted by qualified and responsible bidders.
  - B. COMMENCEMENT AND COMPLETION OF WORK: Contractor shall commence and complete the work in accordance with the requirements of the Contract Documents.

C. If the Contractor fails to complete the work within the time required by the Contract Documents, the University shall have the right to assess liquidated damages as provided in Paragraph 9.11 of the General Conditions.

D. AVAILABILITY OF FUNDS:

The funding for this project is contingent upon the continued availability of funds. Funds will be released based on project phases.

E. CONTRACTORS INSURANCE REQUIRED:

1. The limits of liability and coverages shall be those set forth in Article 11 of the General Conditions.

F. STATEMENT OF BIDDERS' QUALIFICATIONS AND INTENTION OF OBJECTIVE CRITERIA:

1. Each Project estimated to be \$500,000 and greater, Bidders shall be required to complete and submit qualification forms to obtain "Pre-qualified Status" prior to submission of Bids. Contractors not obtaining "Pre-qualified Status" shall not be allowed to submit a Bid on said projects.

2. For Projects estimated to be less than \$500,000 the Bidder shall complete and submit with this BID FORM the Contractor's Qualification Statement in support of its Qualifications to perform the Work of this project, and to demonstrate its compliance with the University's Objective Criteria regarding Qualifications.

G. FEDERAL & STATE WAGE DETERMINATIONS AND PRICING CONSIDERATION:

1 Each contractor who is awarded a contract on or after October 1, 2002 shall be subject to provisions of the Connecticut General Statutes, Section 31-53 as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages".

2 In determining bid price, consideration should be given to Section 31-53 of the General Statutes of Connecticut as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages". Such prevailing wage adjustment will not be considered a basis for an annual contract adjustment.

3 The State of Connecticut Labor Department Wage Schedule where required, shall be provided with these documents, typically as part of the University of Connecticut Health Center Purchasing Department issued documents, or will be incorporated in the Contract Documents as an Addendum. At the time of bidding, the bidder agrees to accept the current prevailing wage scale, as well as any annual adjustment to the prevailing wage scale, as provided by the Connecticut Department of Labor. Wage Rates will be posted each July 1st on

the Department of Labor website: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us). Such prevailing wage adjustment will not be considered a basis for an annual contract amendment.

4. I (We), the undersigned, hereby declare that I am (we are) the only person(s) interested in the proposal and that it is without any connection with any other person making any bid for the same work. No person acting for, or employed by, the State of Connecticut is directly interested in this proposal, or in any contract which may be made under it, or in expected profits to arise there from. This proposal is made without directly or indirectly influencing or attempting to influence any other person or corporation to bid or refrain from bidding or to influence the amount of the bid of any other person or corporation. This proposal is made in good faith without collusion or connection with any other person bidding for the same work and this proposal is made with distinct reference and relation to the plans and specifications prepared for this Contract. I (We) further declare that in regard to the conditions affecting the work to be done and the labor and materials needed, this proposal is based solely on my (our) investigation and research and not in reliance upon any representations of any employee, officer or agent of the State.
5. Each class of work set forth in a separate Section of the Specifications and designated as a subtrade in Item 2A of the proposal pages shall be the matter of a subcontract made in accordance with the procedures set forth in the Bid and Contract Documents.
6. The undersigned agrees that, if selected as General Contractor, he shall, within five (5) days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the University of Connecticut, execute a contract in accordance with the terms of this general bid.
7. The undersigned agrees and warrants that he has made good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials under such contract and shall provide the Commission on Human Rights and Opportunities with such information as is requested by the Commission concerning his employment practices and procedures as they relate to the provisions of the Connecticut General Statutes governing contract requirements.
8. The undersigned agrees that if notice of acceptance of Bid is delivered to him within 120 calendar days from the date of bid opening, he will promptly execute a contract for the above stated compensation.

**BID FORM CONTINUED ON NEXT PAGE**

The undersigned proposes to furnish all labor and material required for:

**R1207 / 41 Convert To Zebrafish Facility  
19-063**

in accordance with the accompanying Drawings and Specifications prepared by

**University of Connecticut Health Center  
Department of Campus Planning, Design and Construction**

for the Contract Price specified below subject to additions and deductions according to the terms of the Contract Documents dated March 6, 2020.

**A. ADDENDA:**

This bid includes Addenda numbered: \_\_\_\_\_ Dated \_\_\_\_\_  
\_\_\_\_\_ Dated \_\_\_\_\_  
\_\_\_\_\_ Dated \_\_\_\_\_  
\_\_\_\_\_ Dated \_\_\_\_\_

**B. ALLOWANCES: not used**

**C. PROPOSED BASE CONTRACT PRICE:**

\_\_\_\_\_ \$ \_\_\_\_\_  
Written Figures

**D. SCHEDULE OF ALTERNATES:**

The undersigned Bidder further proposes and agrees that should the following Alternates be accepted and included in the Contract, the amount of the Lump Sum Bid, as heretofore stated, shall be adjusted by the amount of said Alternates. All materials and workmanship shall be in strict accordance with the Drawings and Specifications and shall be in-place prices.

**Alternate No. 1: As indicated on Drawing SP-1, provide alternate pricing for the installation of access control system to entrance door to R1207.**

For the provision of all labor, materials, and equipment required as detailed in the Drawings and Specifications **ADD** to the Base Bid a lump sum of:

\_\_\_\_\_ Dollars (\$) \_\_\_\_\_  
(Written) (Figures)

**E. SCHEDULE OF UNIT PRICES: not used**

F. **SCHEDULE OF OPTIONS: not used**

G. **SUBDIVISION OF CONTRACT PRICE:**

The subdivision of the proposed Contract Price is as follows:

**ITEM 1A** Subcontractors and prices for the following trades must be listed (if such prices exceed \$25,000.00). However, the general bidder may list himself together with his price if he customarily performs any of the trades specified. If the general contractor requires a performance and/or labor & material payment bond then the general contractor must indicate below which of the subcontractors are subject to this requirement. The amount (%) shall not exceed the subcontractor's price listed below.

DESCRIPTION	NAME OF SUBCONTRACTOR	DOLLAR AMOUNT	LABOR & MATERIAL BOND	PERFORMANCE BOND
MASONRY				
ELECTRICAL				
MECHANICAL WITHOUT HVAC				
HVAC				

The undersigned agrees that each of the subcontractors listed on this BID FORM will be used for the work indicated at the amount stated, unless a substitution is permitted by the University of Connecticut Health Center. Such permission shall only be granted for "good cause" as defined by Connecticut General Statute Section 4B-95(C).

**ITEM 1B SCHEDULE OF VALUES:**

The undersigned agrees that the Schedule of Values submitted with this Bid is a true representation of the distribution of the costs of this project and **equals the Proposed Base Contract Price shown above**. The Schedule of Values is an integral part of this proposal. Please indicate N/A for those divisions of work not applicable.

\*Refer to ITEM 1A above for stipulations pertaining to those Divisions of Work requiring listing of subcontractors and pricing.

**SCHEDULE OF VALUES**

Division 1, General Requirements \_\_\_\_\_

Division 2, Site Construction \_\_\_\_\_

Division 3, Concrete \_\_\_\_\_

\*Division 4, Masonry \_\_\_\_\_

Division 5, Metals \_\_\_\_\_

Division 6, Wood & Plastic \_\_\_\_\_

Division 7, Thermal and Moisture Protection \_\_\_\_\_

Division 8, Doors & Windows \_\_\_\_\_

Division 9, Finishes \_\_\_\_\_

Division 10, Specialties \_\_\_\_\_

Division 11, Equipment \_\_\_\_\_

Division 12, Furnishings \_\_\_\_\_

Division 13, Special Construction \_\_\_\_\_

Division 14, Conveying Systems \_\_\_\_\_

\*Division 15, Mechanical, without HVAC \_\_\_\_\_

\*Division 15, Mechanical, HVAC \_\_\_\_\_

\*Division 16, Electrical \_\_\_\_\_

**TOTAL OF PROPOSED BASE CONTRACT PRICE** \_\_\_\_\_



H. CONTRACTORS CERTIFICATION

We certify that we are familiar with the contents of the Contract Documents for this project and that we have examined the site and accept the conditions under which the work will be done.

NOTE: All proposals must be signed by a duly authorized representative of the firm. NO FACSIMILE SIGNATURE PERMITTED.

If this proposal is being submitted by a Joint Venture, each Joint Venture shall sign the Proposal, and each Joint Venture agrees to be bound by the terms and conditions thereof.

Signed the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

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

(TO BE FILLED IN AND SIGNED BY THE BIDDER)

Firm Name: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Duly Authorized Signature: \_\_\_\_\_

Name / Title \_\_\_\_\_

(TO BE FILLED IN AND SIGNED BY JOINT VENTURE IF APPLICABLE)

Firm Name: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Duly Authorized Signature: \_\_\_\_\_

Name / Title \_\_\_\_\_

Duly Authorized Signature: \_\_\_\_\_

Name / Title \_\_\_\_\_

END OF SECTION

**UNIVERSITY OF CONNECTICUT  
PURCHASING DEPARTMENT  
STATE OF CONNECTICUT  
STANDARD BID BOND**

**NOW ALL MEN BY THESE PRESENTS,**

That we, \_\_\_\_\_ hereinafter called the principal, of \_\_\_\_\_, as principal, and \_\_\_\_\_, hereinafter called the Surety, a corporation organized and existing under the laws of the State of \_\_\_\_\_, and duly authorized to transact a surety business in the State of Connecticut, as Surety, are held and firmly bound unto the State of Connecticut, as obligee, in the penal sum of ten (10) percent of the amount of the bid set forth in a proposal hereinafter mentioned, \_\_\_\_\_, in lawful money of the United States of America, for the payment of which sum, well and truly to be made to the Obligee, the Principal and the Surety bind, themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH,**

That, whereas the Principal has submitted or is about to submit a proposal the other obligee related to a contract for **Project No.** \_\_\_\_\_.

**NOW, THEREFORE,** if the said contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter in the said contract in writing with the State of Connecticut and give the required bonds, with surety acceptable to the Obligee, or if the Principal shall fail to do so, pay to Obligee the damages which the Obligee may suffer by reason of such failure not exceeding the penal sum of this bond, then this obligation shall be void, otherwise to remain in full force and effect.

SIGNED, SEALED AND DATED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Surety

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title



**UNIVERSITY OF CONNECTICUT  
LABOR & MATERIAL PAYMENT BOND**

**BOND NO.** \_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS:**

That \_\_\_\_\_ of,  
\_\_\_\_\_, (hereinafter called the Principal) as Principal, and  
\_\_\_\_\_ a corporation duly established under the laws of the State of  
\_\_\_\_\_ and duly authorized to transact business in the State of Connecticut  
(hereinafter called the Surety(ies)) as Surety(ies), are firmly bound and held unto the UNIVERSITY OF  
CONNECTICUT, as Obligee, in the sum of \_\_\_\_\_  
DOLLARS (\$ \_\_\_\_\_), for the payment of the Principal and Surety(ies) binds, itself, its  
successors and assigns, himself, his heirs, executors, administrators, and assigns, jointly and severally by these  
presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

**WHEREAS**, the principal has entered into or intends to enter into a written contract (the "contract") with the  
University of Connecticut for the construction of \_\_\_\_\_  
\_\_\_\_\_, which contract, together with all plans and  
specifications now made or which may hereafter be made in extension, modification or alteration thereof, is  
hereby referred to, incorporated in, and made a part of this bond as though fully set forth herein.

**NOW, THEREFORE**, if the principal faithfully makes payment for all materials and labor used or employed in the  
performance of the contract, as required by the contract documents and the General Statutes of Connecticut, as  
amended, then this obligation shall be null and void; otherwise it shall remain in full force and effect. This bond  
is provided pursuant to Sections 49-41 et seq. Of the General Statutes of Connecticut and shall be governed  
thereby.

Signed, sealed and executed at \_\_\_\_\_  
this \_\_\_\_\_, day of \_\_\_\_\_, 20\_\_.

Signed, sealed and delivered in the presence of :

\_\_\_\_\_  
\_\_\_\_\_ (L.S.)

Principal

\_\_\_\_\_  
As to Principal

Signed, Sealed and Executed at \_\_\_\_\_  
this \_\_\_\_\_, day of \_\_\_\_\_, 20\_\_.

Signed, sealed and delivered in the presence of :

\_\_\_\_\_  
\_\_\_\_\_ (L.S.)

\_\_\_\_\_  
As to Surety(ies)

# DRAFT AIA® Document A101™ - 2017

## Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

### AIA A101-2017 FOR GC PROJECT

FINAL 10/31/18 rev. 11/28/18

AGREEMENT made and effective as of the date that the Agreement is fully executed by the parties hereto« »  
(In words, indicate day, month and year.)

BETWEEN the Owner:  
(Name, address and other information)

« »« »  
« »  
« »  
« »

and the Contractor:  
(Name, address and other information)

« »« »  
« »  
« »  
« »

for the following Project:  
(Name, location and description)

« »  
« »  
« »

The Architect:  
(Name, address and other information)

« »« »  
« »  
« »  
« »

The Owner and Contractor agree as follows.

**ADDITIONS AND DELETIONS:**  
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.



**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, the AIA A201-2017 General Conditions, as modified by the Owner prior to the execution of this Agreement (as so modified, the “General Conditions”), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

§ 2.1 The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

*(Check one of the following boxes.)*

[  ] The date of this Agreement.

[  ] A date set forth in a notice to proceed issued by the Owner.

[  ] Established as follows:

*(Insert a date or a means to determine the date of commencement of the Work.)*

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

*(Check one of the following boxes and complete the necessary information.)*

[  ] Not later than  (  ) days from the date of commencement of the Work.

[  ] By the following date:

In addition to the foregoing, the Work shall be performed in general conformance with the preliminary construction schedule attached hereto as Exhibit D. Upon the Owner's approval of the construction schedule to be submitted by the Contractor pursuant to the requirements set forth in Section 3.10.1 of the General Conditions, such preliminary construction schedule shall be superseded and replaced by such approved construction schedule.

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
[REDACTED]	[REDACTED]

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

**ARTICLE 4 CONTRACT SUM**

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.1 The Contract Sum is based upon and includes the following alternates, if any, which are further described in the Contract Documents and are hereby accepted by the Owner.

[REDACTED]	[REDACTED]
------------	------------

All alternate prices set forth in this Section 4.2.1 and in Section 4.2.2 below are "All-Inclusive Prices". For the purposes of this Agreement an "All Inclusive Price" is a price for a portion of the Work which represents the total cost to the Owner for the Contractor's performance, furnishing and installation of such portion of the Work including, without limitation, overhead and profit thereon. Alternate prices are good for both adds and deducts.

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.

*(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

Item	Price	Conditions for Acceptance
[REDACTED]	[REDACTED]	[REDACTED]

§ 4.3 Allowances, if any, included in the Contract Sum:

*(Identify each allowance.)*

Item	Price
[REDACTED]	[REDACTED]

§ 4.4 Unit prices applicable to the Work, if any, are set forth below (the "Unit Prices").

Unit Prices shall be valid for the life of the Project and represent All-Inclusive Prices. Unit prices are good for both adds and deducts.

Item	Units and Limitations	Price per Unit (\$0.00)
[REDACTED]	[REDACTED]	[REDACTED]

**§ 4.5 Liquidated Damages:**

It is acknowledged that the Contractor's failure to achieve Substantial Completion of the Work within the Contract Time provided by the Contract Documents will cause the Owner to incur substantial economic damages and losses of types and in amounts which are impossible to compute and ascertain with certainty as a basis for recovery by the Owner of actual damages, and that liquidated damages represent a fair, reasonable and appropriate estimate thereof. Accordingly, in lieu of actual damages for such delay, the Contractor agrees that liquidated damages may be assessed and recovered by the Owner as against the Contractor and its Surety in the event of delayed completion, without the Owner being required to present any evidence of the amount or character of actual damages sustained by reason thereof.

Therefore, the Contractor shall be liable to the Owner for payment of liquidated damages in the amount of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) for each day that Substantial Completion is delayed beyond the date set forth herein for the achievement of Substantial Completion, as adjusted for time extensions as may have been granted pursuant to the terms and conditions of the Contract Documents. Such liquidated damages are intended to represent estimated actual damages and are not intended as a penalty, and the Contractor shall pay them to the Owner without limiting the Owner's right to terminate this Agreement as provided elsewhere herein.

If, pursuant to Section 3.3.2, the Contractor is required to achieve Substantial Completion of any portion of the Work prior to the date required for the Substantial Completion of the entirety of the Work, the Owner shall be entitled to assess the foregoing liquidated damages for the failure of the Contractor to complete such portion of the Work by the applicable Substantial Completion Date reflected in Section 3.3.2, as adjusted for time extensions as may have been granted pursuant to the terms and conditions of the Contract Documents.

The collection of liquidated damages by the Owner under this Section 4.5 shall be in addition to, and not in lieu of, the Owner's right to recover from the Contractor the Owner's increased costs to complete the Project arising from the Contractor's delay. Further, such liquidated damages shall in no way limit the Owner's other rights under this Agreement or the Owner's entitlement to damages for any other injury, damage or loss, other than for delay, for which the Contractor may be responsible.

§ 4.6 Not Used.

## **ARTICLE 5 PAYMENTS**

### **§ 5.1 Progress Payments**

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 The Owner shall make payments of amounts certified by the Architect and properly due to the Contractor under each Application for Payment within thirty (30) days after the Owner's and the Architect's receipt of such Application for Payment, provided it is properly submitted, correct and accepted by the Owner in accordance with the provisions of Article 9 of the General Conditions.

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect and the Owner may require. This schedule unless objected to by the Architect or the Owner shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.



§ 5.1.6 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work; and
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, and, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of the General Conditions;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of the General Conditions;
- .5 Retainage withheld pursuant to Section 5.1.8; and
- .6 Any additional amounts required by law to be withheld by the Owner due to the Contractor's failure to comply with its obligations under Connecticut General Statutes Sections 4a-60, 4a-60(a) or Sections 46a-68c to 46a-68f, inclusive. Unless otherwise required by applicable law, the Owner shall withhold two percent (2%) of each progress payment (the "CHRO Holdback") until such time as the Connecticut Commission on Human Rights and Opportunities ("CHRO") notifies the Owner that it may release the CHRO Holdback to the Contractor.

§ 5.1.7 In addition to the foregoing, the Owner shall make the following payments:

§5.1.7.1 Upon determination by the Owner Representative that "Fifty Percent of the Contract is Completed", the Owner shall calculate the "Excess Retainage Amount" and shall pay the "Excess Retainage Amount" to the Contractor within ninety days after the Owner's receipt of the Application for Payment that first reflects that "Fifty Percent of the Contract is Completed".

§5.1.7.2 Upon Substantial Completion of the Work, the Contractor shall be entitled to payment of the balance of the Contract Sum net of amounts the Owner Representative determines for incomplete or nonconforming Work, retainage applicable to such incomplete or nonconforming Work, the CHRO Holdback, as applicable, and unsettled claims.

§5.1.7.3 Upon acceptance and written consent of the Contractor's surety, if any, and a written statement from the CHRO releasing the Owner from any obligation to withhold the CHRO Holdback, the Contractor shall be entitled to payment of the CHRO Holdback.

§5.1.7.4 If final completion of the Work is materially delayed through no fault of the Contractor, any Subcontractor, Sub-subcontractor or any other party for whom any of them is responsible, the Contractor shall be entitled to payment of any amounts payable in accordance with Section 9.10.3 of the General Conditions.

§ 5.1.8 Retainage

§ 5.1.8.1 For Applications for Payment Prior to Determination that Fifty Percent of the Contract is Completed: Retainage withheld by the Owner shall be seven and one-half percent (7.5%) of each progress payment.

§ 5.1.8.2 For Applications for Payment Following Determination that Fifty Percent of the Contract is Completed: Retainage withheld by the Owner shall be five percent (5.0%) of each progress payment.

§ 5.1.8.3 The Contractor shall not withhold retainage from any Subcontractor in excess of that withheld by the Owner in connection with such Subcontractor's Work. The Contractor shall release retainage to each Subcontractor upon the Contractor's receipt of retainage from the Owner attributable to the Work performed by such Subcontractor.

§ 5.1.8.4 For the purposes of Section 5.1.7 above and this Section 5.1.8, the following terms shall have the following meanings:

§ 5.1.8.4.1 "Fifty Percent of the Contract is Completed" is the stage in the progress of the Work when Certificates for Payment have been issued by the Architect and payment thereof approved by the Owner for an aggregate amount equal to fifty percent (50%) of the Contract Sum, as it may have been adjusted in accordance with the Contract Documents. For the purposes of this subsection 5.1.8.4.1, the Contract Sum shall include amounts payable for pending construction change orders and other pending change directives described in Section 9.3.1.1 of the General Conditions and excludes any amounts paid by joint check pursuant to Section 9.5.4 of the General Conditions.

§ 5.1.8.4.2 "Excess Retainage Amount" shall mean the amount by which the total retainage then withheld by the Owner exceeds the amount of retainage that would have then been withheld by the Owner if the applicable retainage withheld thus far had been based on five percent (5%) of each progress payment made instead of seven and one-half percent (7.5%).

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## § 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Work and all of its obligations under the Contract Documents except for the Contractor's responsibility to correct Work as provided in Article 12 of the General Conditions, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than thirty (30) days after the issuance of the Architect's final Certificate for Payment subject to the provisions of Article 9 of the General Conditions.

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 Initial Decision Maker

The Associate Vice President for University Planning, Design and Construction for the Owner (or his/her designee) and in the case of a project for UCONN Health ("UCH"), its Associate Vice President for Facilities Development & Operations (or his/her designee) or their respective successors in function will serve as the Initial Decision Maker pursuant to Article 15 of the General Conditions, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

§ 6.2 Not Used.

## ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of the General Conditions.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of the General Conditions.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of the General Conditions or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

### § 8.2 The Owner Representative

Prior to the commencement of the Work, the Owner shall provide the Contractor with the name and contact information (including an email address for notice pursuant to Section 8.6) for the individual who will serve as the primary point of contact for the Contractor's day to day communications with the University. Except as otherwise expressly provided in the Contract Documents, such individual shall not have the authority to approve or execute Change Orders, or other amendments to the Contract. Claims shall be submitted as provided in Article 15 of the General Conditions.

### § 8.3 The Contractor's Representative

(Name, address, email address, and other information)

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§ 8.4 The Contractor's representative shall not be changed without ten days' prior notice to the Owner.

### § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in Exhibit A attached hereto and as provided elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as described in Article 11 of the General Conditions.

§ 8.6 Notice in electronic format for the purposes of Section 1.6.1 of the General Conditions from one party to this Agreement to the other shall be transmitted by electronic mail to the email addresses for the designated representatives as provided in Sections 8.2 and 8.3 of this Agreement.

### § 8.7 Other Provisions

§ 8.7.1 The Contractor is hereby specifically cautioned that unless specifically authorized, in writing, by the University's Vice President of Communications or successor in function, on a case by case basis, the Contractor shall have no right to use, and shall not use, in any manner, the name of the University of Connecticut, its officials or employees, or the Seal of the University:

- (a) in any advertising, publicity, promotion nor;
- (b) to express or to imply any endorsement of the Contractor's work product or services.

§ 8.7.2 The Contractor shall comply, and shall require all Subcontractors, Sub-subcontractors and suppliers to comply, with all of the State Requirements set forth on Exhibit F to the extent applicable.

§ 8.7.3 This Agreement may be executed in counterparts, and each counterpart shall have the same force and effect as an original and, when taken together, shall constitute one and the same instrument and an effective binding agreement on the part of each of the undersigned. Execution of a facsimile or PDF copy shall have the same force and effect as execution of an original. Signed copies of this Agreement may be faxed and e-mailed with the same force and effect as if the originally executed Agreement had been delivered.

### § 8.8 Joint Venture/General Partnership

§ 8.8.1 If the Contractor is a joint venture or a general partnership, each member of the joint venture (a "Member") or partner of the partnership ("Partner"), as applicable, shall be jointly, severally and individually responsible to the Owner for the performance of all obligations of the Contractor under the Contract Documents and jointly, severally and individually liable to the Owner for the Contractor's failure to perform such obligations. In its dealings with the Owner, each Member or Partner, as applicable, shall have full authority to act on behalf of and to bind the Contractor as well as all Members or Partners, as applicable. Each Member or Partner, as applicable, shall be considered to be the agent of the Contractor and of all other Members or Partners.

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after the execution of this Agreement, are enumerated below:

- .1 This Agreement
- .2 Exhibit A, Insurance
- .3 The General Conditions
- .4 Not Used
- .5 Drawings prepared by \_\_\_\_\_ and dated \_\_\_\_\_, and listed on the List of Drawings attached as Exhibit B, as the same may have been modified or supplemented by Bid Clarifications and Addenda.
- .6 Specifications prepared by \_\_\_\_\_ and dated \_\_\_\_\_, and which are listed in the Table of Contents attached as Exhibit C
- .7 Bid Clarifications and Addenda, if any, are as follows:

Number	Date	Pages

- .8 Other Exhibits:
  - Exhibit D - Preliminary Construction Schedule
  - Exhibit E - Labor Rates
  - Exhibit F - State Requirements

.9 Other documents, if any, forming part of the Contract Documents are listed below:

- i. Invitation to Bid for the Project issued by the Owner on \_\_\_\_\_, \_\_\_\_\_ including all exhibits and schedule attached thereto and all other documents incorporated therein by reference.
- ii. The Owner's Contractor Environmental, Health & Safety Manual current as of the date of the execution of this Agreement by the Owner.
- iii. The Owner's Code of Conduct current as of the date of the execution of this Agreement by the Owner.

Signed and agreed by:

\_\_\_\_\_  
 OWNER (Signature)  
 \_\_\_\_\_  
 << >>  
 \_\_\_\_\_  
 (Printed name and title)  
 Date: \_\_\_\_\_

\_\_\_\_\_  
 CONTRACTOR (Signature)  
 \_\_\_\_\_  
 << >><>  
 \_\_\_\_\_  
 (Printed name and title)  
 Date: \_\_\_\_\_

**EXHIBIT A**  
**INSURANCE REQUIREMENTS**

**I. CONTRACTOR'S LIABILITY INSURANCE**

**A.** The Contractor shall maintain with a company or companies lawfully authorized to do business in the State of Connecticut such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

1. Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
2. Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
4. Claims for damages insured by usual personal injury liability coverage;
5. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
6. Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
7. Claims for bodily injury or property damage arising out of completed operations; and
8. Claims involving contractual liability applicable to the Contractor's obligations under Section 3.18 of the General Conditions.

**B.** The insurance required by Section A above shall be written for not less than the limits of liability set forth below or required by law, whichever coverage is greater. Coverages shall be maintained without interruption from the date of commencement of the Work until the date of final payment and, (i) with respect to coverage required to be maintained under the Contract Documents for a period of time after final payment, for such additional period of time, and, (ii) with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work and for such additional period as may be specified in the Contract Documents. Coverage for all insurance policies shall be on an occurrence basis, with the exception of the Pollution Liability coverage described in Section I.B.6 herein, which may be on a claims-made basis.

1. **Worker's Compensation Insurance:** Worker's Compensation Insurance in Statutory Limits of the Worker's Compensation Laws of the State of Connecticut, and other extensions, with Coverage B – Employer's Liability of not less than limits of \$1,000,000 – Each Accident, \$1,000,000 – Policy Limit and \$1,000,000 – Each Employee. Coverage under the Broad Form All State extension shall also be included.

2. **Commercial General Liability Insurance:** \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage, with no exclusions for hazards of operations (including but not limited to elevators, explosion, collapse and/or underground hazards). Coverage shall include Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit. The coverage shall contain no special limitations on the scope of protection afforded to the State. Said policy shall also state that it is primary insurance. Completed operations coverage shall be maintained for a period of three (3) years after final completion of the Work.
3. **Automobile Liability Insurance:** Automobile Liability Insurance covering all owned, non-owned and hired automobiles, trucks and trailers of the respective parties required to provide and maintain this insurance. Such insurance shall provide coverage not less than that of the Standard Comprehensive Automobile Liability policy in limits not less than, as respects Contractor and all tiers of Subcontractors, \$1,000,000 Combined Single Limit each occurrence for Bodily Injury and Property Damage.
4. **Umbrella Liability Insurance:** Umbrella liability (following form) in the amount of \$5,000,000 per Occurrence.
5. **Aircraft Liability:** If aircraft of any kind is used by the Contractor, any tier of Subcontractor or by anyone else on their behalf, the Contractor or Subcontractor shall maintain or cause the operator of the aircraft to maintain aircraft public liability insurance insuring passengers and the general public against personal injury, bodily injury or property damage arising from aircraft owned, used, operated or hired in connection with the Work by the Contractor, Subcontractor or anyone else in limits of \$50,000,000 Combined Single Limit for any one occurrence, each aircraft. If the aircrafts to be used are unmanned aircrafts, the Contractor, Subcontractor or operator of the aircraft may be permitted by the Owner to maintain other coverages and limits than as provided herein for aircrafts generally if approved by the Owner in writing in advance of the use of such unmanned aircrafts
6. **Contractor's Pollution Liability:** If the work of this project includes the abatement, removal, cleanup or handling of any asbestos, PCB's, lead based paint, or other pollutants or hazardous materials, then the Contractor shall also provide evidence that Pollution Liability Insurance, including completed operations and Contractual Liability coverage of not less than limits of \$5,000,000 has been procured and is in force on the project. However, if the Contractor demonstrates that coverage for claims arising out of the abatement, removal, cleanup or other handling of asbestos, PCB's, lead based paint, or other pollutants or hazardous materials is covered by the Contractor's general liability insurance, a separate Contractor's Pollution Liability Policy will not be required.
7. **Professional Liability:** If the Contractor is required to furnish professional services for the Project, the Contractor shall procure Professional Liability insurance covering the performance of the professional services, with policy limits of not less than \$1,000,000 per claim and \$2,000,000 in the aggregate unless otherwise required by the Owner.

- 8. Additional Insured Requirements:** The University of Connecticut, the State of Connecticut, their respective officers, officials, agents, employees, boards and commissions shall be named as Additional Insureds under the coverages described in Paragraphs 2-6 of this Section B and that said coverage(s) is provided for all operations, uses, occupations, acts and activities of the insureds under the Contract Documents and under any amendments, modifications, extensions or renewals of said Contracts regardless of whether liability is attributable to the named insureds or a combination of the named insureds and the additional named insureds. Coverage shall be provided in the form of an endorsement to the Contractor's insurance policy or policies, which endorsement shall be at least as broad as ISO Form CG 20 37 04 13 and ISO Form CG 20 10 04 13.
- 9.** If the Contractor is a joint venture or general partnership, the joint venture or general partnership and each individual member or partner of the joint venture or general partnership, as applicable, must be designated in each policy as named insureds.
- 10.** A Certificate of Insurance shall clearly indicate the Project name, Project number or some easily identifiable reference to the relationship to the Owner.
- 11.** Each liability policy shall contain a Cross Liability Endorsement and shall include a waiver of subrogation clause.
- 12.** All insurance secured by Contractor or Subcontractors pursuant to the Owner's requirements under the provisions of this Section shall be in policies subject to the Owner's approval, as to form, content, limits of liability, cost and issuing companies. Such companies shall have and maintain an A.M. Best rating of not less than A-(VII), or otherwise acceptable to Owner.
- 13.** If the Contractor maintains insurance against physical loss or damage to Contractor's construction equipment and tools, such insurance shall include an insurer's waiver of rights of subrogation in favor of Owner.

C. Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required under this Exhibit A shall contain a provision that coverages afforded under the policies will not be canceled, terminated or materially changed, altered or allowed to expire until at least thirty (30) days' prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 of the General Conditions and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section I.B of this Exhibit A. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief and shall identify on their faces the project name and contract number to which they apply. The Certificate(s) of Insurance must also provide clear evidence that the Contractor's Insurance Policies contain at least the minimum limits of coverage and special provisions prescribed in this Exhibit A.

## II. PROPERTY INSURANCE

A. Property insurance on an all-risk basis, including coverage for the perils of earthquakes and floods, has been purchased by the Owner. Insurance required by this Section is not intended to cover machinery, tools and equipment of the Contractor which is used in the performance of the Work, but is not incorporated into the permanent improvements, nor any materials and equipment paid for by the Owner and stored off-site, for which the Contractor shall procure property insurance satisfactory to the Owner. The Contractor shall, at its own expense, provide coverage for its machinery, tools and equipment subject to these provisions. Unless the Project is for new construction (rather than for renovations to an existing structure or facilities), the Owner's property insurance program shall provide for Builder's Risk insurance coverage for the Project.

B. **Builder's Risk Insurance:** If the Project is for new construction (rather than for renovations to an existing structure or facilities), the Contractor shall purchase and maintain Builder's Risk Insurance in the amount of the initial Contract Sum (or Guaranteed Maximum Price, as applicable) plus values of subsequent modifications or change orders on a replacement cost basis. The terms and conditions of such Builder's Risk insurance shall be satisfactory to the Owner in all respects. The Builder's Risk coverage shall be written on a Special Covered Cause of Loss form and shall include theft, vandalism, malicious mischief, collapse, temporary buildings, transit, debris removal, increased cost of construction, architect fees and expenses, soft costs, flood and earthquake. Builder's Risk shall include portions of Work located away from site but intended for use at the site. Contractor shall obtain consent of the insurance company and delete any provisions with regard to restrictions within any occupancy clause. Equipment break down coverage shall be included and shall cover insured equipment during installation and testing.

C. As regards Builder's Risk insurance maintained by the Contractor under Section II.B above, the Contractor shall be responsible for all costs not covered because of deductibles required under such insurance. As regards Builder's Risk insurance maintained by the Owner under Section II.A above, if such insurance requires deductibles, the Contractor shall pay costs not covered because of such deductibles provided the subject loss was caused by the acts or omissions of the Contractor, a Subcontractor or Sub-subcontractor or any other person or entity for whom or which any of them is responsible.

D. As regards partial occupancy or use by the Owner the Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.



## **EXHIBIT F**

### **State of Connecticut Terms and Conditions**

1. **STATUTORY AUTHORITY.** Statutory Authority. Connecticut General Statutes §§ 4a-52a, 10a-104, 10a-108, 10a-109d(a)(5) and/or 10a-151b, provide the University with authority to enter into contracts in the pursuit of its mission.
2. **NONDISCRIMINATION.** References in this section to "Contract" shall mean this Agreement and references to "Contractor" shall mean the Contractor.
  - (a) For purposes of this Section 1, the following terms are defined as follows: (i) "Commission" means the Commission on Human Rights and Opportunities; (ii) "Contract" and "contract" include any extension or modification of the Contract or contract; (iii) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor; (iv) "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose; (v) "veteran" means any person honorably discharged from, or released under honorable conditions from active service in, the armed forces; (vi) "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations; (vii) "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements; (viii) "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced; (ix) "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders; (x) "intellectual disability" means a significant limitation in intellectual functioning existing concurrently with deficits in adaptive behavior that originated during the developmental period before eighteen years of age; (xi) "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and (xi) "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in

part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

References to "this section" in subsection (b) below means and refers to Connecticut General Statutes § 4a-60 and references to "this section" in subsection (e) below means and refers to Connecticut General Statutes § 4a-60a.

(b) (1) The Contractor agrees and warrants that in the performance of the contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut; and the Contractor further agrees to take affirmative action to ensure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved;

(2) The Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission on Human Rights and Opportunities;

(3) The Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(4) The Contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e, 46a-68f and 46a-86; and

(5) The Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this section and section 46a-56.

(c) If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

(1) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and

such other reasonable activities or efforts as the Commission on Human Rights and Opportunities may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(2) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission on Human Rights and Opportunities, of its good faith efforts.

(d) The Contractor shall include the provisions of subsections (b) and (c) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and in every subcontract entered into in order to fulfill any obligation of a municipal public works contract or contract for a quasi-public agency project, and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission on Human Rights and Opportunities. The Contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission regarding a state contract, the Contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(e) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

(2) The Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(3) The Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56; and

(4) The Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this section and section 46a-56.

(f) The Contractor shall include the provisions of subsection (e) in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and in every subcontract entered into in order to fulfill any obligation of a municipal public works contractor contract for a quasi-public agency project, and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission on Human Rights and Opportunities.

The Contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission regarding a state contract, the Contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(g) The Contractor agrees to comply with the regulations referred to in this Section 1 as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

## **2. STATE EXECUTIVE ORDERS**

This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. The Contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order 14 and/or Executive Order 49 are applicable, they are deemed to be incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Owner shall provide a copy of these orders to the Contractor.

## **3. ETHICS AND COMPLIANCE**

Contractor acknowledges that by doing business with or seeking to do business with the State it is subject to certain provisions of the Code of Ethics for Public Officials of the State of Connecticut (the "Code of Ethics") applicable to current or prospective state contractors. Contractor acknowledges receipt and review of the "Guide to the Code of Ethics for Current or Potential State Contractors" as currently posted on the Web site of the Office of State Ethics [www.ct.gov/ethics](http://www.ct.gov/ethics) and agrees to comply with all provisions of the Code of Ethics applicable to Contractor as a current or potential state contractor. As required under Connecticut General Statutes §1-101qq, the Contractor will include the foregoing reference to the state ethics law summary in each subcontract entered into with Subcontractors in connection with the Project.

In accordance with the Owner's compliance program, the Owner has in place an anonymous ethics and compliance reporting hotline service – 1-888-685-2637. Any person who is aware of unethical practices, fraud, violation of state laws or regulations or other concerns relating to Owner policies and procedures can report such matters anonymously.

Such persons may also directly contact the Owner's compliance office at: Office of Audit, Compliance, and Ethics, 9 Walters Avenue, Unit 5084, Storrs, CT 06269-5084; Phone 860-486-4526; Fax 860-486-4527. As a provider of goods and/or services to the Owner, you are hereby required to notify your employees, as well as any subcontractors, who are involved in the implementation of this contract, of this reporting mechanism.

#### **4. CAMPAIGN CONTRIBUTION RESTRICTIONS**

For all State contracts as defined in section 9-612 of the Connecticut General Statutes having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this Contract expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice (SEEC Form 11):

*SEEC FORM 11 CONNECTICUT STATE ELECTIONS ENFORCEMENT COMMISSION  
(Rev.7/18)*

#### **Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations**

This notice is provided under the authority of Connecticut General Statutes §9-612 (f) (2) and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

#### *CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS*

No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder, of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall knowingly solicit

contributions from the state contractor's or prospective state contractor's employees or from a subcontractor or principals of the subcontractor on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

#### *DUTY TO INFORM*

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

#### *PENALTIES FOR VIOLATIONS*

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties —Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties —Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

#### *CONTRACT CONSEQUENCES*

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, [www.ct.gov](http://www.ct.gov) v/ see c . Click on the link to "Lobbyist/Contractor Limitations."

## DEFINITIONS

“State contractor” means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. “State contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Prospective state contractor” means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100.

“Prospective state contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a state contractor or prospective state contractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties,

(iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

“State contract” means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the

furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work,

(iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fundraising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee, serving on the committee that is hosting a fundraising event, introducing the candidate or making other public remarks at a fundraising event, being honored or otherwise recognized at a fundraising event, or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

"Subcontractor" means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. "Subcontractor" does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.



“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

## **5. WHISTLEBLOWING**

This Contract is subject to the provisions of § 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee’s disclosure of information to any employee of the Contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day’s continuance of the violation shall be deemed to be a separate and distinct offense. The Owner may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state Contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state Contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

## **6. CODE OF CONDUCT**

In furtherance of its longstanding commitment to fundamental human rights, to the dignity of all people, and to the environment, the Owner has developed the Code of Conduct for University of Connecticut Vendors (the “Vendor Code of Conduct”). The Contractor hereby acknowledges receipt of the Vendor Code of Conduct. A copy of the Vendor Code of Conduct is available at <http://csr.uconn.edu/>. The Vendor Code of Conduct is hereby incorporated herein by reference to the extent the Contractor is required to comply with the same pursuant to this section.

The Contractor agrees to comply with the “Principal Expectations” described in the Vendor Code of Conduct. The Contractor further agrees to comply with the “Preferential Standards” described in the Vendor Code of Conduct, to the extent a commitment to so comply, or a

representation of compliance, was provided by the Contractor to the Owner in writing. Any such commitment or representation is hereby incorporated herein by reference.

The Contractor agrees to provide the Owner with such evidence of Contractor's compliance with this section as the Owner reasonably requests and to, at the request of the Owner, provide a comprehensive, annual summary report of the Contractor's corporate social and environmental practices.

## **7. BACKGROUND CHECKS**

The Contractor shall comply with all of the Owner's background screening requirements applicable to the Project (the "Screening Requirements"). If the Project is to take place on the UConn Health campus in Farmington, Connecticut, the Screening Requirements will be outlined in the Specifications for the Project. If the Project is located on any other campus of the Owner, the Screening Requirements will be outlined in the Bid Documents for the Project. The Contractor warrants that it will not assign any employee, independent contractor or agent to perform services under this Contract unless that employee, independent contractor or agent is cleared for work on the Project by the Contractor, in a manner consistent with the Screening Requirements, for performing such services. Without limiting the foregoing, the Contractor shall immediately remove any employee, independent contractor or agents performing services under this Contract on any campus of the Owner if it becomes known to the Contractor that such person may be a danger to the health or safety of the campus community, or at the request of the Owner based on a concern of community or individual safety.

Without limiting the obligations of the Contractor under §3.18 of the General Conditions, the Contractor shall defend, indemnify and hold harmless the state of Connecticut, the Owner, and all of their employees, agents and/or assigns for and against any claims, suits or proceedings resulting from the failure of the Contractor to comply with the Screening Requirements and/or that are caused in whole or in part by the actions or omissions of the Contractor, any Subcontractor, Sub-subcontractor, their respective employees, or any other person or entity for whom any of them is responsible.

# DRAFT AIA® Document A201™ - 2017

## General Conditions of the Contract for Construction

### AIA A201-2017 FOR USE WITH A101-2017 FOR GC PROJECT

Rev. 12-19-18

for the following PROJECT:

(Name and location or address)

<< >>< >>

THE OWNER:

(Name and address)

<< >>< >>

<< >>

THE CONTRACTOR:

(Name and address)

<< >>< >>

<< >>

THE ARCHITECT:

(Name and address)

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**ADDITIONS AND DELETIONS:**  
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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.



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*General Conditions of the Contract for Construction*

**ARTICLE 1 GENERAL PROVISIONS**

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the “Agreement”) and consist of the Agreement, these General Conditions of the Contract for Construction (hereinafter the “General Conditions”), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties; (2) a Change Order; (3) a Construction Change Directive; or (4) a written order for a minor change in the Work issued by the Architect.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect’s consultants; (2) between the Owner and a Subcontractor or a Sub-subcontractor; (3) between the Owner and the Architect or the Architect’s consultants; or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect’s duties.

§ 1.1.3 The Work

The term “Work” means all of the construction and services required by, described in, reasonably inferable from, and as necessary to produce the results required by the Contract Documents, whether completed or partially completed, and includes, without limitation, the furnishing of (1) all materials, supplies, equipment, fixtures, tools, implements, and other items and facilities required for, or in connection with, or for inclusion or incorporation into, the Project; and (2) all labor, supervision, transportation, utilities, storage and all other services required for or in connection with the Project, except as specifically indicated in the Contract Documents to be the responsibility of others. The Work may constitute the whole or a part of the Project, whether on or off the site of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part, and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the

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written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### § 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials and Instruments of Service may be in paper or electronic form.

#### § 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in Section 6.1 of the Agreement to render initial decisions on Claims in accordance with Section 15.2.

### § 1.2 Correlation and Intent of the Contract Documents

#### § 1.2.1 Intent of the Contract Documents

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

##### § 1.2.1.1 Severability

The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

##### § 1.2.1.2 Inconsistencies

In the event of inconsistencies within or between parts of the Contract Documents or between the Contract Documents and applicable standards, codes, and ordinances, the Contractor shall: (1) provide the better quality or greater quantity of Work; or (2) comply with the more stringent requirement; either or both in accordance with the Owner Representative's interpretation. The terms and conditions of this Section 1.2.1.2 however, shall not relieve the Contractor of any of the obligations set forth in Sections 3.2 and 3.7.

§ 1.2.1.1.1 Before ordering any materials or equipment or performing any Work, the Contractor shall verify the figures shown on the Drawings before laying out the Work and will be responsible for any errors or inaccuracies resulting from Contractor's failure to do so. In the event that the Contractor shall, while laying out the Work, become aware of: (1) any conflicts between (a) the Drawings, the Specifications or any Modification to the Drawings or the Specifications and (b) the actual layout of the Work, or (2) any conflicts or inconsistencies in the Drawings, the Specifications or any Modification to the Drawings or the Specifications themselves, Contractor shall promptly notify the Architect. If the Contractor proceeds without the Architect's clarification and instruction on the matter, the Contractor shall proceed at Contractor's own risk.

§ 1.2.1.1.2 If a minor change in the Work is found necessary to address actual field conditions, the Contractor shall submit detailed drawings to reflect such change for approval by the Architect before implementing such change in the Work.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized

meanings.

### § 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

### § 1.4 Interpretation

In the interest of brevity, the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### § 1.5 Ownership and Use of Drawings, Specifications and other Instruments of Service

§ 1.5.1 The Owner will retain all common law, statutory and other reserved rights, including copyrights, in the Instruments of Service as provided in the contract between the Owner and the Architect. Unless otherwise indicated in such contract, the Architect and the Architect's consultants shall be deemed the authors of their respective Instruments of Service. Upon completion of the Work, and at the request of the Architect, all copies of the Instruments of Service, except one record set that may be retained by the Contractor, shall be returned or suitably accounted for to the Architect. None of the Contractor, Subcontractor, Sub-subcontractor, or any material or equipment supplier shall own or claim a copyright in the Instruments of Service. The Instruments of Service and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to the Project. None of the Contractor, a Subcontractor, Sub-subcontractor, or any material or equipment suppliers may use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of the Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

### § 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed (and also, in the case of a Notice of Claims by the Contractor to the Owner, to the Owner's Representative and the Initial Decision Maker) by certified or registered mail, or by courier providing proof of delivery.

### § 1.7 Transmission of Data in Digital Form

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Contract or the Contract Documents.

### § 1.8 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties may use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

## § 1.9 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## § 1.10 Provisions Required by Law Deemed Inserted

§ 1.10.1 Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

## ARTICLE 2 OWNER

### § 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. Except as otherwise provided in Section 4.2.1, the Architect does not have any authority to act on behalf of the Owner. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.1.1 Pursuant to Section 8.2 of the Agreement, the Owner shall designate a representative through whom all communications by the Contractor with the Owner shall be made except as otherwise provided in the Contract Documents or instructed in writing by the Owner. If the Owner retains a third party (other than the Architect) to provide construction administration services, the Owner shall instruct the Contractor as to the role of such third party in the Project (including, without limitation, the extent to which the Contractor is to communicate directly with such third party) and the authority of such third party, if any, to act on behalf of the Owner.

§ 2.1.2 Not Used.

§ 2.2 Not Used.

### § 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 To the extent such surveys are in the possession of the Owner and are required for the performance of the Work, the Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project. The Contractor shall exercise proper precautions relating to the safe performance of the Work. Contractor shall review such surveys and notify the Owner of any inaccuracies therein within fourteen (14) days of its receipt.

§ 2.3.5 Data concerning the Project site, size of the Project site, access to the Project site, staging and storing,



present obstructions on or near the Project site, conditions of existing adjacent structures, locations and depths of sewers, conduits or pipes, gas lines, position of sidewalks, curbs and pavements, and other data concerning site conditions to the extent provided by the Owner, has been obtained from sources Owner believes reliable. Accuracy of such data, however, is not guaranteed and is furnished solely for accommodation of Contractor. Use of such data is made at the Contractor's sole risk and expense.

§ 2.3.6 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.7 The Contractor shall be responsible for determining how many copies of the Drawings and other Contract Documents are necessary for the execution of the Work. The Contractor shall be responsible for the reproduction and distribution of such copies.

#### § 2.4 Owner's Right to Stop the Work

If the Contractor (1) fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2; (2) repeatedly fails to carry out Work in accordance with the Contract Documents; or (3) creates a situation which the Owner believes, in its sole judgement, poses an imminent risk of loss to property or persons, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

#### § 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and (1) fails within a seven-day period after receipt of notice of such default or neglect from the Owner to commence and continue correction of such default or neglect with diligence and promptness, and (2) further fails to do so within three days after receipt of a second such notice from the Owner, the Owner shall be entitled to (but not obligated to), without prejudice to other rights and remedies Owner may have, correct the deficiencies in the Work. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the Owner's cost of correcting such deficiencies in the Work, including expenses and compensation payable to the Architect for additional services made necessary by Contractor's default, neglect or failure. The Contractor shall also be responsible for all of the Owner's other costs, damages, delays, and associated impacts arising from the Owner's exercise of its rights under this Section 2.5. If payments then or thereafter due the Contractor are not sufficient to cover amounts payable to the Owner under this Section 2.5, the Contractor shall pay the difference to the Owner.

#### §2.6 Extent of Owner Rights

§2.6.1 The rights stated in Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (1) granted in the Contract Documents, (2) at law or (3) in equity.

§2.6.2 In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences or procedures for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

### ARTICLE 3 CONTRACTOR

#### § 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor has designated the representative set forth as Contractor's representative in Section 8.3 of the Agreement who has express authority to bind the Contractor with respect to all matters under this Contract. Any and all notices to be provided to the Contractor by the Owner or Architect under the Contract Documents shall be delivered to such Contractor's representative. The term "Contractor" means the Contractor or the Contractor's authorized representative. The Contractor shall not replace the Contractor's representative without ten days prior written notice and the

prior written consent of the Owner.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect or the Owner in the administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.1.4 The Contractor represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents) as an inducement to the Owner to execute the Contract, which representations and warranties shall survive the execution and delivery of the Contract and the final completion of the Work:

- .1 That it is financially solvent, able to pay its debts as they mature and possesses sufficient working capital to complete the Work and perform its obligations under the Contract Documents;
- .2 That it, through its Subcontractors or otherwise, is able to furnish the tools, materials, supplies, equipment and labor required to complete the Work and perform its obligations hereunder and has sufficient experience and competence to do so;
- .3 That it is authorized to do business in the State where the Project is located and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the site of the Project;
- .4 That its execution of the Contract and its performance thereunder have been duly authorized by all necessary corporate action; and
- .5 That its duly authorized representative has visited the site of the Project, familiarized himself or herself with the local conditions under which the Work is to be performed and correlated his/her observations with the requirements of the Contract Documents.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 The Contractor shall, along with such Subcontractors as the Contractor deems necessary, visit the Project site prior to the execution of the Contract. The execution of the Contract by the Contractor is a representation that the Contractor and such Subcontractors have visited the Project site, become familiar with all existing conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 The Contractor may request permission from the Owner to conduct, at Contractor's sole cost and expense, tests, examinations and/or inspections as Contractor deems necessary to become sufficiently acquainted with existing conditions on the Project site. No such tests, examinations or inspections shall be conducted without the Owner's prior written approval and any engineer or consultant engaged by the Contractor or a Subcontractor to perform such test, examination or inspection shall be subject to the Owner's prior approval.

§ 3.2.3 Because the Contract Documents are complementary, the Contractor shall, before ordering any materials or starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect and Owner Representative any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect and the Owner may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a

licensed design professional, unless otherwise specifically provided in the Contract Documents. After reporting to the Architect any error, inconsistency, or omission in or among the Contract Documents which the Contractor discovers or which is made known to the Contractor, the Contractor shall not proceed with the subject Work without the Architect's written response and/or clarifications and, if required, Owner's approval of any associated adjustments to the Contract Documents.

§ 3.2.4 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect and the Owner any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.5 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, as would have been avoided if the Contractor had performed such obligations and the Contractor shall be responsible for associated delays and impacts. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities unless the Contractor should have but failed to recognize such error, inconsistency, omission or difference.

§ 3.2.6 No additional compensation or time will be granted to the Contractor by reason of conditions which the Contractor could have discovered or reasonably anticipated through the fulfillment of its obligations under this Section 3.2.

### § 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. The Contractor shall schedule and perform the Work so as not to interfere with the Owner's on-going business operations or any other work being performed by or on behalf of the Owner in or about the Project site. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for any claims against the Owner and any damages, losses, costs and expenses incurred by the Owner resulting or arising from the acts and omissions of the Contractor's employees, Subcontractors, Sub-subcontractors, material and equipment suppliers, and their respective agents and employees, and any other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any Subcontractors or Sub-subcontractors or material and equipment suppliers.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor's qualified representative shall attend all periodic progress meetings which will be held at such time and at such place as the Architect or the Owner shall designate.

### § 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.2.1 Contractor's request for any substitution shall constitute a representation by the Contractor that:

- .1 the Contractor and any Subcontractors and Sub-subcontractors impacted by such substitution have investigated the proposed substitute product and determined that it is equal or superior in all respects to the product specified;
- .2 the Contractor and proposed manufacturer will provide the same or superior warranty coverage for the substitution that the Contractor would for the product specified;
- .3 the cost data presented is complete and includes all related costs under this Contract, and Contractor waives all claims for additional costs related to the substitution which subsequently become apparent;
- .4 Contractor shall coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be complete in all respects;
- .5 Contractor shall make requests for substitutions for Contractor's convenience within fourteen (14) days after Contract award or at the preconstruction meeting; and
- .6 Contractor shall reimburse and compensate the Owner for any costs incurred in connection with, and/or the value of, any services performed by the Architect and/or the Owner associated with, addressing the request for substitution.

§ 3.4.3 All labor shall be performed by workmen skilled in their respective trades, and workmanship shall be of good quality so that first class work in accordance with the standards of construction set forth in the Contract Documents will be achieved. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit the employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.3.1 The Contractor shall neither permit nor suffer the use of offensive language or lewd conduct by Contractor's employees or other persons carrying out the Work on or about the Project site. All of the Owner's buildings are smoke-free buildings. The Contractor shall not permit (1) smoking in the Owner's buildings, (2) outdoor smoking, where outdoor smoking could create a hazard, or (3) the introduction or use of drugs, spirituous or intoxicating liquors, on or about the Owner's property by the Contractor's employees or other persons carrying out the Work. The Contractor shall comply with the Owner's current "Policy on Discrimination Harassment and Related Interpersonal Violence" including its provisions prohibiting sexual harassment. The Contractor shall be fully responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors, Sub-subcontractors and material and equipment suppliers, and all persons either directly or indirectly employed by any of them to perform any part of the Work.

### § 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements and any substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 The Contractor shall procure and assign to the Owner at the time of Substantial Completion of the Work any and all Subcontractor, Sub-subcontractor, manufacturer or supplier warranties relating to any materials or labor used in the Work. Such warranties shall supplement the warranties provided by the Contractor in Section 3.5.1. All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.3 Directions, specifications and recommendations by manufacturers for installation, handling, storing, adjustment, and operation of their materials or equipment shall be complied with, but the Contractor shall nonetheless have the responsibility of determining whether such directions, specifications, and recommendations may safely and suitably be employed in the Work, and of notifying the Architect and Owner in advance in writing of any deviation or modification necessary for installation safety or proper operation of the item.

### § 3.6 Taxes

The Owner is a tax-exempt institution. The Contractor shall be familiar with the current regulations of the Department of Revenue Service. The tax on materials or supplies exempted by such regulations shall not be included as part of the Contract Sum, or any Application for Payment, or request for Change Order or other compensation. A Sales Tax Certificate for the duration of the Project is available from the Owner's Purchasing Department upon written request.

### § 3.7 Permits, Fees, Notices, and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with, be responsible for the performance of the Work in accordance with, and give notices required by all local, state and federal laws, statutes, ordinances, codes, building codes, rules, regulations, permits, and orders enacted, promulgated, issued or ordered by any governmental body or public or quasi-public authority having jurisdiction over the Work, the Contractor and/ or the site of the Project. The foregoing requirements shall include, without limitation, those relating to equal opportunity, labor, wages, and employment.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules, and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 If any governmental body having jurisdiction over the Work requires licenses or registrations for the performance of the Work, or any part thereof, the Contractor shall hold such valid licenses or registrations as may be required by law to prosecute the Work to completion. If any part of the Work for which such a license or registration is required to be performed by a Subcontractor or Sub-subcontractor, the Contractor shall ensure that any such subcontractor holds such valid licenses or registrations as may be required by law to prosecute said Work to completion.

§ 3.7.5 Concealed or Unknown Conditions. See Section 15.1.9 of these General Conditions.

§ 3.7.6 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances, except when installation is specified as part of the allowance in Division 1 Specifications; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1; and (2) changes in Contractor's costs under Section 3.8.2.2, except when installation is specified as part of the allowance in the General Requirements (Division 1 of the Specifications).

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 Superintendent and Project Manager

§ 3.9.1 The Contractor shall employ a competent, experienced, full-time superintendent(s) and necessary assistants who shall be in attendance at the Project site during performance of the Work for the duration of the entire Project. The superintendent shall be satisfactory to the Owner and the Contractor shall not replace the superintendent without the prior written consent of the Owner. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 If not already identified as part of the Owner's pre-qualification process, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner and Architect the name, qualifications and references of the proposed superintendent(s).

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. If, for any reason, the Owner finds the superintendent(s) to be unsatisfactory, the Contractor will, within five (5) days after the request of Owner, replace such superintendent with a qualified individual to whom neither the Owner nor the Architect has objection. The Contractor shall not change the superintendent without the Owner's written consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 The Contractor shall employ a competent Project Manager and necessary assistants who shall be in attendance at the Project site during performance of the Work for the duration of the entire Project. The Project Manager shall be satisfactory to the Owner and the Contractor shall not replace the Project Manager without the prior written consent of the Owner. The Project Manager shall represent the Contractor and communications given to the Project Manager shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

§ 3.9.5 If not already identified as part of the Owner's pre-qualification process, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner and the Architect the name, qualifications, and references of the proposed Project Manager. The Contractor shall not employ a proposed Project Manager to whom the Owner or Architect has made reasonable and timely objection. If, for any reason the Owner finds a Project Manager to be unsatisfactory, the Contractor shall, upon the request of the Owner, replace such Project Manager with a qualified individual to whom neither the Owner nor the Architect has objection. The Contractor shall not replace the Project Manager without the prior written

consent of the Owner.

§ 3.9.6 Additional key personnel may be required for the Project. The Contractor shall provide additional personnel as required to ensure proper project management and coordination.

### § 3.10 Contractor's Construction Schedule

§ 3.10.1 The Contractor shall, within ten (10) days after the execution of the Contract, submit for the Owner's approval and the Architect's information a construction schedule for the Work including such detail and information and in the form as described in Division 1 of the Specifications. The schedule shall include, without limitation, (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. Upon the Owner's approval of the schedule, such approved schedule shall be deemed to supersede and replace the preliminary schedule attached as Exhibit D to the Agreement and such approved schedule shall constitute a Contract Document. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for simultaneous review and approval by the Owner and Architect. The Owner and Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule; and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

### § 3.11 Documents and Samples at the Site

§ 3.11.1 The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy as required by the Owner, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.11.2 In addition, the Contractor shall indicate on the Drawings, as best as possible, all new and existing pipe and conduit runs which are concealed in the floor slabs, walls, ceilings, etc. The Contractor shall indicate on the Drawing the electrical distribution panel and circuit number supplying each item installed or reconnected, with diagrammatic lines showing sequence of connections. All changes shall be identified and circled on the Architect's and Engineer's drawings at the time they occur for each such field change.

### § 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract

Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect or Engineer without action. Such return without action will not be grounds for an increase in the Contract Time.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically notified and informed the Architect and the Owner of such deviation at the time of submittal and (1) the Owner has given written approval to the specific deviation as a minor change in the Work; or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to reasonably rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design



criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.12.11 See Specifications for additional information on Shop Drawings.

### § 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the Project site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 Nothing contained in the Contract Documents shall be interpreted as giving the Contractor exclusive use of the Project site.

§ 3.13.3 The performance of the Work shall not impede the Owner's normal, continuous, and safe use and operation of its roadways and buildings in and around the Project site. If it appears that the performance of the Work will impede such use and operation, the timing and manner of the performance of the Work shall be subject to the approval of the Owner.

§ 3.13.4 The Contractor shall comply with the following procedures when working in occupied areas including classrooms, hallways, and office spaces.

§ 3.13.4.1 The Contractor shall notify the Owner two (2) days prior to commencing Work in an occupied area. This notification shall include a detailed description of the Work to be performed in the occupied area.

§ 3.13.4.2 There shall be no overhead Work (e.g. demolition, HVAC ductwork, and/or electrical) performed directly over occupied areas.

§ 3.13.5 The Contractor shall produce a site logistics plan for the Owner's review and approval before beginning operations on the Project site. This document shall be updated and submitted to the Owner on a periodic basis as required by the Owner. No deviations from this plan will be allowed without the prior approval of the Owner.

### § 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.14.3 Unless authorized in writing by the Architect, structural elements of the Work shall not be cut, patched, or otherwise altered or repaired. Existing Work that is cut, damaged, disturbed or otherwise interfered with by the Contractor, a Subcontractor, Sub-subcontractor or anyone for whom any of them is responsible, shall be fully, properly, and carefully repaired by the responsible Contractor, Subcontractor or Sub-subcontractor. All such repairs shall be completed to the satisfaction of the Architect, and shall match similar existing adjoining work.

§ 3.14.4 See Specifications for additional information on Cutting and Patching.

### § 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area and roadways free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials and shall clean and/or remove all stains, spots, marks, blemishes, foreign matter and dirt from surfaces of the Work and from other surfaces not a part of the Work but where such conditions resulted from the Contractor's operations from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

### § 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

### § 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or patent or such infringement is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect. In the event of legal action arising out of such infringement for which the Contractor is responsible and which action has the effect of stopping the Work, the Owner may require the Contractor to substitute other products of like kind as will make it possible to pursue and complete the Work. Costs and expenses caused thereby shall be borne by the Contractor.

### § 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law the Contractor shall defend, indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the willful, wanton or negligent acts or omissions of the Contractor, a Subcontractor, Sub-subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18. Nothing in this Section shall be construed as obligating the Contractor to indemnify or hold harmless any of the parties indemnified hereunder against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the negligence of any such indemnified party, or such party's agents or employees.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, Sub-subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor, a Subcontractor or Sub-subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

### § 3.18.3 Additional Indemnification Obligations

§ 3.18.3.1 The Contractor shall defend, indemnify and hold harmless the Owner, the Architect, and the Architect's consultants and their agents and employees from and against all claims, damages, losses, including, but not limited to, attorneys' fees, arising out of or resulting from any type of pollution and/or environmental impairment into or upon the land, the atmosphere, or any course or body of water that is above or below ground, which is caused by any negligent or willful or wanton act or omission of the Contractor, Subcontractors, Sub-subcontractors or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

§ 3.18.3.2 The Contractor shall defend, indemnify and hold harmless the Owner, the Architect, and the Architect's consultants, and the agents and employees of any of them from and against all claims, damages, losses, including, but not limited to, attorneys' fees, arising out of or resulting from any acts of Contractor, Subcontractors, Sub-subcontractors or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable that are outside of the Contract Specifications, and without the supervision or direction of the Owner, its Architects and Engineers.

§ 3.18.3.3 The Contractor shall defend, indemnify and hold harmless the Owner, the Architect, and the Architect's consultants, and the agents and employees of any of them from and against all claims, damages, losses, and expenses including, but not limited to, attorneys' fees, arising out of or resulting from the misuse or malfunction of any equipment rented, owned, or leased by the Contractor, any Subcontractor, Sub-subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts they may be liable.

§ 3.18.3.4 Nothing in Section 3.18.3 shall be construed as obligating the Contractor to indemnify or hold harmless any of the parties indemnified hereunder against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the negligence of any such indemnified party, or such party's agents or employees.

§ 3.18.3.5 The Owner assumes no responsibility or liability from loss or damage to the Contractor's equipment, materials, or supplies.

§ 3.19 The Contractor shall obtain and maintain at its expense such general liability insurance coverage as will insure its indemnification obligations under Section 3.18 and any other contractual indemnity obligations assumed by the Contractor under the Contract Documents.

## ARTICLE 4 ARCHITECT

### § 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

### § 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that such portion of the Work is, and when the Work is fully completed the entirety of the Work will be, in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or

procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.2.1 Where it is stated in the Contract Documents that the Contractor shall pay for or reimburse the Owner for services of the Architect, such payment shall be at a rate of two and one half (2.5) times the Architect's Direct Personnel Expense plus any expenses incurred in providing such services. Direct Personnel Expense is defined as the direct salaries of the Architect's personnel engaged on the Project and the portion of the cost of their mandatory and customary contributions and benefits related thereto, such as employment taxes and other statutory employee benefits, insurance, sick leave, holidays, vacations, pensions, and similar contribution and benefits.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents; (2) known deviations from the most recent construction schedule submitted by the Contractor; and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 Communications

Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 Each of the Owner and the Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Owner or the Architect considers it necessary or advisable for implementation of the intent of the Contract Documents, the Owner or the Architect, as applicable, will have authority to require additional inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not such Work is fabricated, installed or completed. The Architect shall advise and assist the Owner in performing any of the functions set forth in this Section that are performed by the Owner.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Owner or the Architect will prepare Change Orders and Construction Change Directives and may order minor changes in the Work as provided in Section 7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10. The undertaking of inspections by the Architect is not to be construed as supervision of construction activities nor an assumption by the Architect of any responsibility for job site safety for the performance of Work.

§ 4.2.10 Not Used.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon provided that, if not agreed otherwise, the Architect shall respond to such requests within fifteen (15) days after Architect's receipt of such request. If such written request is made of the Architect, and the Owner or the Contractor disagrees with the Architect's response to such request, the matter shall be submitted to the Initial Decision Maker pursuant to Article 15.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The decision of the Owner, in consultation with the Architect, on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon provided that, unless agreed otherwise, the Architect shall respond to such requests within fifteen days after Architect's receipt of such request. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site and, unless otherwise expressly indicated, refers to subcontractors of all tiers performing any part of the Work (other than Subcontractors). The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### § 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable, but in no event more than ten days after the Owner's execution of the Contract (or such shorter period of time as required by applicable law), shall notify the Owner and Architect of the names, addresses, Connecticut Tax Registration numbers, and Federal Employer Identification numbers (or social security numbers as to individuals) of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within fourteen days of receipt of the information, the Architect or Owner may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity; or (2) requires additional time for review. Failure of the Architect or Owner to provide notice within the fourteen-day period shall constitute notice of no

reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection.

§ 5.2.2.1 The Contractor shall not contract with a person or entity who appears on the State of Connecticut Debarment List, the Federal Davis Bacon Act Debarment List, both of which are available through:

<http://www.ctdol.state.ct.us/>

or the Federal List of Excluded Parties Listing System available through <http://epls.arnet.gov/>

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work and is not ineligible to be contracted with in accordance with Section 5.2.2.1, the Contract Sum shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity (including those who are to furnish materials or equipment fabricated to a special design) for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.2.5 If requested by the Owner, the Contractor shall provide to the Owner copies of all subcontracts and supply agreements entered into by the Contractor for the Work.

§ 5.2.6 The Contractor shall comply with its obligations under Connecticut General Statutes §4b-93 and §4b-96 including, without limitation and as applicable, its obligation to contract with those Subcontractors identified in the Contractor's bid for the Project to perform the (1) masonry, (2) electrical, (3) plumbing, and (4) heating, ventilating and air conditioning (HVAC) components of the Work and to timely provide copies to the Owner of the executed subcontracts in accordance with the requirements of Connecticut General Statutes §4b-96.

§ 5.2.7 All subcontracts shall comply with the requirements of Connecticut General Statutes §4b-96 and shall be in the form provided by the Owner. The Contractor may supplement the terms and conditions set forth in the Owner supplied form of subcontract by attachment of additional terms and conditions thereto provided such supplemental terms and conditions are not inconsistent or in conflict with the requirements of CGS §4b-96. In the event of any such conflict or inconsistency, the provisions of the form of subcontract set forth in CGS §4b-96 shall prevail and control.

### § 5.3 Subcontractual Relations

§ 5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of

the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### § 5.4 Contingent Assignment of Subcontracts

- § 5.4.1 Each subcontract for a portion of the Work is assigned by the Contractor to the Owner, provided that
- .1 assignment is effective only after termination of the Contract by the Owner pursuant to Article 14 and only for those subcontracts that the Owner accepts by notifying the Subcontractor and Contractor; and
  - .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract, the Owner assumes the Contractor's rights and obligations under the subcontract but only to the extent arising subsequent to the effective date of the assignment and related to Work not yet performed. Contractor agrees to execute any and all other documents reasonably required to effect the assignment.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than sixty (60) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

§ 5.4.4 The Contractor shall promptly, but in any event not later than ten (10) days after obtaining knowledge thereof, advise the Owner in writing of any claim or demand by a Subcontractor claiming that any amount is due to such Subcontractor or claiming any default by the Contractor in any of its obligations to such Subcontractor.

### ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

#### § 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules and construction requirements. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement between the Owner and Contractor. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under these General Conditions, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

#### § 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for

introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent. If the performance of any part of a Contractor's Work depends on proper and timely execution or relies upon the interphasing or coordinating of the work of any Separate Contractor or the Owner, the Contractor shall allow for this interrelationship in the planning and performance of the Contractor's Work, without interference with the work of any Separate Contractor or the Owner.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction (collectively and individually, "Interference"). The Owner shall have the right to off-set such costs against any amounts owed to the Contractor by the Owner to the extent related to the Project. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's Interference but only as regards Interference by Separate Contractors whose work was not identified in the Contract Documents as work to be performed by Separate Contractors.

§ 6.2.4 The Contractor shall promptly remedy the damage that the Contractor wrongfully causes to completed or partially completed construction or to the property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§6.2.6 Upon the Owner's request, the Contractor shall defend any proceedings brought against the Owner by any Separate Contractor on account of any damage alleged to have been caused by the Contractor which arises from the Contractor's failure to comply with the terms and conditions of this Section 6.2.

### § 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Owner will allocate the cost among those responsible.

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect. A Construction Change Directive is a directive by the Owner that may or may not be agreed to by the Contractor. All changes to the Work shall be approved by the Owner. Except as permitted in Section 7.3, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alterations or additions to the Work, whether or not there is, in fact, any unjust enrichment, shall be the basis for any claim for an increase in the Contract Sum, an extension of the Contract Time, or a change in any



time period provided for in the Contract Documents.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

## § 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Owner or Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

There shall be no extension in the Contract Time unless the Contractor can effectively demonstrate that the Work delayed is on the critical path of the approved construction schedule as provided in Division 1 of the Specifications and in Section 8.3 of these General Conditions.

The signature of the Architect on the Change Order signifies that the Architect has reviewed the proposed Change Order, with accompanied breakdowns and subcontractor's change proposals, for appropriate quantities and unit costs and recommends approval of the proposed Change Order. The Architect's signature is not necessary in order for the Change Order to constitute a modification to the Contract which binds the Owner and the Contractor if the Contractor and the Owner have both signed the Change Order.

## § 7.2.2 Change Order Cost Components

The Contractor's proposal for a Change Order shall be itemized completely, submitted in a detailed format acceptable to the Owner, and shall include the following itemized cost components, as applicable:

### § 7.2.2.1 Engineered Equipment and Materials:

Costs for Engineered Equipment and Materials included in any Change Order shall be considered all-inclusive of the purchase cost thereof including all freight costs, purchasing services, expediting, and inspections and shall be substantiated by manufacturer and supplier quotes subject to review and approval by the Owner. Engineered Equipment shall be defined as equipment to be incorporated into and become a permanent part of the completed installation specified in the Contract Documents. Materials shall be defined as construction materials that become incorporated into and become a permanent part of the completed installation.

### § 7.2.2.2 Direct Field Labor Hours:

Direct labor work hours included in any Change Order shall be itemized indicating the direct labor hours to be expended in the actual installation of Engineered Equipment and Materials. The quantity of hours shall be based upon the Contractor's estimate to complete the subject Work based upon actual field conditions and shall be subject to review and approval by the Owner.

### § 7.2.2.3 Direct Field Labor Costs:

Direct field labor costs are defined as the costs of the direct labor required for the actual installation of Engineered Equipment and Materials. Direct field labor costs shall be based on the Contractor's direct field labor rates, which rates are subject to review and approval by the Owner and which rates shall be substantiated by a detailed direct labor cost breakdown with associated back-up support in a form acceptable to the Owner. The Contractor's direct field labor rates may include hourly labor classifications for foremen, journeymen, apprentices, laborers, etc. Direct field labor rates may include the Contractor's direct labor payroll costs including social security, unemployment (federal and state), workers' compensation insurance, fringe benefits, and any other identified costs directly related to direct labor.

If the Project is subject to prevailing wage rates, no wage rate above the prevailing rate shall be allowed unless such wage rate is substantiated by documentation of actual wages paid in accordance with such wage rate except in the case where the Contractor's wage rates were submitted to and accepted by the Owner as a condition of the Contract.

#### § 7.2.2.4 Construction Equipment and Tool Rental:

Costs associated with Contractor owned or rented construction equipment and major tools used in the performance of the Work may be included as part of the cost of a Change Order if it is demonstrated to the Owner's satisfaction that such costs are valid and related to the change in the Work which is the subject of the Change Order. Major tools shall be defined as non-hand-held tools. Pricing rates for construction equipment and major tools shall be subject to Owner's review and approval. Costs for specialized construction equipment not already on site shall be shown separately and shall require justification by the Contractor.

#### § 7.2.2.5 Field Overheads (Indirects):

Field overhead (indirect) labor shall mean and include field (onsite) supervision (general foremen, field engineers). Costs for field overhead (indirect) labor shall be based on hourly rates which are subject to review and approval by the Owner. Such costs shall be allowed as part of the cost of a Change Order if it is demonstrated to the Owner's satisfaction that such costs are valid and arise as a direct result of the change in the Work which is the subject of the Change Order. All such costs shall be substantiated by supporting data submitted for review and approval by the Owner. Costs for specialized personnel or additional staff shall be shown separately and shall require justification by the Contractor.

Field Facilities shall mean and include the following:

1. Temporary offices (including office furniture, copiers, computers, printers, other office equipment, and supplies);
2. Temporary material storage (storage vans and containers, warehouse rental); and
3. Utilities (electricity, phones, data lines, restroom facilities).

Costs for Field Facilities, which are subject to the review and approval of the Owner, may only be included as part of the costs of a Change Order if (1) the Change Order includes an extension of the Contract Time which has been approved by the Owner in accordance with Section 8.3; or (2) the Contractor otherwise demonstrates to the Owner's satisfaction that such costs are valid and arise as a direct result of the change in Work which is the subject of the Change Order.

§ 7.2.2.6 As noted in Section 3.6, the Owner is a tax-exempt institution. The tax on materials or supplies exempted by the current regulations of the Department of Revenue Services shall not be included as a cost component of any Change Order or Change Order request/proposal.

#### § 7.2.2.7 Subcontractors

Subcontractors shall adhere to the same contract requirements and shall utilize change order pricing methodology that is consistent with the Contract. The Contractor shall provide detailed Subcontractor cost proposals to substantiate all subcontractor pricing.

#### § 7.2.2.8 General and Administrative Overhead (Home Office) Costs and Profit (Overhead and Profit)

Overhead and Profit shall cover the following:

1. All home office expenses;
2. Safety related items, including safety equipment, safety administration, and all related costs associated with the contractor's safety program;
3. Small tools, which are defined as construction tools with a value of up to \$500;
4. Consumable materials, which are normally used in the execution of the Work and as may be further defined in the general conditions section of the Specifications;
5. Indirect costs as related to field administrative personnel (project manager, field safety supervisor, planners, estimators, office manager, secretarial services, document control);
6. Indirect costs as related to support staff;
7. Commercial General, Automobile, Umbrella, Aircraft and Contractor's Pollution Liability Insurance as described in Section 11.1.1;
8. Parking;
9. Safety;
10. Commissioning Requirements;

11. Such other items as are commonly considered part of home office overhead;
12. Company vehicles, gas, mileage and travel time;
13. Union-related contributions and expenses;
14. Any training; and
15. Licenses.

§ 7.2.2.9 The amount to be included in a Change Order for Overhead and Profit shall be based on and limited to the markup percentages identified in the table below as applied to the total net increase in the direct costs of the Work which arises as a direct result of the change in the Work which is the subject of the Change Order.

<b>Contractor/Subcontractor Combined Overhead and Profit Markup Table:</b>	
Contractor markup on self-performed work	15%
Contractor markup on Subcontractor work.	5%
Subcontractor markup on self-performed work.	15%
Subcontractor markup on Work performed by Sub-subcontractors under contract with a Subcontractor.	5%
Markup on Work that is self-performed by a Sub-subcontractor under contract with a Subcontractor.	10%
Subcontractor markup on Sub-subcontractor work	0%
Sub-subcontractor markup on Work performed by lower tier Sub-subcontractors	0%

§ 7.2.2.10 Notwithstanding the foregoing, the aggregate markup for Overhead and Profit included in any Change Order shall not exceed twenty percent (20%) of the total net increase in the direct costs of the Work which arises as a direct result of the change in the Work which is the subject of the Change Order.

§ 7.2.2.11 Overtime, when specifically authorized by the Owner and not as an Extraordinary Measure (as defined in Section 8.2.3.2), shall be paid for by the Owner on the basis of premium payment only, plus the cost of insurance and taxes based on the premium payment period.

§ 7.2.2.12 For a change in the Work resulting in a net decrease in the direct cost of the Work, the Change Order will reflect a reduction in the Contract Sum of an amount equal to such net decrease as confirmed by the Owner. In the case where there are both increases and decreases in direct costs of the Work, Overhead and Profit included in the Change Order shall be figured on the basis of the net increase in costs, if any, with respect to that change.

§ 7.2.2.14 Bond Costs: Actual additional bond premiums assessed to the Contractor by the surety issuing the payment and performance bonds for the Project as a direct result of an increase in the Contract Sum reflected in the subject Change Order may be included as part of the costs of the Change Order only when supported by written documentation from the surety confirming that the Change Order requires an increase to the original payment and performance bonds. Any additional bond premiums to which Contractor would be entitled shall be addressed in a final Change Order with no additional fee or mark-up thereon.

§ 7.2.3 The Contractor shall submit proposals for Change Orders on the “Change Order Proposal Request Form” provided in Division 1 of the Specifications or on a form and in a format otherwise acceptable to the Owner. In order to facilitate the Owner’s review of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, unit prices, and Subcontracts. Subcontractor proposals shall be submitted in support of the Contractor’s Change Order proposal and shall be similarly itemized.

§ 7.2.4 Alternates awarded by Change Order after Contract execution are not subject to Contractor,

Subcontractor or Sub-subcontractor mark-up for Overhead and Profit.

§ 7.2.5 Agreement upon and execution of any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time. In the event a Change Order increases the Contract Sum, Contractor shall include the Work covered by such Change Orders in Applications for Payment as if such Work were originally part of the Contract Documents.

§ 7.2.6 Any percentage referred to hereafter for General Conditions, and/or Overhead and Profit included in the adjustment to the Contract Sum shall be applied to the costs of performing the Work attributable to the change as stated in 7.3.4.1 through 7.3.4.5. No markup shall be allowed for premiums on bonds and insurance.

### § 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Owner or Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly. The signature of the Architect signifies that he has reviewed and recommends the change. However, if the Owner has signed the Change Directive the Architect's signature is not necessary in order for the Change Directive to be valid.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for a proposed adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee;
- .4 Time and materials subject to a not to exceed a stipulated price; or
- .5 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method for adjustment in the Contract Sum shall be determined in the sole discretion of the Owner, on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable amount for overhead and profit in accordance with, and not to exceed the limitations set forth in, Section 7.2. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Owner may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs of performing the Work for the purposes of this Section 7.3.4 shall be limited to the following as described in Section 7.2:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies and equipment, including the cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools and any hand-held equipment, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds, permit fees, and sales, use or similar taxes directly related to the change; and
- .5 Costs of field overhead personnel directly attributable to the change based on supporting data.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Owner of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. The Contractor must proceed promptly regardless if the directive is signed by the Contractor.

§ 7.3.8 Not Used.

§ 7.3.9 Not Used.

§ 7.3.10 When the Owner and Contractor agree concerning the adjustments in the Contract Sum and/or Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.3.11 If the Contractor does not expeditiously proceed with the Work to be performed under a Construction Change Directive (regardless of whether or not such Work is in dispute), the Owner may, in its sole discretion, cause such Work to be performed by others, and deduct the actual costs incurred by the Owner in connection with such reassigned Work from the Contract Sum.

#### § 7.4 Minor Changes in the Work

The Architect may, subject to approval of the Owner, order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Contractor shall carry out such written orders promptly.

The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and Owner and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect and Owner that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### ARTICLE 8 TIME

#### § 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Notice to Proceed.

§ 8.1.3 The date of Substantial Completion is the date Substantial Completion is achieved in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

#### § 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Contract, the Contractor confirms that the Contract Time is a reasonable period for performing the Work and that the Contractor is capable of completing the Work in accordance with the Contract Documents within the

Contract Time.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.3.1 The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The construction schedule shall be updated to reflect actual conditions (sometimes referred to as progress reports) as set forth in Section 3.10.1 of these General Conditions or as otherwise requested by the Owner. In the event any progress report indicates any delays or potential delays, the Contractor shall advise the Owner of its plan to recover the schedule, providing the Owner with a recovery schedule, and shall further take all steps necessary to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report or recovery schedule constitute an adjustment in the Contract Time or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

§ 8.2.3.2 In the event the Owner determines that the performance of the Work has not progressed or reached the level of completion required by the approved construction schedule for reasons within the responsibility of the Contractor, the Owner shall have the right to order the Contractor to take any and all corrective measures necessary to expedite the progress of construction, including, without limitation, (1) working additional shifts or overtime; (2) supplying additional manpower, equipment, and facilities; and (3) other similar measure (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary Measure shall continue until the progress of the Work complies with the stage of completion required by the approved construction schedule. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule.

§ 8.2.3.3 The Contractor shall not be entitled to any adjustment in the Contract Price in connection with Extraordinary Measures required by the Owner, if the Owner determines that the conditions creating the need for such Extraordinary Measures were within the responsibility of the Contractor.

§ 8.2.3.4 The Owner may exercise the rights furnished the Owner under or pursuant to this Section as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with any approved construction schedule or completion date established in accordance with the Contract.

§ 8.2.4 Not Used.

§ 8.2.5 Except in the event of an emergency, no substantial field operations shall be performed outside of regular working hours without the prior approval of the Owner. The Contractor shall not be entitled to additional compensation for work performed outside of regular working hours. For the purposes of this Contract "regular working hours" shall mean and include the hours of 7:00 a.m. to 3:00 p.m. unless otherwise provided in the Contract Documents.

### § 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; or (3) by labor disputes, fire, or unavoidable casualties beyond the Contractor's control, then the Contract Time may be extended by Change Order for such reasonable time periods as demonstrated through a Critical Path Analysis as described in and in conformance with Division 1 of the Specifications and accepted by the Owner.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.2.1 Claims of delay and requests for extensions of time shall set forth in detail the circumstances of such claim, the dates upon which the claimed delay began and ended, and the number of days' extension of time requested. The Contractor shall provide supporting documentation as the Architect and Owner may require, including a revised Construction Schedule indicating the effect of the circumstances which form the basis for the claim.

§ 8.3.2.2 The Contractor shall not be entitled to an extension of time for each and every one of a number of causes which have a concurrent and interrelated effect on the progress of the Work.

§ 8.3.2.3 Claims for extensions of time arising out of authorized changes in the Work shall be made in writing prior to or concurrent with the submission of the Contractor's proposal for such changes. No extension of time arising out of changes in the Work will be granted after the date upon which the Contractor is authorized to proceed with such changes unless specific provision for an extension of time has been incorporated in the Owner's authorization to proceed.

§ 8.3.2.4 No Damage for Delay. Notwithstanding anything to the contrary set forth in the Contract Documents, the Owner shall not be liable to the Contractor for Claims or damages of any nature caused by or arising out of delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the procedures set forth in the Contract Documents. Except to the extent, if any, expressly prohibited by law, the Contractor expressly agrees not to make and hereby waives any Claim for damages for any delay, including, but not limited to, those resulting from increased labor or material costs; directions given or not given by the Owner or Architect, including scheduling and coordination of the Work; the Architect's preparation of drawings and specifications or review of shop drawings and requests for instruction(s); or, on account of any delay, obstruction or hindrance for any cause whatsoever by the Owner, Owner, Architect, or any Separate Contractor, whether or not foreseeable or anticipated. The Contractor agrees that its sole right and remedy therefore shall be an extension of the Contract Time, if appropriate.

§ 8.3.2.5 It is expressly understood that, notwithstanding anything to the contrary set forth in the Contract Documents, no Subcontractor or Sub-subcontractor shall be entitled to make any Claim for additional compensation, costs or damages against the Contractor (nor may the Contractor assert against Owner such Claims as pass-through claims of Subcontractor or otherwise) for delay. Unless agreed by Owner in writing, Contractor shall include in every Subcontract a 'No-Damage-For-Delay' provision in a form approved by the Owner.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by the Owner under other provisions of the Contract Documents.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### § 9.2 Schedule of Values

§ 9.2.1 The Contractor shall submit a schedule of values to the Architect and Owner, as provided in Section 9.2.1.1 below, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, as the Owner may require. This schedule, unless objected to by the Architect or Owner, shall be used as a basis for reviewing

the Contractor's Applications for Payment for the Work. Any changes to the schedule of values shall be submitted to the Architect and Owner and supported by such data to substantiate its accuracy as the Architect or Owner may require, and, unless objected to by the Architect or Owner, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.2.1.1 The Contractor shall submit its proposed schedule of values to the Owner and the Architect for review and approval before the earlier of (i) thirty (30) days after the execution of the Contract; and (ii) the submission by the Contractor of its first Application for Payment for the Work.

§ 9.2.1.2 The final schedule of values for the Work shall be submitted (typewritten) on an AIA Document G702 form and shall be broken down into a minimum of sixteen (16) divisions based on the Construction Specifications Institute (CSI) Guidelines and subdivided further by Materials and Labor.

### § 9.3 Applications for Payment

§ 9.3.1 By the twenty-fifth day of each month, the Contractor shall submit to the Owner and the Architect a draft Application for Payment for Work performed through the end of such month in the form of an AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet. The latest edition issued by the AIA of each such document must be used.

The Owner and the Architect will within ten (10) days after receipt of the Contractor's draft Application for Payment notify the Contractor in writing of all necessary revisions.

The Contractor shall make all revisions to the Application for Payment as required by the Owner.

The Contractor shall then submit to the Owner and the Architect an Application for Payment for Work in the form of a notarized AIA Document G702, Application for Payment, supported by AIA Document G703, Continuation Sheet, free of any handwritten, marks, notes, annotations, etc. and an Affidavit of Payment and Release of Claims form (either partial release or final release as appropriate) in a form as provided by the Owner.

By submission of the Affidavit and the Application for Payment the Contractor certifies that, to the best of the Contractor's knowledge, information and belief, the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that the current payment requested and shown therein is now due.

§ 9.3.1.1 Each payment requisition submitted by the Contractor shall include a statement showing the status of all pending construction change orders, other pending change directives and approved changes to the original Contract or subcontract. Such statement shall identify the pending construction change orders and other pending change directives, and shall include the date such change orders and directives were initiated, the costs associated with their performance and a description of any work completed. As used in this subsection, "pending construction change order" or "other pending change directive", means an authorized directive for extra work that has been issued to the Contractor or a Subcontractor.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material or equipment supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Applications for Payment shall deduct, from the amount claimed due, the retainage and any other amounts to be withheld pursuant to Section 5.1.6 of the Agreement. The Contractor shall be prohibited from withholding more than the retainage withheld by the Owner pursuant to the Agreement from any payment which is otherwise due to any Subcontractor.

§ 9.3.1.4 Pursuant to the requirements of §4b-93 of the Connecticut General Statutes, whenever the Owner has designated a separate section for a class of work, the Contractor shall, when applicable, state as part of its application for partial payment that it considers the work required to be done under any such separate section



to be fully completed in accordance with the terms of the Contract. The Owner shall thereupon conduct an inspection of the work in such class, and if it finds that such work has been fully completed in accordance with the terms of the Contract, it shall issue a statement certifying that such work is accepted as fully completed, and shall pay the Contractor in full for such work.

§ 9.3.2 Unless otherwise specifically approved by the Owner, the Owner will pay only for materials and equipment delivered and incorporated in the Work as required by the Contract Documents. If approved in advance by the Owner, payment may be similarly made for materials and equipment suitably stored on site or off site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.2.1 Payment for stored material or equipment either on site or off site will require Owner's prior approval. Approval will be dependent upon Contractor's demonstration of hardship due to extended time duration between required purchase and actual field installation or the critical nature of the commodity in relation to the critical path of the construction schedule. Additionally, the Contractor must provide secured storage, insurance coverage for the material or equipment during storage, transfer of ownership of the material or equipment to the Owner and the Contractor shall indemnify the Owner for all costs associated with any delay and the costs associated with or resulting from, the loss or damage of such material or equipment during such storage. Payment for such stored material or equipment will be limited to 80% of invoice verified cost to the Contractor. No payment will be considered for raw materials. Those items requiring fabrication must be complete so that identification and appropriate documentation can be obtained to ensure such items are part of the Work.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.3.4 If payment for stored materials or equipment is approved, Contractor shall furnish with its Application for Payment which includes such stored materials or equipment a vendor invoice establishing the value of the material or equipment stored along with a statement of the amount to be paid to the vendor therefore.

§ 9.3.4.1 Such stored items are subject to prior approval for storage and to inspection by Architect and Owner before payment therefore will be approved.

§ 9.3.4.2 The Contractor shall give the Owner Certificates of Insurance in accordance with the Contract Documents covering the full value of the items stored. Such insurance shall be maintained until the items are incorporated in the Work.

#### § 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in

whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

### § 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect, following consultation with the Owner, may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. The Architect, following consultation with the Owner, may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of:

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless full bond coverage, insurance or security acceptable to the Owner is provided by or demonstrated by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment in accordance with the provisions of this Contract;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 injury to persons or damage to the Work or property of the Owner, or a Separate Contractor, or others caused by the act of neglect of the Contractor or any Subcontractors;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance of the Contract Sum would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents;
- .8 failure to submit Construction Schedules as outlined in Division 1 of the Specifications in the time prescribed;
- .9 failure to submit all documents necessary for compliance with CHRO requirements;
- .10 failure to submit all copies of all certified payrolls;
- .11 failure to provide copies of subcontractors contracts per statute;
- .12 failure to submit any other documentation requested by the Owner necessary for compliance with the requirements of any regulatory agency;
- .13 amounts previously paid to the Contractor in excess of amounts properly due the Contractor; or
- .14 failure of the Contractor to comply with any of the Contractor's indemnification obligations under the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts

previously withheld. The Owner shall not be deemed in default by reason of withholding payment while any of the above grounds remain uncured, nor shall any interest accrue or be payable with respect to any payments so withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.5.5 The Owner shall have the right to apply any such amounts so withheld in such manner, as the Owner may deem proper to satisfy such claims or to secure such protection. Such application of such amounts shall constitute payments to the Contractor.

## § 9.6 Progress Payments

§ 9.6.1 After the Architect has certified an Application for Payment, the Owner shall make payment of the certified amount in the manner and within the time provided in the Contract Documents or shall so notify the Contractor of the Owner's intent to withhold payment to the extent reasonably necessary to protect the Owner from loss for which the Contractor is responsible, including, loss resulting from acts or omissions of Subcontractors due to causes set forth in Section 9.5.1.

§ 9.6.2 The Contractor shall pay any amounts due a Subcontractor or supplier, whether for labor performed or materials furnished, not later than seven (7) days after the date the Contractor receives payment from the Owner which encompasses labor performed or materials furnished by such Subcontractor or supplier. Retainage withheld by the Contractor from such payments shall not exceed amounts actually retained from payments to the Contractor on account of the Subcontractor's or supplier's portion of the Work. The Contractor shall include in all of its Subcontracts with its Subcontractors and suppliers a requirement that the Subcontractors and suppliers pay any amounts due any sub-subcontractors or suppliers no later than seven (7) days after the Subcontractor or supplier receives a payment from the Contractor which encompasses labor performed or materials furnished by such sub-subcontractor or supplier.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers the amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Pursuant to Connecticut General Statutes Sections 10a-109a through 10a-109y:

- .1 No payments shall be made by the Owner on account of this Contract for this project until the bills or estimates presented for such payments shall have been duly certified to be correct by the Owner;
- .2 The obligations of the Owner or the State of Connecticut to make payments to the Contractor for services, labor, or materials provided on this project are limited to those amounts set forth in the Contract Documents and any agreed upon changes or amendments thereto. Neither the

Owner nor the State of Connecticut shall or may be liable to make payments in excess of such amount.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor, Sub-subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

#### § 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment in accordance with the requirements of the Contract Documents, through no fault of the Contractor, within seven (7) days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven (7) days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven (7) additional days' notice to the Owner and Architect be entitled to the applicable statutory interest. Said provision does not apply where the Owner has submitted to the Contractor its intention to withhold payment in accordance with Section 9.6.1 or where the Architect has submitted to the Contractor its intention to withhold certification in accordance with Section 9.5.1.

#### § 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize, without impact or interruptions the Work for its intended use.

The Work shall be considered to be "Substantially Complete(d)" or to have reached "Substantial Completion" on the date as determined by the Architect when (1) the entirety of the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can utilize the Work for the use for which it is intended (subject only items on the Punch List, the completion of which can be accomplished within thirty (30) days without interfering with the actual use of the Work by the Owner or those claiming by, through or under the Owner); (2) the Contractor has obtained a temporary or permanent certificate of occupancy for the Work permitting the lawful occupancy of the entire Project and any other permits, approvals, licenses, and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial occupancy thereof; and (3) the Architect has issued a Certificate of Substantial Completion for the entirety of the Work pursuant to Section 9.8.4 of these General Conditions and the Owner has issued written approval of the Certificate of Substantial Completion.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is Substantially Complete (with the exception of the issuance of the Architect's Certificate of Substantial Completion and the Owner's approval thereof), the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment (the "Punchlist"). Failure to include an item on the Punchlist does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's Punchlist, the Architect will make an inspection to determine whether the Work or designated portion thereof is Substantially Complete (with the exception of the issuance of the Architect's Certificate of Substantial Completion and the Owner's approval thereof). If the Architect's inspection discloses any item, whether or not included on the Contractor's Punchlist, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is Substantially Complete, the Architect will prepare a

Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the Punchlist accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. The Certificate of Substantial Completion shall become valid upon the written approval thereof by the Owner.

§ 9.8.6 **Certifications.** The Contractor at completion of construction shall provide to the Owner a "Certificate of Substantial Compliance" bearing original signatures of an officer of the company stating: "This is to CERTIFY that, in my professional opinion the complete structure/renovations described above is in substantial compliance with the approved construction documents on file with the Owner. Minor deviations and special stipulations are noted below (if any)".

### § 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by the decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or the portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

### § 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied; (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect; (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents; (4) consent of surety, if any, to final

payment; (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties; (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner; (7) all documents necessary for compliance with CHRO requirements and as required to obtain the written statement of release from CHRO referenced in Section 5.1.6.2.6 of the Agreement; (8) copies of all certified payrolls, (9) certifies that all material installed does not contain asbestos; (10) the Certificate of Substantial Compliance referenced in Section 9.8.6; and (11) any other documentation requested by the Owner necessary for compliance with the requirements of any regulatory agency. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall promptly pay to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor, the written approval of the Owner and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 Not Used.

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

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 Safety Precautions and Programs

§ 10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. Prior to and as a condition of mobilization on site, the Contractor shall submit a Safety Plan to Owner. To the extent the Owner provides safety manuals or other information, any such manuals and information shall be deemed minimum requirements for the Contractor's fulfillment of its safety obligations. Safety fines may be assessed based on Owner's safety plan and or Occupational Safety and Health Administration ("OSHA").

§10.1.1.1 Prior to the commencement of the Work, the Contractor shall submit proof to the Owner of compliance with the requirements of Connecticut General Statutes §31-53b.

§10.1.1.2 The Contractor shall remove all snow and ice as may be required for the proper protection and/or prosecution of the Work. The Contractor shall coordinate and cooperate with the Owner for such activities.

§ 10.1.2 **Contractor's Safety Program:** The Contractor hereby acknowledges that the job site safety will be of utmost importance. Contractor shall be responsible for initiating, maintaining and supervising safety and anti-substance abuse precautions and programs in connection with the Work. Contractor shall provide all protection to prevent injury to all persons involved in any way in the Work and all other persons, including, without limitation, the employees, agents, guests, visitors, invitees and licensees of the Owner who may visit or be affected thereby. These precautions shall include, but in no event be limited to: (1) those set forth in the most current provisions of the Owner's Contractor Environmental Health and Safety Manual, which is incorporated by reference as a Contract Document; (2) the posting of danger signs and personal notification to all affected persons of the existence of a hazard of whatever nature; (3) the furnishing and maintaining of

necessary traffic control barricades and flagger services; (4) the use, storage, removal and disposal of required explosives or other hazardous materials only under the supervision of qualified personnel and after first obtaining permission of all applicable governmental authorities; (5) and the maintenance of adequate quantities of both hose and operable fire extinguishers at the job site. The Contractor shall set forth in writing its own safety and anti-substance abuse precautions and programs in connection with the Work and if requested by the Owner submit the same to the Owner or its designee for review. The Owner may but shall not be obligated to make suggestions and recommendations to the Contractor with respect thereto.

- .1 **Compliance of Work, Equipment and Procedures with all Laws:** All Work, whether performed by the Contractor, Subcontractors or Sub-subcontractors, or anyone directly or indirectly employed by any of them, and all equipment, appliances, machinery, materials, tools and like items incorporated or used in the Work, shall be in compliance with and conform to: (a) all applicable laws, ordinances, rules, regulations and orders of any public, quasi-public or other governmental bodies relating to the safety of persons and their protection against injury, specifically including, but in no event limited to the Federal Occupational Safety and Health Act of 1970, as amended and all rules and regulations now or hereafter in effect pursuant to said Act and the OSH Act of the State of Connecticut, as amended and all rules and regulations now or hereafter in effect pursuant to said Act; and (b) all rules, regulations and requirements of the Owner and its insurance carriers relating thereto. In the event of conflicting provisions, the more stringent shall govern.
- .2 **Contractor's Designation of Safety Program Administrator:** The Contractor shall designate a qualified member of its organization at the job site in accordance with the requirements of the Owner's Contractor Environmental Health and Safety Manual, whose duties shall include enforcement of the Contractor's Safety Program to assure compliance with Article 10 and to prevent accidents. This position may be required to be a full-time position dedicated to this Project. This person's name, qualifications and the estimated number of man-hours of effort per week performing this function shall be submitted to the Owner in writing. His or her identity, qualifications and level of effort must be satisfactory to the Owner who shall have the sole discretion to approve or reject the same. Any reduction to this schedule must be submitted to the Owner for approval. The Contractor shall further cause each of its Subcontractors of any tier to designate a qualified safety representative to assist the Contractor's safety representative in the performance of his or her duties as described above and the names of such representative shall be given to the Owner.
- .3 **Suspension of Contractor's Work:** If in the opinion of the Owner or its designee the Contractor shall fail to provide a safe area for the performance of the Work or any portion thereof, the Owner or its designee shall have the right (but not the obligation) to suspend Work in the unsafe area. Contractor shall be liable for all costs incurred of any nature (including without limitation overtime pay, liquidated damages or other costs resulting from delays) resulting from the suspension.
- .4 **Right of Owner to have Contractor Send Worker Home:** The Contractor shall provide to each worker on the job site the proper safety equipment for the duties being performed by that worker and will not permit any worker on the job site who fails or refuses to use the same. The Owner shall have the right but not the obligation to order the Contractor to cause any worker to be sent home for the day or to otherwise temporarily or permanently remove him or her from the job site for his or her failure to comply with safe practices or anti-substance abuse policies. Contractor shall promptly comply with such orders from the Owner and shall be liable for any and all costs of whatsoever nature, including attorney's fees paid or incurred by the Owner.

**§ 10.1.3 Protection of Work and Property; Responsibility for Loss** The Contractor shall, throughout its performance of the Work, maintain adequate and continuous protection of all property of the Owner and third parties and of the Work and temporary facilities against loss or damage from whatever cause arising out of the performance of the Work and shall comply with the requirements of the Owner and its insurance carriers and with all applicable laws, codes, rules and regulations with respect to the prevention of loss or damage to property as a result of fire or other hazards.

**§ 10.1.4 Emergencies** In any emergency affecting the safety of persons or property, or in the event of a claimed violation of any federal or state safety or health law or regulation arising out of or in any way connected with the Work or its performance, the Contractor shall act immediately to prevent threatened damage, injury, or loss or to remedy said violation whichever is applicable, failing which the Owner or its designee may immediately take whatever action it deems necessary including, but not limited to, suspending the Work.

The Owner may offset any and all cost or expenses of whatever nature including attorneys' fees paid or incurred by the Owner in taking such action against any sums then or thereafter due to the Contractor. The Contractor shall defend, indemnify, and hold the Owner, and its officers, agents, employees, harmless against any and all costs, expenses or liability in accordance with Section 3.18. If the Contractor shall be entitled to any additional compensation or extension of time claimed on account of emergency work not due to the fault or neglect of the Contractor or its Subcontractors or Sub-subcontractors, it shall be handled as a request for a Change Order as provided in Section 7.2 of this Contract.

## **§ 10.2 Safety of Persons and Property**

**§ 10.2.1** The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 Employees on the Work and other persons who may be affected thereby;
- .2 The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall provide and pay for whatever security measures the Contractor deems necessary to protect the Work until acceptance by the Owner through the issuance of a Certificate of Substantial Completion.

**§ 10.2.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury or loss.

**§ 10.2.3** At a minimum, the Contractor shall implement, erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities of the safeguards. Additionally, the Contractor shall maintain all passageways, guard fences, lights and other facilities for protection. The Contractor shall also be responsible for all measures necessary to protect any property adjacent to the Project and improvements thereon. Any damage to such property or improvements shall be promptly repaired by the Contractor at its sole cost and expense.

**§ 10.2.4** When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for the execution of the Work, the Contractor, at a minimum, shall exercise utmost care and carry on such activities under the supervision of properly qualified personnel. When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary, the Contractor shall give the Owner advance written notice of at least five (5) days prior to bringing to the site or utilizing such explosives, materials, equipment or methods.

**§ 10.2.5** The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 and indemnify and save the Owner harmless for all damage or injury to referenced persons and property caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the



cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable in whole or in part to the fault or negligence of the Contractor a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

- .1 The Contractor shall repair or replace any such damage at no additional cost to the Owner. Such repair or replacement shall be completed within one week of the damage or as otherwise directed by the Owner . If the Contractor fails or refuses to repair the damage promptly, the Owner may have the repair or replacement performed and charge the cost to the Contractor by way of offset or direct payment as elected by the Owner.

§ 10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger the safety of persons or property or cause damage or create an unsafe condition.

§ 10.2.8 All materials furnished and all Work installed shall comply with the rules and recommendations of the National Board of Fire Underwriters; with all applicable State and local codes, laws, ordinances, rules and regulations; with all requirements of local utility companies and with the recommendations of the Insurance Rating Organization having jurisdiction.

§ 10.2.9 All apparatus, equipment and construction such as ladders, scaffolds, chutes, etc. shall comply with the recommendations of the manual of Accident Prevention in Construction published by the Associated General Contractors of America.

### § 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents, including but not limited to the Owner's Contractor Environmental Health and Safety Manual, regarding any material, substance, chemical, waste, product, derivative, compound, mixture, solid, liquid, mineral or gas, whether naturally occurring or manmade, that is hazardous, toxic, or words of similar import or regulatory effect, and any petroleum or petroleum-derived products, radon, radioactive materials or wastes, asbestos in any form, lead or lead-containing materials, urea formaldehyde foam insulation, polychlorinated biphenyls and any other regulated materials identified by the U.S. Environmental Protection Agency (EPA), the U.S. Occupational Health and Safety Administration (OSHA), the U.S. Department of Transportation (DOT) and/or the Nuclear Regulatory Commission (collectively, "Hazardous Materials"). If the Contractor believes its Work will disturb or otherwise implicate any actual or suspected Hazardous Material or encounters a Hazardous Material not addressed in the Contract Documents, the Contractor shall not disturb any such Hazardous Material, immediately report the condition to the Owner and the Architect in writing and take all necessary precautions to prevent release of and exposure to the Hazardous Materials and foreseeable bodily injury or death to persons resulting from such Hazardous Material. If such reasonable precautions will be inadequate to prevent the release of and exposure to Hazardous Materials, or foreseeable bodily injury and death, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area.

§ 10.3.1.1 Upon request, the Owner will provide the Contractor with a written copy of the Hazard Communication Program and chemical inventory for areas in which the Work will be performed. The Owner, upon request, will make available to the Contractor an opportunity to review the Material Safety Data Sheets ("MSDS") on file for areas where hazardous chemicals are used and stored and in which the Work will be performed.

§ 10.3.2 Upon receipt of the Contractor's notice, pursuant to Section 10.3.1 the Owner shall obtain the services of a qualified consultant to assess the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless or otherwise abated. Upon written request, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform the assessments for the presence or absence of the material or substance or who are to perform the task of removal or safe

containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the Hazardous Material or substance has been rendered harmless or otherwise abated, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately (provided the Contractor has demonstrated to the Owner's satisfaction that delay to address the Hazardous Material impacted the critical path of the construction schedule) and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

#### § 10.3.3 Not Used.

§ 10.3.4 In no event shall the Owner have any responsibility for any substance or material that is brought to the Project site by the Contractor, any Subcontractor, Sub-subcontractor, any materialman or supplier or any entity for whom any of them is responsible. The Contractor agrees not to use any fills or other materials to be incorporated into the Work, which are hazardous, toxic or comprised of any items that are hazardous or toxic. In the event it is determined that materials that are hazardous, toxic or comprised of items that are hazardous or toxic have been used as fills or incorporated into the Work, the Contractor, at its sole expense, shall be responsible for immediate removal, proper disposal, and replacement of materials of the Work and surrounding areas so affected.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles; or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

#### § 10.4 Emergencies

In an emergency affecting the safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7. The Contractor shall promptly notify insurers, as applicable, the Architect and the Owner of the nature of the emergency. Immediately thereafter, the Contractor shall submit to the Architect and the Owner a written report including a description of the circumstances of the emergency and details of actions taken.

#### § 10.5 Lockout/Tagout Procedures Required by OSHA

§ 10.5.1 The Contractor shall abide by all OSHA and Owner regulations and procedures pertaining to lockout and tagout of machines or equipment to prevent injuries by ensuring that hazardous forms of energy are isolated. This includes electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy sources.

#### § 10.7 Confined Space Entry

§ 10.7.1 The Contractor shall abide by all OSHA and Owner regulations and procedures required to implement a confined space entry permit program.

#### § 10.8 Excavation and Trenching

§ 10.8.1 Any Work carried out under this Contract that will require excavation or trenching shall be carried out in accordance with all applicable Federal, State and Local rules and regulations, including OSHA regulations, and the Owner's applicable policies and procedures included in the Contract Documents.

§ 10.8.3 At a minimum, the Contractor shall comply with the Owner's Contractor Environmental Health and Safety Manual, which is available for review upon request and constitutes a Contract Document.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing

the endorsements, and subject to the terms and conditions, as described below, in the Agreement and, as applicable, elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, the State of Connecticut and their respective officers, officials, agents, employees, boards and commissions shall be named as additional insureds as provided in the Agreement and as otherwise required by the Contract Documents.

§ 11.1.2 The Contractor shall furnish to the Owner, and deliver at the time of the execution of the Contract, Performance and Labor and Material Payment Bonds (each, a “Bond” and collectively, the “Bonds”) pursuant to the requirements of Connecticut General Statutes §49-41, et seq. and the requirements of this Section 11.1. In all cases where the Contract Sum exceeds \$100,000, the Contractor shall furnish the Bonds, each of which shall be in compliance with the Owner’s required bond forms. The Bonds shall be provided by a Surety company licensed to do business in the State of Connecticut, that is acceptable to the Owner, and that is named in the current list of “Surety Companies Acceptable on Federal Bonds” as published in the “Treasury Department Circular 570”. The Surety company’s underwriting limitation, as further set forth in “Treasury Department Circular 570”, must not be less than the Contract Sum. The amount of each Bond shall be equal to the Contract Sum. The Bonds shall name the Owner as “Obligee”.

§ 11.1.3 In addition to the foregoing, each of the Bonds shall contain the following language: “In the event that the surety assumes the contract or obtains a bid or bids for completion of the Contract, the surety shall ensure that the contractor chosen to complete the Contract is prequalified pursuant to Section 4a-100 of the Connecticut General Statutes in the requisite classification and has the aggregate work capacity rating and single project limit necessary to complete the contract”.

§ 11.1.4 Upon the request of any person or entity appearing to be a potential beneficiary of the Bond covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of such Bond or shall authorize a copy to be furnished.

§ 11.1.5 **Notice of Cancellation or Expiration of Contractor’s Required Insurance.** Within three (3) business days after the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage. In the event of suspension by the Owner due to the Contractor’s failure to maintain the required insurance, the Contractor shall be responsible for, and shall not receive an extension of the Contract Time in connection with, the delay in the Work arising from the suspension.

§ 11.2 Not Used.

### § 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect’s consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect’s consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 Not Used.

§ 11.4 Not Used.

### §11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner and made payable to the Owner for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and, by appropriate agreements, the Architect and Contractor shall make payments to their consultants and Subcontractors in a similar manner.

§ 11.5.2 Not Used.

§ 11.5.3 If the Contractor or any of its Subcontractors is a non-resident contractor, the Contractor and/or subcontractor shall comply with the requirements of Connecticut General Statutes Section 12-430(7) (the "Statute"), to the extent applicable. If the Contractor is a verified contractor as defined in the Statute, the Contractor shall provide to the Owner written verification of that status from the State Commissioner of Revenue Services. If the Contractor is an unverified contractor as defined in the Statute, the Contractor shall provide to the Owner proof that the Contractor has posted with the Commissioner of Revenue Services a surety bond in an amount equal to five percent (5%) of the Contract Sum and which is otherwise in compliance with the requirements of the Statute.

§ 11.4.3 If the Contractor proposes to utilize a Subcontractor Default Insurance program in lieu of requiring Subcontractors to provide surety bonds for the Project, the Contractor must demonstrate actual cost savings to the Owner of no less than 18% between the cost of such program and the cost of traditional Subcontractor surety bonds.

## ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

### § 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without a change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Owner has not specifically requested to examine prior to its being covered, the Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction shall be at the Contractor's expense and the Contractor shall not be entitled to an adjustment of the Contract Time.

### § 12.2 Correction of Work

#### § 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing inspections, uncovering and replacement, and compensation for the Architect's and Owner services made necessary thereby, shall be at the Contractor's expense.

If prior to the date of Substantial Completion, the Contractor, a Subcontractor, a Sub-subcontractor or anyone for whom any of them is responsible uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing, and other building systems, machinery, equipment, or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner.

#### § 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5 and extended warranties required by

the Contract Documents, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.8.4, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly at Contractor's sole expense after receipt of notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor by the end of such one-year period and, thereafter, give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor. If the Contractor fails to correct nonconforming Work within a reasonable time after receipt of notice from the Owner or Architect not to exceed thirty (30) days, the Owner may correct it in accordance with Section 2.5 or take such other commercially reasonable measures to recompense the Owner for its expenses, losses and damages arising from such nonconforming work.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to modify the Contractor's obligations under Section 3.5 of these General Conditions or to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### § 12.3 Acceptance of Nonconforming Work

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

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules.

### § 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without the consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

### § 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

### § 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections and approvals of portions of the Work shall be made at an appropriate time as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense. If the inspections and tests conducted under Section 13.4.1 or this Section 13.4.2 reveal a failure in a portion of the Work, the Owner may order the inspection and testing at the Contractor's expense of any and all portions of the Work that are identical or similar to the failing portion.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's and Owner services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest Not Used.

### § 13.6 Compliance with Owner Policies and Guidelines

At a minimum, the Contractor shall comply with established Owner policies and guidelines, which have been previously provided to bidders and/or are available for review upon request. These policies are hereby

incorporated by reference herein, including but not limited to: Policies on Lockout/Tagout; Confined Space Entry as referenced in the Contractor's Environmental Health and Safety Manual; Code of Conduct; Sexual Harassment; Racism and Acts of Intolerance; Smoking.

### § 13.7 Preference in Employment

§ 13.7.1 In the employment of labor to perform the work specified herein, preference shall be given to citizens of the United States, who are, and continuously for three months prior to the date hereof have been residents of the labor market areas, as established by the Labor Commissioner in which said work is to be done; and if no such qualified persons are available, then to citizens who have continuously resided in the county in which the work is to be performed for at least three months prior to the date hereof and then to citizens of the State who have continuously resided in the State at least three months prior to the date hereof. In no event shall said provisions be deemed to abrogate or supersede in any manner any provision regarding residence requirements contained in a Collective Bargaining Agreement to which the Contractor is a party.

### § 13.8 Minimum Wage Rates

§ 13.8.1 If the Project involves new construction of a building or other structure or improvement and the total cost of all Work to be performed by Contractors and Subcontractors is \$1,000,000 or more or if the project involves remodeling, refurbishing, rehabilitation, alteration or repair of a building or other structure or improvement and such total cost is \$100,000 or more then:

- .1 The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of Section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

§ 13.8.2 The State of Connecticut Labor Department Wage Schedule ("Wage Schedule")(where required) has been provided to the Contractor and the Contractor acknowledges receipt the Wage Schedule and agrees to accept the current prevailing wage scale as well as any annual adjustment to the prevailing wage scale as provided by the Connecticut Department of Labor. Wage Rates will be posted each July 1st on the Department of Labor's website: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us). No such prevailing wage adjustment will be considered a basis for an amendment to this Contract. The Wage Schedule is deemed to reflect customary or prevailing wages for the Project and is hereby incorporated and made a part of the Contract Documents. Wage Rates shall be paid pursuant to Sections 31-53 and 31-54 of the Connecticut General Statutes and any regulations issued thereunder.

### § 13.9 Hours of Labor Permitted

§ 13.9.1 Pursuant to Section 31-57 of the Connecticut General Statutes, as applicable, no person shall be employed to work or be permitted to work more than eight hours in any day or more than forty hours in any week on any work provided for in the Contract. The operation of such limitation of hours of work may be suspended during an emergency upon the approval of the Owner.

### § 13.10 Examining and Copying Contractor's Records

§ 13.10.1 The Contractor shall permit the Owner or its duly authorized representative to examine and copy books and records of the Contractor relative to charges for extra work, alleged breaches of contract, settlement of claims, or any other matter involving the Contractor's demand for added compensation from the Owner. The Contractor shall also permit such examination and copying of its records as the Owner may deem necessary, excepting papers and records preceding the execution of the Contract that are not a matter of record with the Owner, in order to determine that the Contractor has complied with all laws and regulations pertaining to the Contract, such as but not limited to Labor Compliance, Affirmative Action Program and Equal Employment Opportunity.

§ 13.10.2 The Contractor further agrees that he shall keep all records relating to this Contract until the expiration of six (6) years after final payment under this Contract is made, or six (6) months after settlement of any disputes whichever may be later.

§ 13.10.3 The Contractor further agrees that Contractor and all Subcontractors shall permit the Owner, at its own expense, by its duly authorized representatives, to inspect and audit all their data, records and files pertaining to this Contract.

### § 13.11 System Layout Drawing

§ 13.11.1 System layouts indicated on the on the drawings are generally diagrammatic and locations and arrangements of items are approximate. Exact routing of conduit, wiring, location of fixtures, outlets, panels, piping, valves and all other equipment shall be governed by the structural conditions and obstructions. The entire layout shall be followed as closely as possible and the right is reserved by the Owner to reasonably change the locations to accommodate any conditions which may arise during the progress of the Work without additional compensation to the Contractor.

### § 13.12 Guaranty of Performance

§ 13.12.1 If the Contractor has submitted the financial statement of a parent or other affiliated entity in its Proposers Qualification Statement, or if pre-qualified, its application for pre-qualification and has also indicated in that submission that such parent or affiliate will guarantee the performance of the Contract, then the parent or affiliate shall execute, simultaneously, with the Contractor's execution of the Contract, a Guaranty in a form provided by and acceptable to the Owner.

### § 13.13 JOINT VENTURE

§ 13.13.1 If the Contractor is a joint venture, each joint venture partner shall be jointly, severally and individually responsible to the Owner for the performance of any and all obligations of the Contractor encompassed by the Contract Documents and as otherwise required by applicable law, and each joint venture partner shall be jointly, severally and individually liable to the Owner for any failures to perform such obligations in accordance with the Contract and such applicable law. In its dealings with the Owner, each joint venture partner shall have full authority to act in behalf of and bind the joint venture and any other joint venture partner. Each joint venture partner shall be considered to be the agent of the joint venture and of any other joint venture partner.

### §13.14 Worker Geographic Distribution

§13.14.1 If the Project is a Covered Project (as defined hereinafter), the Contractor shall comply with the provisions of this Section 13.14.

§13.14.2 The Contractor shall submit to the Owner a plan for encouraging the hiring of Workers (as defined hereinafter) with Residence (as defined hereinafter) in the State of Connecticut.

§13.14.3 Following the close of each Quarter (as defined hereinafter), the Contractor shall submit a Worker Geographic Distribution Report (as defined hereinafter) to the Owner in a form satisfactory to the Owner. The "Worker Geographic Distribution Report" is a report that shall provide the following information for each Worker paid, during the most recently closed Quarter, for Work performed on the Project:

- .1 The numbers of hours of Work for which such Worker was paid during such Quarter.
- .2 The Wages (as defined hereinafter) paid to such Worker during such Quarter.
- .3 The Residence of such Worker as of the close of such Quarter.

§13.14.4 The Worker Geographic Distribution Report shall not contain any personally identifiable information about a Worker.

§13.14.5 The following terms shall have the meaning assigned below for the purposes of this Section 13.14.



- .1 “Covered Project” is a project that is both subject to Section 31-53(a) of the Connecticut General Statutes and for which the Contract Sum is \$1,000,000 or greater.
- .2 “Quarter” means a calendar quarter of each calendar year.
- .3 “Residence” is the state and town in which a Worker resides, as reflected in the payroll records of such Worker’s employer.
- .4 “Subcontractor” is any subcontractor or sub-subcontractor of the Contractor, which subcontractor or sub-subcontractor employs Workers on the Project.
- .5 “Wages” are the wages that are subject to Section 31-53(a) of the Connecticut General Statutes (including any amounts paid to an employee welfare fund).
- .6 “Worker” is an employee of the Contractor or a Subcontractor (as defined hereinabove), which employee is performing Work on the Project and whose wages for such Work is subject to Section 31-53(a) of the Connecticut General Statutes.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; or
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped.

### § 14.1.2 Not Used.

§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon seven (7) days’ written notice to the Owner, the Initial Decision Maker and the Architect, terminate the Contract and recover from the Owner payment for Work executed in accordance with the Contract Documents and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery which loss arises as a direct result of such termination.

§ 14.1.4 If the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner’s obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven (7) additional days’ notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate, without prejudice and without waiving any other right or remedy the Owner may have, the Contract if the Contractor

- .1 refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents;
- .5 Fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor’s ability to complete the Work in compliance with all requirements of the Contract Documents;
- .6 Refuses or fails to prosecute the Work or any separable part, with the diligence that will ensure its completion in accordance with the approved construction schedule for the Project as it may be adjusted in accordance with the Contract Documents; or
- .7 Fails to comply with laws, rules, regulations, or directives regarding job site safety; or to comply with the provisions of the Owner’s Contractor Environmental Health and Safety

Manual, or orders or directives regarding safety issued by the Owner pursuant to the Contract.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exists and the Owner determines that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven (7) days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

In lieu of terminating the employment of the Contract as regards the entirety of the Work, the Owner may elect to limit such termination to a portion of the Work and to require the Contractor to proceed with the balance of the Work in accordance with the Contract Documents.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be retained by the Owner. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect and Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause and without prejudice and without waiving any other right or remedy the Owner may have, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit as and to the extent provided in the Contract Documents. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, without prejudice and without waiving any other right or remedy the Owner may have, terminate the Contract in whole or in part for the Owner's convenience and without cause. Termination by the Owner under this Section shall be by a notice of termination delivered to the Contractor specifying the extent of termination and the effective date.

§ 14.4.2 Upon receipt of a notice of termination for convenience, the Contractor shall immediately and in accordance with instructions from the Owner, proceed with performance of the following duties (regardless of whether or not there is agreement between the Owner and the Contractor as to amounts due to the Contractor and remaining unpaid hereunder):

- .1 Cease operations as specified in the notice;
- .2 Place no further orders and enter into no further Subcontracts for materials, labor, services or facilities except as necessary to complete Work not terminated;
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

- .4 Proceed to complete the performance of Work not terminated; and
- .5 Take actions that may be necessary or that the Owner may direct for the protection and preservation of the terminated Work.

§ 14.4.3 Upon such termination for the Owner's convenience, the Contractor shall be entitled to recover as its sole remedy for such termination, payment for terminated Work performed in accordance with the Contract Documents prior to the effective date of termination, payment for items associated with the terminated Work that were properly and timely purchased or fabricated off the Project site, delivered and stored in accordance with the Owner's instructions and satisfactorily evidenced demobilization costs. The Contractor hereby waives and forfeits all other claims for payment and damages, including without limitation, anticipated profits.

§14.4.4 In calculating the amount payable to the Contractor by the Owner upon termination for the Owner's convenience, the Owner shall be credited for (1) payments previously made to the Contractor for the terminated portion of the Work; (2) claims which the Owner has against the Contractor under the Contract and (3) the value of the materials, supplies, equipment or other items that are to be disposed of by the Contractor that are part of the Contract Sum.

§14.4.5 The payment to the Contractor pursuant to this Section may not exceed the total Contract Sum as reduced by:

- .1 The amount of payments previously made by the Owner to the Contractor; and
- .2 The portion of the Contract Sum allocable to Work not terminated.

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 Claims

#### § 15.1.1 Definition

A Claim is a properly noticed demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

#### § 15.1.2 Time Limits on Claims

Claims by the Contractor against the Owner must be initiated within twenty-one (21) days after the occurrence of the event giving rise to such Claim or within fourteen (14) days after the Contractor first recognizes the condition giving rise to the Claim, whichever is later. Claims may also be reserved by the Contractor in writing within the time limits set forth in this Section 15.1.2. If a Claim is reserved, the Resolution of Claims and Disputes procedures described in this Article 15 shall not commence until a written notice from the Contractor in compliance with the requirements of Section 15.1.3 is received by the Owner. No such claim shall be valid unless so made. The Contractor waives all Claims and causes of action not commenced in accordance with this Section 15.1.

#### § 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by the Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the Owner and to the Initial Decision Maker with a copy sent to the Architect.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and the Initial Decision Maker.

§ 15.1.3.3 All notices of Claims (whether before or after the period for correction of Work) must state the following in bold capital letters: "**THIS COMMUNICATION CONSTITUTES A NOTICE OF CLAIM**". Any communication that does not include such statement shall not constitute a Claim under the

Contract. As regards a notice of reservation of Claim, such notice must state the following in bold capital letters: **“THIS COMMUNICATION CONSTITUTES NOTICE OF RESERVATION OF A CLAIM”**. Any communication that does not include such statement shall not constitute a reservation of a Claim under the Contract. In addition, any notice of Claim or reservation of Claim must clearly identify the alleged cause and the nature of the Claim and include data and information then available to the Contractor to enable and to facilitate the Owner’s verification and evaluation of the Claim.

#### § 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker’s decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

#### § 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§15.1.5.2 If the Contractor believes that additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect; (2) an order by the Owner to stop the Work where the Contractor was not at fault; (3) a written order for a minor change in the Work issued by the Architect; (4) failure of payment by the Owner; (5) termination of the Contract by the Owner; (6) Owner’s suspension; or (7) other reasonable grounds, the Claim shall be made in accordance with the provisions of this Article 15.

#### § 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor’s Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. No such claim shall be valid unless made in accordance with the provisions of this Article 15. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

#### § 15.1.7 Waiver of Claims for Consequential Damages

Not Used.

§ 15.1.8 Injury or Damage to Person or Property. If the Contractor suffers injury or damage to person or property because of an act or omission of the Owner, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding twenty-one (21) days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 15.1.9 Claims for Concealed or Unknown Conditions: If, upon or subsequent to the Contractor’s and its Subcontractors’ site visits pursuant to Section 3.2.1 and performance of the tests, examinations, and inspections required by Section 3.2.2, the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor will promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 5 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they

differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different in the respects noted above and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. Any claim by the Contractor in opposition to such determination must be made within 21 days after the Architect has given notice of the recommendation. The Owner will have the final authority to accept or reject the Architect's recommendations, which decision by the Owner shall be subject to further proceedings pursuant to Article 15.

## § 15.2 Initial Decision

§ 15.2.1 Claims by the Contractor, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Owner will serve as the Initial Decision Maker, unless otherwise indicated in Section 6.1 of the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, regardless of (1) whether such matters relate to execution and progress of the Work, or (2) the extent to which the Work has been completed. The decision by the Initial Decision Maker in response to a Claim shall not be a condition precedent to arbitration or litigation in the event (1) the position of Initial Decision Maker is vacant, (2) the Contractor has not provided substantiating evidence of its Claim; or (3) the Initial Decision Maker has failed to take action required under Section 15.2.2 within thirty (30) days after the Claim is made.

§ 15.2.2 The Initial Decision Maker will review Claims by the Contractor and within thirty (30) days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party; (2) reject the Claim in whole or in part; (3) approve the Claim; (4) suggest a compromise; or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims of the Contractor, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim of the Contractor or to furnish additional supporting data, such party shall respond, within ten (10) days after receipt of such request, and shall either (1) provide a response on the requested supporting data; (2) advise the Initial Decision Maker when the response or supporting data will be furnished; or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.4.1 If a Claim of the Contractor has not been resolved after consideration of the foregoing, the Initial Decision Maker will render a written decision on the claim, including any change in the Contract Sum or Contract Time or both, which decision shall be final and binding but subject to meeting and mediation pursuant to Section 15.3 of this document and arbitration or litigation pursuant to Connecticut General Statutes Section 4-61 and Section 15.4 of this Contract to the extent applicable.

§ 15.2.5 Not Used.

§ 15.2.6 Not Used.

§ 15.2.6.1 Not Used.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's

default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 Not Used.

### § 15.3 Mediation

§ 15.3.1 Claims of the Contractor except those waived as provided for in Section 9.10.5 shall be submitted to the meeting and mediation process described in the Sections which follow, prior to and as a precondition to the Contractor pursuing any other available remedy. Claims by the Owner, at the option of the Owner, may be submitted to such meeting process and/or mediation process, and, in such event, Contractor shall be required to submit to and participate in such a meeting and/or mediation. The meeting shall be between the parties and attended by individuals with decision-making authority regarding the dispute, to attempt in good faith to negotiate a resolution of the dispute.

§ 15.3.2 The meeting referenced in Section 15.3.1 shall be held promptly, but not less than fourteen (14) days after a party's request for the meeting. The Contractor shall not submit any claim to mediation in accordance with the provisions of Sections 15.3.1 through 15.3.6 until fourteen (14) days after the date of the meeting.

§ 15.3.3 In connection with any such mediation, a request for mediation shall be made in writing, delivered to the other party to the Contract. The request may be made concurrently with the filing of applicable binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of sixty (60) days from the date of filing, unless stayed for a different period of time by agreement of the parties or as modified by court order.

§ 15.3.4 The parties will jointly appoint a mutually acceptable mediator, seeking assistance in such regard from a mutually agreed upon dispute resolution entity if they have been unable to agree upon such appointment within twenty (20) days from the submittal of the request for mediation. If the parties are unable to agree on the dispute resolution entity, the mediation shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of this Contract.

§ 15.3.5 The parties agree to participate in good faith in the mediation and negotiations related thereto for a period of sixty (60) days from the date of submittal, or until the parties reach an impasse as evidenced by a letter from a party to the mediator, whichever first occurs. If the parties are not successful in resolving the dispute through mediation, then the parties may pursue other legal remedies available to them.

§ 15.3.6 Should the Owner request, the Contractor agrees to participate as a party in any mediation proceeding between the Owner and the Architect or other Consultant for the Project in which construction deficiencies, contract breaches, or other alleged wrongful acts by the Contractor are alleged.

### § 15.4 ARBITRATION OR LITIGATION OF CLAIMS

§ 15.4.1 Not Used.

§ 15.4.1.1 Not Used.

§ 15.4.2 Not Used.

§ 15.4.3 Not Used.

§ 15.4.4 Should the Owner have a claim against the Contractor, the parties agree that the Owner, whether or not it elects to proceed with the meeting process or mediation described in Section 15.3, shall have the option of either prosecuting the claim against the Contractor in an appropriate court of general jurisdiction, or by arbitrating the claim by filing a demand for arbitration pursuant to the rules of a dispute resolution entity

agreed upon by the parties, except that if the parties cannot agree upon a dispute resolution entity, the rules of the American Arbitration Association shall apply.

§ 15.4.5 Should the Contractor have a claim against the Owner which has not been resolved by mediation or any other procedure set forth in this Contract, the Contractor's rights to assert its claim against the Owner shall be subject to the provisions of Connecticut General Statutes Section 4-61.

§ 15.4.6 Consolidation or Joinder

§ 15.4.6.1 Should either the Contractor institute an arbitration to the extent authorized by Section 4-61 of the Connecticut General Statutes or the Owner institute an arbitration as set forth herein, the Contractor agrees that any such arbitration may be consolidated, at the Owner's discretion, with any arbitration proceeding involving the Owner and the Architect or other Consultant for the Project in which construction or design deficiencies, breaches of contract, or any other alleged wrongful acts by the Contractor or Architect are alleged.

§ 15.4.6.2 Not Used.

§ 15.4.6.3 Not Used.

ARTICLE 16 OWNER POLICIES

§ 16.1 The Contractor shall, at no additional cost to the Owner, comply with all policies and procedures of the Owner. In the event the Owner establishes new policies or procedures following the execution of the Contract, or makes modifications to policies or procedures in existence at the time of Contract execution, the Contractor shall comply with such new or modified policies or procedures upon receipt of written notice of such new policies or procedures.

ARTICLE 17 SOVEREIGN IMMUNITY

§ 17.1 The parties acknowledge and agree that nothing in this Contract shall be construed as a waiver by the State of Connecticut or the Owner of any rights or defenses of sovereign immunity, which it may have had, now has, or will have with respect to all matters arising out of this Contract. To the extent that this provision conflicts with any other provision hereunder, this provision shall govern.

These General Conditions may be executed in counterparts, and each counterpart shall have the same force and effect as an original and, when taken together, shall constitute one and the same instrument and an effective binding agreement on the part of each of the undersigned. Execution of a facsimile or PDF copy shall have the same force and effect as execution of an original. Signed copies of this Agreement may be faxed and e-mailed with the same force and effect as if the originally executed General Conditions had been delivered.

Acknowledging agreement to these General Conditions as of \_\_\_\_\_, 20\_\_\_\_.

OWNER (Signature)

Scott A. Jordan  
Executive VP for Administration & CFO

Duly Authorized

(Printed name and title)

CONTRACTOR (Signature)

« Duly Authorized »« »

(Printed name and title)

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

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







# AIA Document G702™ – 1992

## Application and Certificate for Payment

<b>TO OWNER:</b>	<b>PROJECT:</b>	<b>APPLICATION NO:</b> 001	<b>Distribution to:</b>
		<b>PERIOD TO:</b>	OWNER: <input type="checkbox"/>
<b>FROM CONTRACTOR:</b>	<b>VIA ARCHITECT:</b>	<b>CONTRACT FOR:</b> General Construction	ARCHITECT: <input type="checkbox"/>
		<b>CONTRACT DATE:</b>	CONTRACTOR: <input type="checkbox"/>
		<b>PROJECT NOS:</b> / /	FIELD: <input type="checkbox"/>
			OTHER: <input type="checkbox"/>

### CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM .....	\$	0.00
2. Net change by Change Orders .....	\$	0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2) .....	\$	0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) .....	\$	0.00
<b>5. RETAINAGE:</b>		
a. 0 % of Completed Work (Column D + E on G703)	\$	0.00
b. 0 % of Stored Material (Column F on G703)	\$	0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703) .....	\$	0.00
6. TOTAL EARNED LESS RETAINAGE .....	\$	0.00
(Line 4 Less Line 5 Total)		
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT .....	\$	0.00
(Line 6 from prior Certificate)		
8. CURRENT PAYMENT DUE .....	\$	0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	\$	0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ 0.00	\$ 0.00
Total approved this Month	\$ 0.00	\$ 0.00
<b>TOTALS</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>
NET CHANGES by Change Order	\$	0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

**CONTRACTOR:**  
 By: \_\_\_\_\_ Date: \_\_\_\_\_  
 State of: \_\_\_\_\_  
 County of: \_\_\_\_\_  
 Subscribed and sworn to before  
 me this \_\_\_\_\_ day of \_\_\_\_\_

Notary Public:  
 My Commission expires: \_\_\_\_\_

### ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... \$ 0.00  
 (Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

**ARCHITECT:**  
 By: \_\_\_\_\_ Date: \_\_\_\_\_

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract



# AIA Document G703™ – 1992

## Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.  
 In tabulations below, amounts are stated to the nearest dollar.  
 Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 001

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G		H BALANCE TO FINISH (C - G)	I RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD		TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)		
1	GENERAL CONDITIONS								
2	BONDS								
3	TEMPORARY WALLS								
4	SELECTIVE DEMOLITION								
5	EQUIPMENT SUPPORTS								
6	ARCHITECTURAL WOODWORK								
7	CARPENTRY								
8	JOINT SEALERS								
9	ROOFING								
10	HOLLOW METAL DOORS & FRAMES								
11	AUTOMATIC DOOR								
12	AUTOMATIC OPERATOR								
13	FINISH HARDWARE								
14	GLASS & GLAZIN								
15	DRYWALL & METAL STUDS								
16	ACOUSTICAL CEILING								
17	FLOOR COVERING								
18	PAINTING								
19	ARCHITECTURAL ACCESSORIES								

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User Notes:

(3114856946)

20	RADIATION PROTECTION								
21	SPRINKLER								
22	PLUMBING & MED GAS								
23	DUCTWORK								
24	HVAC								
25	CONTROLS								
26	ELECTRICAL								
	<b>GRAND TOTAL</b>	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00 %	\$ 0.00	\$ 0.00





PLEASE COMPLETE ALL SECTIONS AND SIGN AT THE BOTTOM

The following information is being solicited for purposes of conducting pre-employment criminal and/or other background checks only and is not used in employment decisions unrelated to the results of the background check.

Name: \_\_\_\_\_  
Last First Middle (spell out)

Social Security Number: \_\_\_\_\_

Contact Phone: \_\_\_\_\_ Home Phone: \_\_\_\_\_

e-mail: \_\_\_\_\_

Marital Status:  Single  Married  Divorced

Maiden Name: \_\_\_\_\_ Aliases: \_\_\_\_\_

\_\_\_\_\_ Race \_\_\_\_\_ Eyes \_\_\_\_\_ Height Physically Disabled:  
 \_\_\_\_\_ Sex \_\_\_\_\_ Hair \_\_\_\_\_ Weight  Yes  No

Identifying Scars/marks/tattoos (type & location): \_\_\_\_\_

Home Address: \_\_\_\_\_  
Number Street City/Town State Zip

Date of Birth: \_\_\_\_\_  
MM/DD/YYYY

Place of Birth: \_\_\_\_\_  
City and State or Country

Citizenship: \_\_\_\_\_ Visa Status: \_\_\_\_\_

Drivers License  Yes  No

State: \_\_\_\_\_ License #: \_\_\_\_\_

List the states that you have lived in the last 7 years: \_\_\_\_\_

Are you related to, or an unmarried partner of, an employee at UConn Health?  YES  NO

If "YES" list below. Continue on the reverse side if necessary. Per UConn Health Policy #2002-51 a relative is a spouse, father, mother, sister, brother, child, the spouse of a child, or any relative who is domiciled in the employee's household.

Name	Relationship	Department

Have you ever been CONVICTED of an offense against criminal or military law, or are there criminal charges currently pending against you? Exclude minor traffic violations, or any offense settled in juvenile court or under a youth offender law.  YES  NO

If "YES" list all cases below, providing details as indicated. Continue on the reverse side if necessary. **Special Note:** Under the provisions of (C.G.S. § 46a-80 a person is not disqualified from state employment solely because of a prior conviction of a crime. The state can deny employment if a person is found unsuitable after considering (1) the nature of the crime, (2) information relating to the degree of rehabilitation, and (3) the time elapsed since the conviction. You are not required to disclose the existence of any arrest, criminal charge or conviction, the records of which have been erased pursuant to Connecticut General Statutes §46b-146, 54-76o, or 54-142a. If your criminal records have been erased pursuant to one of these statutes, you may swear under oath that you have never been arrested. Criminal records that may be erased are records pertaining to a finding of delinquency or that a child was a member of a family with service needs (C.G.S. § 46b-146), an adjudication as a youthful offender (C.G.S. § 54-76o), a criminal charge that has been dismissed or nolo, a criminal charge for which the person has been found not guilty or a conviction for which the person received an absolute pardon (C.G.S. § 54-142a).

Date	Place	Court Location	Offense(s)	Disposition

Have you ever been excluded, disbarred, restricted, disqualified, or sanctioned from any Federal or State programs or government organizations?  YES  NO If "YES" list all cases below, providing details as indicated. Continue on the reverse side if necessary. For the CMHC program, fingerprints taken by the Department of Correction will be submitted to the Connecticut State Police and the FBI for a criminal history check.

Date	Place	Agency	Funding	Current Status

Have there ever been any actions against your professional license(s)?  YES  NO  N/A

If "YES" list all cases below, providing details as indicated. Continue on the reverse side if necessary.

Date	Place	Agency	Funding	Current Status

Have you brought or will you be bringing (or having transported) to UConn Health ANY biological materials that are pathogenic in humans, animals or plants, including but not limited to viable organisms or genetic elements of pathogenic viruses, bacteria, biological toxins, fungi, rickettsia, mycoplasma or parasitic organisms?  YES  NO

If "YES", IMPORTANT NOTE: You must contact Research Safety 860/679-2723 or rwallace@uchc.edu before transporting any biological, chemical or radioactive materials to UConn Health. I certify that the information provided by me in the Background Information sheet is COMPLETE and TRUE to the best of my knowledge and is made in good faith. I understand that if I knowingly make any misstatement of facts or fail to provide required information I am subject to disqualification or dismissal and other penalties as they may be prescribed by law, policy, or regulation. This sheet is not complete without a wet signature. Digital signatures are not acceptable.

SIGNATURE: \_\_\_\_\_ DATE SIGNED: \_\_\_\_\_

OFFICIAL USE ONLY	PUBLIC SAFETY USE ONLY
<b>MUST BE COMPLETED BY HIRING DEPARTMENT</b>	<b>Result/Date</b>
submitted by: <input type="checkbox"/> Abromaitis D <input type="checkbox"/> Duggal J <input type="checkbox"/> Hobson M <input type="checkbox"/> Leone M <input type="checkbox"/> Logan N <input type="checkbox"/> Rucker P <input type="checkbox"/> Seklecki D <input type="checkbox"/> Smith J <input type="checkbox"/> Stockwell L <input type="checkbox"/> Other: _____	____ Cleared
return to: <input type="checkbox"/> Abromaitis D <input type="checkbox"/> Duggal J <input type="checkbox"/> Hobson M <input type="checkbox"/> Leone M <input type="checkbox"/> Logan N <input type="checkbox"/> Rucker P <input type="checkbox"/> Seklecki D <input type="checkbox"/> Smith J <input type="checkbox"/> Stockwell L <input type="checkbox"/> Other: _____	____ Rejected - failure to disclose ____/____/____
area: <input type="checkbox"/> CMHC <input type="checkbox"/> Clinical Operations <input type="checkbox"/> Clinical Faculty <input type="checkbox"/> Day Care <input type="checkbox"/> Dental Clinics <input type="checkbox"/> IT <input type="checkbox"/> Non-Clinical <input type="checkbox"/> Research	____ Rejected - criminal history ____/____/____
type: <input type="checkbox"/> Paid <input type="checkbox"/> Volunteer <input type="checkbox"/> Grad Assistant <input type="checkbox"/> Dental Resident/Non-Surgical <input type="checkbox"/> Unpaid <input type="checkbox"/> Student <input type="checkbox"/> Non-Affiliated Student/Intern <input type="checkbox"/> Contractor:	____ Administrative Review Pending ____/____/____
job title: _____	____ Administrative Review Complete ____/____/____

# 19-063 R1207 / 41 CONVERT TO ZEBRAFISH ROOM

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### **VOLUME-2**

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**SECTION 01015  
GENERAL PROJECT REQUIREMENTS**

**PART 1 - PROJECT DESCRIPTION**

1.01 GENERAL

- A. The Project consists of an interior renovation to two separated rooms to develop a research area (zebrafish) and pump room (life science). The project is located on the first floor of Uconn Health's, Cell and Genome Science Building (CGSB) at 400 Farmington Ave, Farmington, Connecticut, as required in these Specifications.
- B. The work shall consist of that identified on the Contract Documents to provide for interior construction and renovations to upgrade function and usability of the area.
- C. The work includes, but shall not be limited to the following:  
Demolition
- Removal of sections of masonry partitions
  - Removal of flooring materials
  - Concrete slab cutting, removal and trenching for new floor drain piping
  - Removal of light fixtures, switches and receptacles
  - Removal of HVAC diffusers and registers
  - Removal of up-right style sprinkler heads
- Renovation
- Construction of metal framed and gypsum finished partitions
  - Installation of new door and frame units
  - Installation of new flooring materials
  - Installation, backfill and compaction of piping trench.
  - Installation of slab on grade concrete floor patch
  - Installation of new suspended ceiling system, including the installation of new light fixtures, sprinkler heads, HVAC diffusers and registers
  - Installation of epoxy flooring and integral base with associated levers
  - Installation of plumbing piping and terminations for Owner Equipment connection
  - Installation of new floor drains and below grade piping
  - Modifications to HVAC ductwork
- D. The work includes, but is not limited to, all related demolition, removal and disposal of all associated materials as well as reconstruction of areas required to make the project complete.
- E. **SUBSTANTIAL COMPLETION:** The Contractor shall achieve Substantial Completion within **SIXTY (60)** calendar days from the date of Notice to Proceed.
- F. **WORK HOURS:** All work must be planned and executed in such manner so that surrounding continued activities are not impacted. The Contractor(s) shall perform all demolition related activities and work determined to be detrimental to continued daily activities (primarily in other lab spaces) during off hours as established herein.

Standard Work Hours: Monday through Friday 7:00 AM - 7:00 PM.

Off Work hours: Monday through Friday 7:00 PM - 7:00 AM and Weekends Friday 7:00 PM through Monday 7:00 AM.



Normal construction related activities determined not to be detrimental to continued daily activities, shall be performed during standard hours as established above.

Use of approved materials containing volatile organic compounds or odorous materials detrimental to continued daily activities shall be performed during off-hours, refer to paragraph 1.01-G below.

- G. **CONTRACTORS USE OF MATERIALS CONTAINING VOLATILE ORGANIC COMPOUNDS AND ODOROUS MATERIALS:** It is the intent of these specifications to control the amount and types of materials to be used which may effect the environment of patient and employee occupied areas of the University of Connecticut Health Center. The Contractor shall make every effort possible to use low VOC content products.

Material Safety Data Sheets (MSDSs) for all paints, coatings, mastics, degreasers, adhesives, etc. **MUST** be submitted to the UCHC Representative as part of the requirements of Section 01300 – SUBMITTALS, for review and acceptance prior to use. Acceptance will be based on quantity, location of use, potential patient care/employee impact, alternative commercially available products, etc. and must involve the Office of Research Safety, Epidemiology and the UCHC Representative. The Health Center reserves the right to cease the work of any primary or any secondary contractor should it be determined that an un-approved product is being used. Any cost incurred as a result of work stoppage or any remedial actions necessary as a direct result of its (un-approved product) use will be the sole responsibility of the contractor. Utilization of “approved” volatile or odorous compounds may require that UCHC mandate that the work/process be completed during un-occupied off hours times (nights, weekends or holidays) as indicated in paragraph 1.01-F above.

- H. The Contractor shall refer to and provide provisions for the conformance of Section-01020: CONSTRUCTION AREA ENVIRONMENTAL CONTROL for the protection of adjacent critical care patient areas.

The Contractor(s) shall erect construction barriers and maintain a clean work environment; provide negative air pressure within the construction area; protect occupied areas including control of the transportation of materials and debris; post construction work area cleaning procedures; daily procedures necessary to verify that controls and procedures are followed; training of contractor personnel; and, obtaining prior approvals needed for certain tasks (e.g., acceptance of barriers, negative pressure maintenance, removal of barriers, etc.).

Plans for precautionary measures for each area shall be reviewed and approved by the UCHC REPRESENTATIVE; the Department of Environmental Safety and the Department of Epidemiology prior to implementation. The first area reviewed and approved shall act as a model for the determination of minimum standards for other areas.

- I. **SCHEDULE:** The Contractor shall prepare and submit to the UCHC Representative, a construction schedule / timetable. Such schedule / timetable shall identify phases in which work shall be performed as well as all dates and times (standard / off hours) in which the work shall be performed.

In developing said schedule, the Contractor shall refer to statements on the drawings regarding sequence of the work.

The work shall not commence until such time that UCHC has reviewed and accepted in writing the schedule / timetable submitted by the Contractor.

1.02 AGENCY REPRESENTATIVE

- A. The Agency is the University of Connecticut Health Center. The Agency representative for construction, once the contract has been awarded, is Mr. Thomas Trutter, AIA, Associate Vice President of Campus Planning Design and Construction (860) 679-8723 or his assigned designee.

1.03 CONTRACT DOCUMENTS

- A. The Contract Documents for the Work are Documents prepared by The University of Connecticut Health Center, Department of Campus Planning, Design and Construction; **“R1207 / 41 CONVERT TO ZEBRAFISH ROOM”** dated MARCH 6, 2020.
- B. Refer to Specification Manual TABLE OF CONTENTS for a complete listing of specification sections and schedule of drawings. The Contractor shall notify the Agency Representative of items listed in the Table of Contents but omitted from the Bid Package.

1.04 INTENT OF DOCUMENTS

- A. The Specifications and Drawings are intended to describe and illustrate existing conditions in general.

**Before submitting a bid, the Contractor shall perform his own inspection and become thoroughly familiar with the existing conditions under which the work will be performed.**

**It is not the intent of the Contract Documents to show all existing conditions, and it shall be the responsibility of the Contractor to verify all existing conditions applicable to this project, and to include in his bid all requirements necessary for the completion of the work, based on the existing conditions.**

It is mutually agreed that work under each Section has included the cost of all required items for the accepted, satisfactory, functioning of the entire system without extra compensation.

The contractor will be held responsible for any assumptions, omissions or errors made as a result of failure to become familiar with the site and the contract documents.

- B. Following award of the contract, the Contractor shall submit product data and shop drawings for approval by the UCHC.

Fire-suppression: The Contractor shall be responsible for verification of all existing conditions. The information contained in these drawings (pipe size, splice locations as well as dimensions) shall be used for graphic intent only. The Contractor shall upon verification of the existing conditions, prepare and submit engineered shop drawings to FM Global for approval prior to performing any work. The Contractor shall submit copies of FM Global approved shop drawings, acceptance letter / approval letter and product literature to the UCHC Representative. The documents shall be submitted to:

FM Global  
Plan Review Department  
Attn: Linda Beaton (781) 440-8233  
1175 Boston-Providence Turnpike, P.O. Box 9102  
Norwood MA, 02062

- C. The Contractor shall further perform all work and supply all materials required to provide a complete installation meeting with the intent of the Contract Documents, in accordance with the actual site conditions.

1.05 CONTRACTOR USE OF PREMISES

- A. General: During the construction period, and except as noted otherwise, the Contractor shall have partial use of the site for construction operations. The Contractor's use of the site is limited only by the Owner's right to access and exit the property. Areas of access and exiting shall not be disrupted and or blocked from use.

The University Of Connecticut Health Center prohibits the use of cellular phones and/or radio frequency transmitters in all areas of the main complex building except as approved by the UCHC Representative.

Confine operations to areas within the contract limit lines. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

Areas for parking of contractor's personnel, material deliveries, and storage of materials will be limited to areas designated by the Agency representative.

- B. Partial Owner Occupancy: The Owner reserves the right to occupy selected areas, and/or place and install equipment in completed areas of the work prior to Substantial Completion provided that such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

A Certificate of Substantial Completion will be executed for each specific portion of the Work to be occupied prior to Owner occupancy.

#### 1.06 MAINTENANCE OF TRAFFIC

- A. The Contractor will be granted the use of paved roads and parking areas, but shall not infringe on the use of the same, or access thereto, for passage over the Agency's property.

Sidewalk, road and parking areas on the agency's property shall be kept free from scrap or other materials due to construction operations; and any damages to their surfaces caused by the Contractor shall be repaired by him at his own expense to the satisfaction of the Agency.

#### 1.07 FORMS AND IDENTIFICATION BADGES

- A. The contractor shall provide a list of all contact persons. Planning and Construction FORM 550.13A, "LIST OF SUBCONTRACTORS" is to be utilized as a standard format. The list shall include each trade, name of contractor, contact person(s), phone numbers, fax numbers, Federal Employer Identification Number (FEIN), social security number if FEIN is not available, and Connecticut Tax Registration number. Refer to Division-0 of this manual for List of Contractors, UCHC FORM 550.13A.
- B. IDENTIFICATION BADGES: Prior to the start of work all Contractor and Sub-Contractor personnel assigned to perform work at the University of Connecticut Health Center shall be required to fill out and submit a University of Connecticut Health Center, Department of Human Resources, Background Informational Sheet. All completed forms shall be submitted to the UCHC Representative for forwarding to the Universities Department of Public Safety. Information for background check includes the following:

Identity Verification  
Social Security Number Verification  
Criminal Background  
Additional checks as deemed warranted

Personnel cleared through the review process shall be notified to visit the Department of Public Safety Office to obtain their Identification Badge. Refer to Division-0 of this manual for UCHC Background Information Sheet.

**Effective July 1, 2008, the UCHC Public Safety Department shall institute a fee of \$75.00 for each background check completed.** The fee is payable in advance and shall accompany the submission of the Background Information Sheet

- C. **PERSONNEL WITH PRIOR APPROVED BACKGROUND INVESTIGATIONS:** Contractor and Sub-Contractor Personnel to be assigned to this project of which whom has had an Approved Background Investigation within the past year shall be exempt from the Background Check Fee stipulated above. Each Approved Background Investigation process must have reviewed all of the following areas;

Background investigations must be submitted for all states in which the applicant lived and for all names and aliases used.

The result of all background investigations must include the following:

- Federal Criminal Check
- State and County Checks (for both felony and misdemeanor crimes)
- Social Security Verification Check
- Nationwide Check (to include Sex Offender Registry Check, Office of Inspector General, U.S. Department of Health and Human Services Check)

The UConn Health Police Department will not accept background investigation reports that simply say that the investigation was conducted and the individual was cleared. The report must include the fact that each of the above listed checks was completed with the result of each of the checks listed separately. Each of the categories above should state either that no record was found or, if a record was found, the record must include the charge (crime), the date of the crime, the date of conviction, and disposition (felony or misdemeanor) and the sentence imposed.

UConn Health would **prefer** that the background investigations include all prior criminal history, but the investigations **must** encompass at least the past seven year period.

#### 1.08 CONSTRUCTION EQUIPMENT

- A. The Contractor shall furnish and maintain, at his own cost and risk, all tools, equipment, apparatus and appliances, and power for same, runways, ladders, temporary supports, and bracing, and all other similar work or material necessary to insure speed, convenience, and safety in the execution of this work.

All such items shall be subject to approval by the Agency as to general stability, type, and location; but responsibility for proper design, strength and safety shall remain the responsibility of the Contractor. All such items shall comply with OSHA regulations and all other applicable local, state, and federal codes, statutes, rules and regulations.

#### 1.09 TEMPORARY FACILITIES

Materials and facilities that constitute temporary facilities are property of the Contractor.

- A. Temporary utilities as deemed necessary for the completion of the work for which it is located include but are not limited to:

- Electric power.
- Telephone service.

Water.

Refer to paragraph 1.09 F

- B. Temporary construction and support facilities as deemed necessary for the completion of the work for which it is located include but are not limited to:

Sanitary facilities, including drinking water.  
Waste Disposal services.

Refer to paragraph 1.09 F

- C. Security and protection facilities required include but are not limited to:

Fire Protection, Barricades, warning signs, lights,  
Environmental protection.

- D. The University Of Connecticut Health Center prohibits the use of cellular phones and/or radio frequency transmitters in all areas of the main complex building except as approved by the UCHC Representative.

- E. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:

Building Code requirements.  
Health and safety regulations.  
Utility company regulations.  
Police, Fire Department and UCHC Rescue Squad rules.  
Environmental protection regulations.  
NFPA 241.

- F. Conditions of Use: The Contractor will be allowed to use the following UCHC utilities and facilities:

Electric power: The Contractor will be allowed to tie into the existing facility for power use, limited to the construction of the work. Coordinate power tie-in with the Agency's representative.

Telephone: The Contractor will be allowed to use existing pay telephone facilities at the facility for construction purposes only. The use of telephone facilities is deemed a privilege, not a right. Such use may be discontinued if, in the UCHC's opinion, the Contractor is found to be abusive of said privilege.

Water: The Contractor will be allowed to take water for construction purposes from existing services within the building. Upon completion of the work, the Contractor shall remove any piping, metering and other materials installed for temporary connections and close all connections. The Contractor shall be responsible for the daily maintenance and shutoff of this temporary water service. Coordinate water tie-in with the Agency's representative.

Sanitary Facilities: The Contractor will be allowed to use the toilet facilities available at the UCHC.

- G. Equipment Requirements: Provide new equipment; if acceptable to the UCHC, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

- H. First Aid Supplies: Comply with governing regulations.
- I. Collection and Disposal of Waste: Collect and remove waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
- J. Fire Protection: The Contractor shall, during the progress of the work, assume all responsibility for loss or damage by fire to the work included in his contract until completion of the work. No flammable materials shall be stored in the structures in excess of amounts allowed by authorities having jurisdiction. No gasoline shall be stored in or near the work at any time, and none shall be left on site outside of working hours.
- K. Barricades and Warning Signs: Provide barricades and Warning Signs for the duration of the construction activity. UCHC approved warning Signs shall be located in public areas outside of the work area. Barricades shall be located to impede pedestrian traffic from accessing the work area. Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against.
- L. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- M. Environmental Protection: Provide 1HR fire rated dust barriers and approved track mats at all work area access points for the duration of the demolition and construction activity. Track mats shall be cleaned and/or replaced as required to maintain their effectiveness.  
  
Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.
- N. Protection: the Contractor shall provide and maintain items required for the protection of existing building structure and finishes such as:  
  
Floor Materials  
Wall surfaces  
Door openings and thresholds  
  
Damage incurred shall be rectified by the Contractor at no expense to UCHC.
- O. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- P. Termination and Removal: Unless the UCHC requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

1.10 APPLICATIONS FOR PAYMENT

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule, List of Subcontracts, and Submittal Schedule.

- B. Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

Contractor's construction schedule.  
Application for Payment form.  
Schedule of submittals.

Submit the Schedule of Values to the UCHC prior to the start of any on site construction activity, but in no case no later than 7 days before the date scheduled for submittal of the initial Application for Payment.

Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

Generic name.

Dollar value.

Percentage of Contract Sum to the nearest percent, adjusted to total 100 percent.

Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.

Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.

For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

Each Application for Payment shall be consistent with previous applications and payments as certified by the UCHC.

The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

- C. Payment Application Times: Each progress payment date is as indicated in the Agreement. The period of construction Work covered by each Application or Payment is the period indicated in the Agreement.

- D. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for Application for Payment.

- E. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.

Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.

Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

- F. Retainage: Until substantial Completion, and Owner's acceptance of the work, the owner shall withhold 10% of the amount due to the Contractor on each progress payment application.
- G. Transmittal: Submit 3 executed copies of each Application for Payment to the UCHC by means ensuring receipt within 24 hours; one copy shall be complete, including waivers of lien and similar attachments, when required.

Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the UCHC.

- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:

Schedule of Values.

- I. Application for Payment at Substantial Completion: Prior to the issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect any Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

Administrative actions and submittals that shall proceed or coincide with this application include:

Warranties (guarantees) and maintenance agreements.  
Maintenance instructions.  
Final cleaning.  
Application for reduction of retainage, and consent of surety.  
List of incomplete Work, recognized as exceptions to UCHC's Certificate of Substantial Completion.

- J. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:

Completion of Project close-out requirements.  
Completion of items specified for completion after Substantial Completion.  
Assurance that unsettled claims will be settled.  
General Contractor / Sub-Contractor / Material Supplier, Affidavit of Waiver of Liens.  
Removal of surplus materials, rubbish and similar elements.

#### 1.11 PROJECT COORDINATION

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:

Coordination.  
Administrative and supervisory personnel.  
General installation provisions.

- B. Coordination: Coordinate construction activities included under various portions of this work to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different portions of the work that are dependent upon each other for proper installation, connection, and operation.



Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.

- C. Administrative Personnel: The Contractor shall provide his own construction supervisor. Acceptance of the project, however, shall be by the Agency. The Agency and its representative(s) shall be the sole judge(s) as to compliance and conformance with plans, specifications and design intent. Agency acceptance shall not relieve the Contractor of responsibility for errors or deviation from the contract documents or approved drawings.
- D. General Installation Provisions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the UCHC for final decision.

During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

- Excessive static or dynamic loading.
- Water or ice.
- Soiling, staining and corrosion.
- Combustion.
- Destructive testing.
- Misalignment.
- Unprotected storage.
- Improper shipping or handling.
- Theft and Vandalism.

#### 1.12 CODES AND SPECIFICATIONS

- A. All references to Standard Specifications and codes made throughout the specifications refer to the latest editions in effect at the time of the proposal. Such references include current addenda and errata, if any, and shall be considered an integral part of the work.
- B. Codes: The Codes and Standards listed below apply to all new construction. Wherever Codes and/or Standards are mentioned in these specifications or drawings, the latest applicable edition or revision shall be followed, including but not limited to:

Connecticut State Building Code  
International Building Code

Health and safety regulations  
International Plumbing Code

International Mechanical Code  
National Electric Code  
UCHC Public Safety Regulations  
Environmental Protection Agency

Utility company regulations  
NFPA, ANSI, OSHA  
ASHRAE, SMACNA

- C. All materials furnished and all work installed shall comply with the requirements of the local utility companies and all Governmental departments having jurisdiction.
- D. The Contractor shall include in the work, without extra cost to the Owner, any labor, materials, services, apparatus and drawings in order to comply with all applicable laws, ordinances, rules and regulations.

1.13 SITE IMPROVEMENTS AND EXTERIOR BUILDING WORK

- A. General: Unless specifically identified to be removed, protect all existing landscape and site improvements. All removed or damaged landscaping or improvements shall be restored to their original condition at no additional expense to the UCHC.
- B. All site improvement and exterior building work must be conducted in compliance with Town of Farmington, Ordinance No. 61, chapter 135, as related to noise emissions.

1.14 TAX EXEMPTION

- A. This project is tax exempt. The Owner, upon request, will provide the successful bidder with appropriate information and documentation.

END OF SECTION

**SECTION 01018**  
**SPECIAL PROJECT PROCEDURES**

**PART 1 - REQUIREMENTS**

1.01 GENERAL

A. Section includes:

Construction Sequence.  
Owner's Right to Contract and Schedule Work within the Project Area.  
Relocation of Owner's Furniture and Equipment.  
Special Working Conditions.  
Contractor Use of Premises.  
Owner Occupancy.  
Protection of Installed Work.  
Salvage.  
Discovery of Hazardous Material.  
Volatile Environmental Considerations.  
Project Meetings.  
Fire Suppression Work Parameters

1.02 Construction Sequence:

- A. Work Hours and paragraph 1.01 (I) Schedule. Elements of building, construction and renovation work shall be done so that work will be continuous and conform to the agreed scheduling. Trades scheduled for sequential work shall immediately begin work when work of the proceeding trade allows. The Owner shall be notified in advance when systems to be worked on are to be shut down and when they will be ready for testing. Testing by the Owner's agent may require an exception to the above requirement for continuous work.
- B. Minimum disruption of operation and use of adjacent facilities and access to those facilities is required. Cooperation with Owner to minimize inconvenience is essential.

1.03. Owner's Right to Contract and Schedule Work within the Project Area: Not Used

1.04 Relocation of Owner's Furniture and Equipment:

- A. The Contractor shall be responsible for moving existing items to be reused in new construction.
- B. Disconnect, detach, and disassemble as required to move to new location.
- C. Protect from damage during handling and transit.
- D. Reassemble and install in new location, make ready for use, and test in presence of Owner's Representative.

1.05 Special Working Conditions:

- A. Access to other building areas by construction personnel shall be limited to emergency needs only.
- B. For access to specific areas, department, or any environmental service, the following procedures shall be followed:

72-hour notice shall be given during normal working hours, Monday through Friday.

Contact Person: Contractor will receive from the Owner the name of a contact person or persons for normal hours and after hours, weekends, and holidays.

Information Required: Type of work (plumbing, heating, etc.), estimated time needed, number of workers involved, types of equipment to be in use, and noise level anticipated.

- C. Contractor shall provide Owner with name and telephone number of contact person to be available at all times.
- D. Noise and vibration: Construction operations causing noise or vibration detrimental to continued daily use of surrounding areas shall be scheduled for off hours as determined by the Owner. Refer to Section 01015-GENERAL PROJECT REQUIREMENTS for work hours schedule.
- E. Penetrations of existing concrete or masonry walls or floors shall be done by core drilling or sawing. No hammers or jack hammers shall be used. Contractor shall schedule this work for times approved by the Owner and shall employ such methods that may be required to limit the airborne and structure-borne noise to levels acceptable to the Owner. Where it is determined that material can only be removed effectively with jackhammers, this work shall be scheduled in consultation with the Owner. When ever jackhammers must be used, they shall be equipped with sound attenuating mufflers.
- F. All torch work, internal combustion power equipment, etc. shall be kept to a minimum and shall be scheduled and coordinated with the UCHC Agent and the UCHC Fire Marshal.

1.06 Contractor Use of Premises:

- A. Limit use of premises for work and for construction operations to allow for Owner occupancy and public access.
- B. The Contractor may use on-site paved roads and parking areas as designated by the Owner, but shall not encumber same or their access. Roads shall not be blocked by standing trucks, parked cars, material storage, construction operations, or in any other manner.

Public roads and existing paved roads, drives, and parking areas on Owner's property shall be kept free from scrap or debris due to construction operations, and any damage to their surface caused by the Contractor shall be repaired by him at his own expense.

- C. Coordinate use of premises under direction of Owner.
- D. Routes to and from the areas of work for Contractor's personnel and for removal of equipment and material shall be strictly restricted to those designated by the Owner.
- E. Scheduled times for delivery of material shall be as designated by the Owner. No deliveries shall be made at other times.
- F. Delivery routes to and within the hospital shall be as designated by the Owner. No other routes shall be used.

1.07 Owner Occupancy:

- A. During the life of this Contract, the Owner will continue to occupy and operate grounds and walkways everywhere on the Owner's property and all existing buildings. The work of this Contract shall be done, and such temporary facilities and phasing of activities provided, so as not to interfere with access to existing facilities or new work areas, so as to cause the least possible interference with activities of the Owner, and to protect people and property from harm.

- B. The Contractor shall obtain approval from the Owner before starting work in any area and shall not begin work in any area until preparatory work by the Owner has been accomplished and all environmental control measures are in-place and accepted by the owner

1.08 Protection of Installed Work:

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- B. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings. Protect finished floors from traffic, movement of heavy objects, and storage.
- C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.09 Salvage:

- A. Owner shall have the right to salvage existing building elements. Before beginning demolition or removal work in any area, the Owner shall be notified and given the opportunity to designate items for salvage.
- B. Items designated to be saved shall be protected from damage and turned over to the Owner.

1.10. DISCOVERY OF HAZARDOUS MATERIAL

- A. Existing Hazardous Materials as identified by the Department of Environmental Protection Agency may exist with-in the project area. It shall be the responsibility of the UCHC Agent to schedule to have all such material removed by an approved method from a hazardous waste removal specialist.
- B. The Contractor shall be required to inform the UCHC Agent for materials uncovered during the course of construction (not previously identified or removed) believed to be hazardous. The UCHC Agent shall take necessary steps to have this material tested and if required removed by an approved method from a hazardous waste materials removal specialist. Once discovered the Contractor shall not remove or disturb any of this material until direction has been received from the UCHC Agent.

Section 16010-General Conditions for Electrical Trades

- C. To conform to mandated requirements of the Department of Environmental Protection, **ALL** removed plumbing waste traps and trap fluid **MUST** be inspected for mercury. The Contractor shall cut out trap sections of piping and place trap sections including waste fluids into a bucket. The UCHC Agent shall notify the UCHC Office of Environmental Health and Safety that material is ready for inspection. Only those sections of piping and fluids reviewed and approved by the UCHC Office of Environmental Health and Safety may be disposed of as construction debris.
- D. The Contractor shall be prohibited from disposing regulated waste as part on normal building demolition waste stream. Regulated waste is; lead waste material created as result of removal of partitioning, doors and glass panels containing lead as well as fluorescent bulbs, thermostats, and or any electrical or electronic equipment such as transformers, computer monitors, speed drives, control panels, etc that contain oil or circuit boards. Such material shall be removed carefully and individually segregated for proper disposal.

When disposing of such items, the Contractor shall contract with an authorized recycling firm to remove regulated waste from the UCHC campus, and shall deliver such waste in a packaged form acceptable to the waste contractor(s). An authorized recycling firm means licensed for such work by a State or Federal Agency and approved by the UCHC Office of Research Safety. The Contractor shall present a bill of lading and or a manifest of materials for disposal to the UCHC Agent for signature of the UCHC Office of Research Safety. The UCHC Office of Research Safety shall keep and maintain records of such disposed materials. No waste may leave the site without Office of Research Safety approval (x2723).

1.11 VOLATILE ENVIRONMENTAL CONSIDERATIONS

- A. Material Safety Data Sheets for all paints, coatings, mastics / volatile materials etc. shall be submitted to the UCHC Agent as part of the requirements of SECTION 01300 - SUBMITTALS, for review by the UCHC Environmental Safety Officer in advance of use. Toxicity and odor will be a factor in selection of such materials and only those materials approved shall be used.

1.12 PROJECT MEETINGS

- A. It is the intent of this project to hold weekly project coordination meetings. The Contractor shall develop and distribute the minutes of such meetings to the Project Team as well as to other parties as directed by the Owner.

1.13 FIRE SUPPRESSION AND FIRE NOTIFICATION WORK PARAMETERS

- A. The Contractor shall file a FM Global Red tag Permit to report all closures and all impairments to the buildings or areas fire protection system including but not limited to; closures of sprinkler control valves, impairments to fire pumps and other fire protection systems. Access the application web page at: <http://www.fmglobal.com/redetag>
- B. Sprinkler systems and or fire alarm systems may be impaired, either in whole or in part, but no more than necessary for the required work and only for work on the sprinkler system. This may be for no more than one period of time and for no longer than (4) hours in any day.
- C. In accordance with the Connecticut Fire Code, should the sprinkler system and or the fire alarm system be impaired for a period of time longer than that indicated, the Contractor shall arrange through the UCHC Agent a fire watch with the UCHC Fire Deputy. Expense for the fire watch shall be the responsibility of the Contractor
- D. The fire alarm system must remain fully functional during the period of any sprinkler system impairment except for any devices or that must also be impaired in order for the work to proceed.
- E. Hot work is prohibited in the area of the building where the system is impaired.

END OF SECTION 01018

**SECTION 01020  
CONSTRUCTION AREA ENVIRONMENTAL CONTROL  
CLASS II**

**PART 1 - GENERAL**

1.01 SUMMARY

- A. The Contractor will be required to work in areas occupied by or adjacent to areas occupied by employees of Uconn Health. All work must be planned and executed in a manner such that the continued Health Center operations is not compromised and shall follow procedures set-forth herein to ensure that the environment for occupied areas is fully maintained.
- B. The Contractor(s) shall, be required to follow the guidelines below throughout the constructed period. These guidelines address:
  - The erection of construction barriers
  - Entrances and exits to work area
  - Maintaining a clean work environment
  - Providing negative air pressure within the construction area
  - Post construction procedures
  - Protection of occupied areas including controls on the transportation of materials and debris
  - Training of contractor personnel
  - Compliance
- C. All precautionary measures shall be reviewed and accepted by the UCHC Agent(s) prior to the start of any work.
- D. Material Safety Data Sheets on materials used will be provided in hard copy to the UCHC Agent in advance of brining the materials into the UCHC.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. The Contractor shall coordinate the specific requirements of the following specification sections:
  - Section 01015 - GENERAL PROJECT REQUIREMENTS
  - Section 01018 - SPECIAL PROJECT PROCEDURES

**PART 2 -REQUIREMENTS**

2.01 CONSTRUCTION AND ENVIRONMENTAL CONTROL BARRIERS

- A. Construction and Environmental Control Barriers shall be erected to effectively seal off the construction area for all work phases from that of the areas remaining to be occupied by the owner. Locations of such barriers shall be as indicated on the project documents.

For work occurring outside of the project area, the Contractor shall erect environmental barriers as required to maintain the environment of the adjacent spaces. Prior to the start of the work, the Contractor shall prepare an implementation plan which addresses the items stipulated in the project documents. No work shall commence until the UCHC Agent accepts said plan.

- B. Project site must be completely contained by impervious barriers constructed and located in accordance with UCH Fire Department requirements.
- C. Not Used.
- D. Construction and Environmental barriers used to encapsulate and control air borne contaminants shall be constructed of metal studs sheathed with fire-rated polyethylene.

Seams in Environmental Barriers shall be sealed with duct tape.

Openings used for construction area access shall be provided with 7ft height heavy duty zipper cut into and applied to the sheet polyethylene barrier.

- E. Determination of type of barrier used will be based on type, location and length of anticipated project activity.
- F. All penetrations that would allow air circulation to a non-construction area shall be sealed.
- G. Impervious barriers will extend from the floor, beyond the false ceiling, to the underside of the floor above. Where plaster ceilings exist the barrier may terminate tight to the underside of the finished surface.
- H. Existing doors not used for entrances shall be sealed tight with duct tape applied over the frames and doors.

2.02 ENTRANCES AND EXITS TO THE WORK AREA:

- A. Entrances and Exits to and from the work site for workman and the delivery of materials shall be limited to shown on the drawings.
- B. Entrances and exits to work site shall be pre-determined before start of project and shall be constructed of gasketed doors with self closing latching hardware as approved by the UCHC Agent.

2.03 MAINTAINING A CLEAN WORK ENVIRONMENT

- A. Tack mats shall be placed outside the construction area door. Tack mats shall be changed as necessary to maintain clean environment.
- B. Dust tracked outside the barrier must be immediately cleaned, either by use of a HEPA-filtered vacuum and/or damp mopping

2.04 NEGATIVE AIR PRESSURE

- A. After construction of the barriers and entrance to the work and approval by the UCHC, the contractor will disconnect and/or cap supply air flow to construction area as directed by the UCHC Agent. As appropriate, disconnect system at location where new supply ductwork will begin.
- B. As appropriate, disconnect exhaust air flow ductwork to construction area at location where new exhaust ductwork will begin. Cap all exhaust air ducts except those (normally one) that will be used for exhaust air during construction. All exhaust ducts used during construction shall be filtered through a contractor installed 80 % filter. Dirty air shall not be allowed to enter the exhaust system.
- C. Not Used.
- D. Construction shall not begin until the above actions have been completed and the UCHC Agent authorizes the start of the work.

2.05 POST CONSTRUCTION PROCEDURES



- A. When construction is completed the entire construction area shall be completely cleaned before the final supply ducts and exhausts duct are connected. This cleaning will be of all surfaces (new, existing, barriers, ceilings, walls, etc) and will be done by wet wiping and/or HEPA vacuuming until no visible dust exists (based on a survey by the UCHC Agent). At such time, an approval will be given by the UCHC Agent and then the Construction Barriers and then the HEPA filtering system can be removed.
- B. Remove barrier material carefully to minimize spreading of dirt, debris, and dust.
- C. Vacuum work area with HEPA filtered vacuums.
- D. Wet mop area with disinfectant.
- E. Remove isolation of HVAC system in areas where work is being performed.

#### 2.06 PROTECTION OF OCCUPIED AREAS AND TRANSPORT OF MATERIALS

- A. Not used.
- B. Dumping of debris will only be at the location(s) authorized by the UCHC Agent.
- C. Removal of daily construction debris and staging of the area with new construction materials shall be by a predetermined and pre-approved route and shall be performed during off hours only.
- D. Transporting the debris from work site shall be done in clean and tightly covered carts to prevent airborne dust release, spills, etc.
- E. Fine debris likely to become easily airborne (e.g. floor sweepings ,dust from vacuum, etc) shall be placed in a suitable plastic bag which is then twisted and closed prior to placement in the transport cart.
- F. The shoes and clothing of workers and materials (e.g., carts) leaving the work area will be cleaned (e.g., HEPA vacuum), as necessary, so that dust release outside the area is prevented. Wipe hard surfaces down with damp cloth.
- G. The contractor shall carefully consider at the start of the project the need to protect by individual barriers items remaining in the work area in order to minimize the amount and time needed for cleaning such objects prior to seeking authorization from the UCHC Agent to remove barriers.

#### 2.07 TRAINING

- A. Key supervisory personnel of the contractor and subcontractors will be trained on the importance of contamination control and the critical nature of the area(s) they will be working in by UCHC personnel prior to the start of work.
- B. These supervisory personnel will be responsible for training other site personnel on these matters and helping to enforce procedures.
- C. The Department of Epidemiology and Environmental Health and Safety Office will provide training assistance and/or training materials.

#### 2.08 COMPLIANCE

- A. The contractor shall ensure adherence to all policies and procedures for dust and debris prevention and containment throughout the construction period.

END OF SECTION

## SECTION 01030 ALTERNATES

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for Alternates.
- B. Definition: An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in Contract Documents.
- C. Coordination: Coordinate related Work and modify or adjust adjacent Work as necessary to ensure that Work affected by each accepted Alternate is complete and fully integrated into the project.
- D. Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates.
- E. Alternate Schedule / Line Item Cost(s): The line item cost (Add or Deduct from the Base Bid) for each scheduled Alternate shall be indicated on the Bid Form

The Alternate shall include all materials, installation, and workmanship in strict accordance with the Drawings and Specifications.

Include as part of each Alternate, shall be miscellaneous devices, accessory objects and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

ALTERNATES FOR THIS PROJECT SHALL INCLUDE:

**Alternate No. 1: As indicated on Drawing SP-1, provide alternate pricing for the installation of access control system to entrance door to R1207.**

### **PART 2 - PRODUCTS**

**Not Applicable.**

### **PART 3 - EXECUTION**

**Not Applicable.**

END OF SECTION

## **SECTION 01045 CUTTING AND PATCHING**

### **PART 1 - GENERAL**

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. Requirements of this Section apply to mechanical and electrical installations. Refer to Division-15 and Division-16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

#### 1.03 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.
- B. Obtain specific Architect approval before cutting and patching the following structural elements:
  - Foundation / Slab construction.
  - Structural steel.
  - Lintels.
  - Miscellaneous structural metals.
- C. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

### **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

- A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

### **PART 3 - EXECUTION**

3.01 INSPECTION

- A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- B. Before proceeding, meet at the site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.03 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.

In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.

- 4. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

Where feasible, inspect and test patched areas to demonstrate integrity of the installation. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.

Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance. Cut, patch, point-up and repair plaster to accommodate other construction and to restore cracks, dents and imperfections.

#### 3.04 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 01045

## SECTION 01300 SUBMITTALS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including;

Contractor's construction schedule; shall be submitted prior to the start of the work.

Submittal schedule.

Shop Drawings.

Product Data.

Samples.

Warranties.

Operations Manuals.

- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

Applications for payment.

Performance and payment bonds; shall be submitted prior to the start of the work.

Certificates of insurance and insurance policies; shall be submitted prior to the start of the work.

List of Subcontractors; shall be submitted prior to the start of the work.

- C. The Schedule of Values submittal is included in Section 01015 GENERAL PROJECT REQUIREMENTS "Applications for Payment."

- D. Inspection and test reports are included in Section "Quality Control Services."

#### 1.03 SUBMITTAL PROCEDURES

- A. General: The Contractor shall prepare and submit material submittals conforming to the contract documents.

Each item submitted shall bear the Contractor's certification (stamp) that the information submitted is in **conformance** with the Contract Documents. Submittals received without such stamp shall be returned without action.

- B. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to UCHC using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.

Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.

The UCHC reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- D. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The UCHC will promptly advise the Contractor when a submittal being processed must be delayed for coordination.

If an intermediate submittal is necessary, process the same as the initial submittal.

Allow two weeks for reprocessing each submittal.

No extension of Contract Time will be authorized because of failure to transmit submittals to the UCHC sufficiently in advance of the Work to permit processing.

- C. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.

Submittals which have not properly been recorded as reviewed and marked as approved by the Contractor will not be processed.

Include the following information on the label for processing and recording action taken.

UCHC Project name and number.

Date.

Name and address of Contractor.

Name and address of subcontractor.

Name and address of supplier.

Name of manufacturer.

Number and title of appropriate Specification Section.

Drawing number and detail references, as appropriate.

#### 1.04 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 30 days of the contract award.

Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".

Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.

Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.

Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.

Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the UCHC's procedures necessary for certification of Substantial Completion.

- B. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.
- C. Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating "precalculated" and "actual" costs. On the line show dollar-volume of Work performed as of the dates used for preparation of payment requests.

Refer to Section "Applications for Payment" for cost reporting and payment procedures.

- D. Distribution: Following response to the initial submittal, print and distribute copies to the UCHC, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.

When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

- E. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

#### 1.05 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.

- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:

Dimensions.

Identification of products and materials included.

Compliance with specified standards.

Notation of coordination requirements.

Notation of dimensions established by field measurement.

- C. Initial Submittal: Submit one correctable translucent reproducible print and three blue- or black-line prints for the UCHC's review; the reproducible print will be returned.



- D. Final Submittal: Submit 3 blue- or black-line prints; submit 5 prints where required for maintenance manuals. 2 prints will be retained; the remainder will be returned.

Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

- E. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.

Preparation of coordination Drawings is specified in section "Project Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.

Submit coordination Drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

#### 1.06 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

Manufacturer's printed recommendations.  
Compliance with recognized trade association standards.  
Compliance with recognized testing agency standards.  
Application of testing agency labels and seals.  
Notation of dimensions verified by field measurement.  
Notation of coordination requirements.

Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

- B. Submittals: Submit 4 copies of each required submittal. The UCHC will retain one, and will return the other marked with action taken and corrections or modifications required.

Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

- C. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.

Do not permit use of unmarked copies of Product Data in connection with construction.

#### 1.07 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the UCHC's Sample. Include the following:

Generic description of the Sample.

Sample source.

Product name or name of manufacturer.

Compliance with recognized standards.

Availability and delivery time.

Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.

Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.

- B. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.

Preliminary submittals will be reviewed and returned with the UCHC's mark indicating selection and other action.

- C. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.

Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.

Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

Sample sets may be used to obtain final acceptance of the construction associated with each set.

- C. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

Field Samples specified in individual Sections are special types of Samples. Field Samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the Work will be judged.

Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

#### 1.08 UCHC'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the UCHC will review each submittal, mark to indicate action taken, and return promptly.

Compliance with specified characteristics is the Contractor's responsibility

- B. Action Stamp: The UCHC will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:

Final Unrestricted Release: Where submittals are marked "No Exceptions Taken," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

Final-But-Restricted Release: When submittals are marked "Make Corrections Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

Returned for Resubmittal: When submittal is marked "Amend and Resubmit," or "Rejected," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

Do not permit submittals marked "Amend and Resubmit," or "Rejected" to be used at the Project site, or elsewhere where Work is in progress.

Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".

#### 1.09 ELECTRONIC SUBMITTALS

- A. Submitting electronic product data, literature, schedules, shop drawings, etc shall be permitted. The documented and submitted information shall be as stipulated above. Submittal Documents lacking the required information shall be returned without action. The submission of Electronic Submittals shall additionally conform to the following conditions;
1. The Contractor shall be provided with a UCHC Standard Electronic Submittal Transmittal Form. The Contractor shall be required to use, provide requested project information, digitally sign, and submit this form with each submittal document submitted. Documents containing varying information shall not be combined in one submittal.
  2. Hard copies of electronic submittals shall be made and distributed to field personnel for construction, coordination and reference information. Such documents shall be field and stored with the project documents for field reference.
  3. Project's utilizing the Electronic Submittal process shall at the end of the project as part of Section 01700-Project Close-out, prepare an electronic CD File of all approved submittal documents and inserted as part of each Operating and Maintenance Manual.

#### **PART 2 - SCHEDULE**

- A. Submittal Schedule: The Contractor shall prepare and submit shop drawings and product literature as required by the contract documents, which typically include the items indicated below. U.C.H.C. reserves the right to require additional submittals as the project progresses.

The submittals shall include but not be limited to:

- Floor finishes
- Ceiling finishes and suspension systems
- Doors, Frames and Hardware
- Access Doors
- Metal studs

Gypsum board and accessories  
Paint products and samples  
HVAC Diffusers and Registers  
Electrical fixtures, devices and accessories  
Plumbing fixtures, piping and accessories  
Material Safety Data Sheets for all environmentally volatile materials

**PART 3 - EXECUTION**

(Not Applicable).

END OF SECTION 01300

## **SECTION 01700 PROJECT CLOSEOUT**

### **PART 1 - GENERAL**

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:

- Substantial Completion
  - Inspection procedures
  - Operating and maintenance manual submittal
  - Final cleaning
  - Final Acceptance
  - Project record document submittal

- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

#### 1.03 SUBSTANTIAL COMPLETION

- A. General: In addition to the requirements indicated below, the Contractor shall prepare and complete the requirements of paragraphs 1.04 – INSPECTION PROCEDURES, 1.05 – OPERATING AND MAINTENANCE MANUAL SUBMITTAL and 1.06 – FINAL CLEANING prior to Owner acceptance of substantial completion.
- B. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
- C. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
- D. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
- E. Advise UCHC of pending insurance change-over requirements.
- F. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
- G. Obtain and submit releases enabling the UCHC unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
- H. Deliver tools, spare parts, extra stock, and similar items.

- I. Complete start-up testing of systems, and instruction of the UCHC's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
- J. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

1.04 INSPECTION PROCEDURES

- A. On receipt of a request for inspection, the UCHC will either proceed with inspection or advise the Contractor of unfilled requirements. The UCHC will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
- B. The UCHC will repeat inspection when requested and assured that the Work has been substantially completed.
- C. Results of the completed inspection will form the basis of requirements for final acceptance.

1.05. OPERATING AND MAINTENANCE MANUAL SUBMITTAL:

- A. Thirty-days prior to claim for completion submit 3 copies of the Operating & Maintenance Manual. Bind properly indexed data in individual heavy-duty 1" to 3" diameter 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Each binder shall contain mylar tabbed separators by subject matter (lighting, panelboards, etc.). Each binder shall be less than 60% full (1" binder shall have no more than 0.6" of filling).

The manual shall contain the following:

- Table of Contents
- Operating instructions
- Maintenance instructions
- Manufacturers catalog sheets
- List of materials used on project
- Service call list
- Installation instructions packaged with equipment
- Parts list for items replaced under regular maintenance
- Guarantees and warranties for each piece of equipment with the purchase order number, effective dates and the contact name and phone number.
- Emergency instructions.
- Spare parts list.
- Copies of warranties.
- Wiring diagrams (8-1/2" x 11" and 11" x 17").
- Copy of panelboard indexes
- Recommended "turn around" cycles.
- Inspection procedures.
- Shop Drawings and Product Data.
- Insert CD File(s) of all Electronic Submittals.
- Fixture lamping schedule.

Sufficient information shall be given to enable quick and easy cross-referencing between the manual and record drawings.

- B. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the UCHC's personnel to provide instruction in proper operation and

maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

- Maintenance manuals.
- Spare parts and materials.
- Tools.
- Lubricants.
- Fuels.
- Identification systems.
- Control sequences.
- Hazards.
- Cleaning.
- Warranties and bonds.
- Maintenance agreements and similar continuing commitments.

C. As part of instruction for operating equipment, demonstrate the following procedures:

- Start-up.
- Shutdown.
- Emergency operations.
- Noise and vibration adjustments.
- Safety procedures.
- Economy and efficiency adjustments.
- Effective energy utilization.

#### 1.06 FINAL CLEANING

A. General: Provide general and final cleaning in accordance with Section - 01715-Project Cleaning.

#### 1.07 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

Submit an updated final statement, accounting for final additional changes to the Contract Sum.

Submit a certified copy of the UCHC's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the UCHC.

Submit consent of surety to final payment, and final lean releases from all suppliers and subcontractors.

Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Reinspection Procedure: The UCHC will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the UCHC.

Upon completion of reinspection, the UCHC will prepare a certificate of final acceptance, or advise the Contractor of

Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

If necessary, reinspection will be repeated.

1.08 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the UCHC's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.

Mark new information that is important to the UCHC, but was not shown on Contract Drawings or Shop Drawings.

Note related Change Order numbers where applicable.

Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

Upon completion of the project, submit (2) copies of record drawings to the UCHC Agent.

- C. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.

Upon completion of mark-up, submit complete set of record Product Data to the UCHC for its records.

Electronic Submittals: Prepare an electronic CD File of all submittals and insert it as part of each Operating and Maintenance Manual. Refer to Paragraph 1.05 (A) above.

- D. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the UCHC for its records.

END OF SECTION 01700



## SECTION 01710 PROJECT CLEANING

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.
- B. Refer to applicable provisions of Section 01020-CONSTRUCTION AREA ENVIRONMENTAL CONTROL for procedural requirements for keeping the project area as well as surrounding areas and accessways clean during the duration of the project.

#### 1.02 DESCRIPTION OF WORK:

- A. General: Provide general cleaning throughout the construction period. Keep the construction area free of debris and fire hazards throughout the construction period. Surrounding areas and project access routes shall be kept free of construction debris, dirt and dust. Should any such area become soiled from construction related activities, the contractor shall clean the area immediately. Such efforts to do so shall include;

Picking up, transporting and disposing of all materials  
 Vacuuming area with Hepa Filtered vacuum  
 Wet mopping area  
 Wet wiping wall surfaces

- B. Final Cleaning: The Contractor shall provide for a complete project area final cleaning in accordance with the provisions herein. Such final cleaning shall be performed after the completion of the construction related activities but prior to the scheduled completion date of the project.

Employ experienced workers or professional cleaners for final cleaning. Clean area(s) and objects with UCHC Department of Facilities Management standardized products specified herein. Prior to the scheduling of cleaning crews; the Contractor shall meet with the UCHC Agent, and Department of Facilities Management, Director of Buildings and Grounds or designee, to become familiar with UCHC standards and practices.

For work identified to be Phased, the contractor shall clean each phased area in accordance with the requirements specified herein prior to the Owners receivership (occupancy) of the completed space.

#### 1.03 COMPLIANCE

- A. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the UCHC's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

### **PART 2 - PRODUCTS**

#### 2.01 GENERAL

- A. Prior to the start of cleaning activities, submit MSDS for all chemicals to be used.
- B. The contractor shall be responsible for removal and disposal of cleaning products and chemicals at the end of cleaning activities.

- C. Products used shall be those listed in specific use paragraphs or those products determine to be compatible with such products indicated.

### **PART 3 - EXECUTION**

#### **3.01 FINAL CLEANING**

- A. General Requirements: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturers instructions.

Remove labels that are not permanent labels.

Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

Clean exposed interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean.

Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

Removal of Protection: Remove temporary protection, environmental control barriers, construction barriers, and facilities installed for protection of the Work during construction.

Where extra materials of value remaining after completion of associated work have become the UCHC's property, arrange for disposition of these materials as directed.

- B. Complete cleaning operations before requesting inspection for certificate of Substantial Completion.

#### **3.02 AREA CLEANING / ACTION REQUIREMENTS: (should any exist within the project area)**

##### **A. GENERALIZED CLEANING**

1. Use cloths and/or washing tools and squeegees with an all purpose cleaner to damp wipe and clean (streak free) all surfaces of walls, partitions, doors, handrails, ledges, shelving, counters, cabinets (interior and exterior), woodwork, windows, sinks, faucets and fixtures. Clean area furnishings including but not limited to:

Desks, Chairs, File Cabinets, Tables, Credenzas, Light Fixtures, Countertops and Cabinets, inside and out, Shelves, Soap and Towel Dispensers, Mirrors, Writing Boards, Telephones and Clocks

##### **B. SPECIFIC AREA CLEANING**

###### **1. DAMP MOP NON-CARPETED FLOORS**

Use a neutral detergent solution and a mop to remove soil from non-carpeted floors which cannot be removed by sweeping or dust mopping. Floors which are coated with floor finish should be dust mopped prior to damp mopping. Other floor surfaces should be swept prior to damp mopping. Chairs, trash receptacles and other such items should be moved as necessary and returned to their appropriate location. All accessible areas of the floor should be damp mopped. The area to be damp mopped should be outlined with the mop first and then the remainder of the area should be mopped. Care should be taken as required to prevent splash and mop marks from being left on baseboards, furniture legs, doors, etc. Should areas become wet, dry and wipe clean. "Caution-Wet-Floor" signs should be placed so as to provide sufficient warning. After the floor has been damp mopped, it

should have a uniform appearance free of soil, stains, streaks, swirl marks, detergent film or any observable soil which can be removed by damp mopping..

2. **DUST MOP OR SWEEP**  
In areas immediately outside the project entrance/exit, use a floor dusting tool with disposable treated dust mop head or disposable treated dust cloth to remove; dust, soil and litter from non-carpeted floors.
3. **WET WIPE SURFACES**  
Use cloths and/or wall washing tools and solution to damp wipe all surfaces of walls, partitions, doors, handrails.etc. Once complete allow to air dry.

END OF SECTION

## **SECTION 01740 WARRANTIES AND BONDS**

### **PART 1 - GENERAL**

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.

General closeout requirements are included in Section "Project Closeout."

Specific requirements for warranties for all work, products and installations performed shall be for a minimum period of (1) year unless specified otherwise in the individual Sections of Divisions 2 through 16.

Warranty period shall commence at time of UCHC final acceptance.

Certifications and other commitments and agreements for continuing services to UCHC are specified elsewhere in the Contract Documents.

- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

#### 1.03 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the UCHC.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the UCHC.

#### 1.04 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is

responsible for the cost of replacing or rebuilding defective Work regardless of whether the UCHC has benefited from use of the Work through a portion of its anticipated useful service life.

- D. UCHC's Recourse: Written warranties made to the UCHC are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the UCHC can enforce such other duties, obligations, rights, or remedies.
- E. Rejection of Warranties: The UCHC reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

The UCHC reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

#### 1.05 SUBMITTALS

- A. Submit written warranties to the UCHC prior to the date certified for Substantial Completion. If the UCHC's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the UCHC.

When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the UCHC for approval prior to final execution.

Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.

- B. Form of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

#### **PART 2 - PRODUCTS**

(Not applicable).

#### **PART 3 - EXECUTION**

(Not applicable).

END OF SECTION 01740

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**SECTION 02070  
SELECTIVE DEMOLITION**

**PART 1 - GENERAL:**

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION OF WORK:

- A. Extent of selective demolition work is indicated on drawings.
- B. Types of Selective Demolition Work: Demolition requires the selective removal and subsequent offsite disposal of the following:

Portions of building structure indicated on drawings and as required to accommodate new construction.

- C. The Specifications and Drawings are intended to describe and illustrate existing conditions in general.

**Before submitting a bid, the Contractor shall perform his own inspection and become thoroughly familiar with the existing conditions under which the work will be performed.**

**It is not the intent of the Contract Documents to show all existing conditions, and it shall be the responsibility of the Contractor to verify all existing conditions applicable to this project, and to include in his bid all requirements necessary for the completion of the work, based on the existing conditions.**

**The contractor will be held responsible for any assumptions, omissions or errors made as a result of failure to become familiar with the site and the contract documents.**

- D. In addition to that work noted above, the Contractor(s) shall be responsible for the re-supporting of any and all equipment, conduits, boxes, lighting etc. required as a result of the removal of items identified by the project documents.
- E. Related work specified elsewhere:

Remodeling construction work and patching is included within the respective sections of specifications, including removal of materials for re-use and incorporated into remodeling or new construction.

Relocation of pipes, conduits, ducts, other mechanical and electrical work are specified by respective trades.

1.03 JOB CONDITIONS:

- A. Occupancy: Owner will be continuously occupying areas of the building immediately adjacent to areas of selective demolition. Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations.

- B. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
- C. Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner.
- D. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

- E. Fire Suppression System: For work requiring fire suppression shut down, the Contractor shall submit request to the Fire Department 24 hours in advance of the work to be performed. Work shall not commence until such time that the request has been acknowledged by the Fire Department.

Refer to Section 01018-Special Project Procedures for work procedures and impairment of the fire suppression and fire notification system.

#### 1.04 DISCOVERY AND REMOVAL OF HAZARDOUS MATERIALS

- A. Refer to Section 01018 Special Project Requirements for direction relative to discovery and removal of hazardous materials.

#### 1.05 FIRE SUPPRESSION AND FIRE NOTIFICATION WORK PARAMETERS

- A. Refer to Section 01018 Special Project Requirements for direction relative to Fire Suppression and Fire Notification Work Parameters.

### **PART 2 - PRODUCTS**

(Not Applicable).

### **PART 3 - EXECUTION**

#### 3.01 PREPARATION:

- A. Cover and protect furniture, equipment and fixtures to remain from soiling or damage when demolition work is performed in rooms or areas from which such items have not been removed.
- B. Erect and maintain dust-proof partitions and closures as required to prevent spread of dust or fumes to occupied portions of the building.

Provide weatherproof closures for exterior openings resulting from demolition work.

- C. Locate, identify, stub off and disconnect utility services that are not indicated to remain.

Provide by-pass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shut-down of service is necessary during change-over.

#### 3.02 PROTECTION OF EXISTING MATERIALS



- A. The Contractor shall in all areas requiring demolition and/or construction as well as for all access ways to the project site, take necessary precautions to protect all finish surfaces, materials and equipment to remain. Should damage occur, the Contractor shall at no additional expense to the Owner, repair to original condition.

3.03 DEMOLITION:

- A. Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
- B. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of directive from Owner's Representative rearrange selective demolition schedule as necessary to continue overall job progress without delay.
- C. The Contractor shall remove all abandoned piping within the project area. The removal of abandoned piping shall continue through all project area encompassing walls and floors. In addition, the removal of abandoned piping shall continue through fire rated barriers such as shafts and stairs.

The Contractor shall be required to patch and seal openings left by the removal of said abandoned piping by methods consistent with the adjacent construction and or in accordance with the requirements of Section 07900-FIRESTOPPING.

3.04 DISPOSAL OF DEMOLISHED MATERIALS:

- A. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off site.

If hazardous materials are encountered during demolition operations, contact the UCHC Agent immediately. Do not remove and or disturb in any way. Removal of such material shall be the responsibility of the Owner.

Burning of removed materials is not permitted on project site.

3.05 CLEAN-UP AND REPAIR:

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 02070

## **SECTION 03200 CONCRETE REINFORCEMENT**

### **PART 1 - GENERAL**

#### 1.01 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including the General conditions and Supplemental General Conditions, apply to the work specified in this section.

#### 1.02 DESCRIPTION

- A. Furnish all labor, supervision, materials and equipment necessary for or incidental to completion of the concrete reinforcement for cast-in-place concrete as shown on the Contract Drawings and/or specified.

Reinforcement for the work of this project shall include; dowel bars at slab-on-grade concrete slab patching and weld wire fabric reinforcing.

#### 1.03 SUBMITTALS

- A. Material Data:

The Contractor shall submit manufactures material data sheets.

- B. Quality:

All reinforcing steel and welded - wire fabric shall conform to the chemical composition and tensile and bending requirements as outlined in ASTM A-615 and ASTM A-185.

#### 1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver reinforcement to the project site in bundles marked with metal tags indicating bar size, grade and length.
- B. Store reinforcing on skids or other supports above ground and protect from any damage or surface contamination which would impair its bonding qualities.

### **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

- A. All reinforcing bars shall conform to the requirements of ASTM A-615, Grade 60.

- B. Welded - Wire fabric shall conform to the requirements of ASTM A-185

- C. Metal Accessories:

Provide all spacers, chairs, ties, clips and other devices required for proper placement.

#### 2.02 FABRICATION

- A. Bar reinforcing shall be fabricated cold to dimensions given on the Contract Drawings. Conform to ACI Standards 318 and 315 for forming hooks and bends and for detailing, fabricating and erecting reinforcement.

- B. Reinforcing shall be bent cold and shall not be straightened or bent in a manner that will injure the materials.

**PART 3 - EXECUTION**

3.01 INSPECTION

- A. The Contractor shall notify the UCHC Agent shop drawing review Engineer 24 hours prior to placing concrete to inspect secured reinforcing. The Contractor shall submit in report form, inspection and acceptance of reinforcement placement by his review Engineer.

3.02 INSTALLATION

- A. Placement:

Reinforcement shall be free of paint, dirt, oil or excessive scale or rust that might reduce its bond strength with concrete.

Reinforcement shall be accurately placed and secured against displacement before and during the placement of concrete. Provide metal chairs, supports and spacers to secure steel in correct horizontal and vertical position.

No welding of bars will be allowed.

All reinforcing bars shall be supported and wired together to prevent displacement by construction loads or the placement of concrete beyond the tolerances specified below.

- B. Dowels:

Drill horizontally into mid-section of edge of existing slab approximately 6" deep:

#4 bars	12 inch total length
Spacing	24" apart

- C. Welded - Wire fabric:

All slabs on grade shall contain welded - wire fabric

Fabric shall be shipped in flat sheets.

Wire fabric reinforcement for slabs on grade shall be placed in the lower third of the slab depth.

Wire fabric end and side laps shall be six (6) inches.

END OF SECTION

**SECTION 03300  
CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including the General Conditions and Supplementary Conditions, apply to the work specified in this Section.
- B. Related Sections:  
Concrete Reinforcement, Section 03200 – Type and placement of reinforcing.

1.02 DESCRIPTION OF WORK

- A. Furnish all labor, supervision, materials, tools and equipment necessary for or reasonable incidental to completion of all cast-in-place concrete as shown on the Contract Drawings and/or specified herein.
- B. Work shall include; slab-on-grade concrete floor slab patch.

**PART 2 - PRODUCTS**

2.01 MATERIALS

- A. Cement - Domestic Portland Cement conforming to ASTM C-150, Type II (for exposed concrete.) Use one (1) brand of cement from one (1) source throughout.
- B. Fine Aggregate - Natural sand consisting of clean, hard, durable, uncoated particles. Organic content shall be determined according to ASTM C-40. Sand shall conform to the requirements and grading of ASTM C-33.
- C. Course Aggregate - Crushed stone or crushed, washed gravel from approved source, free of dirt and organic materials, conforming to the requirements and grading of ASTM C-33.
- D. Water - From approved source; clean, potable and free from oils, salt, alkali or organic matter.
- E. Admixtures - Each admixture shall be approved by the UCHC Agent. No admixtures containing calcium chloride or other water soluble Chloride Ion (CL-) greater than 0.15% by weight of cement will be allowed. Each manufacturer shall submit a written, notarized statement to the Engineer of the Chloride content of each admixture. Formulate admixtures to avoid an increase in water:cement ratio or loss of strength.

Air-entraining agent shall conform to ASTM C-260.

Retarder-densifier shall conform to ASTM C-494, Type "D".

Accelerator shall conform to ASTM C494, Type "C".

Water-reducing agent shall conform to ASTM C-494, Type "A".

2.02 SPECIFIC REQUIREMENTS

- A. Concrete for all the parts of the work shall be 3,000 PSI at 28 days as noted on Drawings and meet the values shown in the following Table:

Minimum compressive strength at 28 days	3,000 PSI
Slump (inches)	2-1/2 - 4
Maximum size coarse aggregate (inches)	1-1/2

Maximum size coarse aggregate for slab on grade (inches)	1-1/2
Minimum cement factor (sacks per C.Y.)	5-1/2
Maximum water cement ratio	.45

### **PART 3 - EXECUTION**

#### **3.01 PRIOR TO PLACING CONCRETE**

- A. The subgrade shall be free of frost before concrete placing begins.
- B. All debris, sawdust, ice, etc., is to be cleaned from location of deposit before concrete is placed.
- C. All water is to be removed from location of deposit before concrete is placed. Provide drainage or pumping as required to maintain dry excavation until concrete has taken initial set.
- D. All conduits and piping are to be dug into subgrade sufficiently so as to provide uniform slab thickness.
- E. Prior to placing any concrete, the Contractor shall notify the UCHC Agent/Shop Drawing and the Review Engineer 24 hours in advance so that reinforcing may be inspected. Do not place concrete until inspection has been made or waived.
- F. All anchor bolts, sleeves, inserts and other embedded items shall be set with the aid of templates and shall be securely positioned in place prior to the placement of concrete.

#### **3.02 MIXING**

- A. Concrete shall be ready-mix in conformance with the requirements of ASTM C-94 for measurement of materials, batching, mixing and delivery and shall be discharged within 1-1/2 hours after water is first added to the mix. This maximum time may be reduced in unusually hot weather.
- B. Mixing and conveying equipment shall be thoroughly clean and free from hardened concrete and foreign materials before concrete operation is started.
- C. All materials, including water, shall be added to ready-mixed concrete at the batching plant. Water shall not be added to the mix on the project site.
- D. Mixer shall produce a thoroughly mixed, uniform mass and discharge mixture without segregation. Entire batch shall be discharged before mixer is recharged.
- E. Partially hardened concrete shall not be retempered or used.
- F. Delivery tickets:

One (1) copy of all concrete delivery tickets shall be furnished to the Engineer upon request. Contractor shall not location of placement on tickets. Delivery tickets shall provide the following information.

- Date and truck number
- Name of ready-mix batch plant
- Contractor and job location
- Cement brand, type, design strength, mix number and weight in pounds
- Fine aggregate weight in pounds
- Maximum size of aggregate
- Coarse aggregate weight in pounds
- Water in gallons

Admixture, name and amount in concrete, if any  
Amount of concrete in cubic yards  
Time mix left plant

3.03 DEPOSITING CONCRETE

- A. Depositing of all concrete shall be in accordance with ACI 301 and ACI 304.
- B. Concreting shall conform to the requirements of ACI 305 or ACI 306 in hot or cold weather, as required. See Paragraph 3.6.
- C. All contractors whose work is related to or supported by the concrete shall be given ample notice and opportunity to introduce and/or finish embedded items before the concrete is placed.
- D. Unless adequate protection is provided, concrete shall not be placed during rain, sleet or snow.
- E. Concrete shall be conveyed from the mixer to the place of final deposit in a practically continuous flow by methods which will prevent the separation or loss of the ingredients. It shall be placed in the forms or on-grade as nearly as practicable to its final position and shall be thoroughly vibrated around all reinforcing bars and mesh to assure complete absence of voids. Under no circumstances shall partially hardened concrete be placed in the work. Concrete shall be prohibited from free-falling in excess of four (4') feet.
- F. Concrete shall be thoroughly compacted and worked into the forms and around the reinforcing by means of suitable mechanical vibrators. Sufficient vibrators shall be on the hand to allow for breakdowns. Vibrators shall be run deep into the concrete and shall remain in one position until the concrete is thoroughly compacted, but not long enough to cause segregation of the aggregates.

3.04 FINISHED CONCRETE SURFACES

- A. Slab-on-grade:

Screed placed concrete uniform and flush with surrounding floor surfaces. Remove excess material until condition is met. It is the intent of this Specification that forming operations be performed in a manner which will produce sound concrete surfaces free of bulges, offsets and defects.

3.05 CURING

- A. All concrete shall be kept constantly moist and protected against any drying action for not less than seven days after placing of the concrete and shall be accomplished in the following manner:

Interior slabs on grad shall be cured in accordance with the provisions of ACI 301:

The use of curing compounds on slab-on-grade construction is not permitted with special exception.

END OF SECTION

## SECTION 08110 STEEL DOORS AND FRAMES

### **PART 1 - GENERAL**

#### 1.01 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.

#### 1.02 QUALITY ASSURANCE

- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.
- B. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows", and have been tested, listed, and labeled in accordance with ASTM E 152 "Standard Methods of Fire Tests of Door Assemblies" by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.

#### 1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's technical product data substantiating that products comply with requirements.
- B. Shop Drawings: Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
- C. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Provide additional sealed plastic wrapping for factory-finished doors.
- B. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to the UCHC; otherwise, remove and replace damaged items as directed.

Store doors and frames at building site under cover. Place units on minimum 4" high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4" spaces between stacked doors to promote air circulation.

### **PART 2 - PRODUCTS**

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering steel doors and frames which may be incorporated in the work include; but are not limited to, the following:

Ceco Corp.

Substitutions as approved by UCHC.

## 2.02 MATERIALS

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.
- C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, with ASTM A 525, G60 zinc coating, mill phosphatized.
- D. Supports and Anchors: Fabricate of not less than 18-gage galvanized sheet steel.
- E. Inserts, Bolts, and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable.
- F. Shop Applied Paint:

Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

## 2.03 FABRICATION, GENERAL

- A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site. Comply with SDI-100 requirements as follows:
- Interior Doors: SDI-100, Grade II, heavy-duty, Model 1, minimum 18-gage faces.
- Exterior Doors: SDI-100, Grade III, extra heavy-duty, Model 2, minimum 16-gage faces.
- B. Fabricate exposed faces of doors and panels, including stiles and rails of nonflush units, from only cold-rolled steel.
- C. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).
- D. Fabricate exterior doors, panels, and frames from galvanized sheet steel. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gage inverted steel channels.
- E. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.
- F. Thermal-Rated (Insulating) Assemblies:



- G. At exterior locations provide doors which have been fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C 236.
- H. Unless otherwise indicated, provide thermal-rated assemblies with U factor of 0.24 Btu/(hr x sq ft x deg. F) or better.
- I. Finish Hardware Preparation: Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 series specifications for door and frame preparation for hardware.
- J. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.
- K. Locate finish hardware as indicated on final shop drawings or, if not indicated, in accordance with "Recommended Locations for Builder's Hardware", published by Door and Hardware Institute.
- L. Shop Painting:  
  
Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.  
  
Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

#### 2.04 STEEL DOORS

- A. Provide metal doors of types and styles indicated on drawings or schedules. All doors shall be 1-3/4" in thickness.

#### 2.05 STEEL FRAMES

- A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of minimum 16-gage cold-rolled furniture steel.
- B. Form exterior frames of hot-dip galvanized steel.

### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION

- A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.
- B. Placing Frames: Comply with provisions of SDI-105 "Recommended Erection Instructions For Steel Frames", unless otherwise indicated.

Except for frames located at in-place openings, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels.

At in-place construction, set frames and secure to adjacent construction with machine screws.

Install fire-rated frames in accordance with NFPA Std. No. 80.

C. Door Installation:

Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.

Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

3.02 ADJUST AND CLEAN

A. Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Protection Removal: Immediately prior to final inspection, remove protective plastic wrappings from prefinished doors.

C. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION 08110

## SECTION 09510 ACOUSTICAL CEILINGS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY:

- A. Types of acoustical ceilings specified in this section include the following:

Acoustical panel ceilings, exposed suspension.

#### 1.03 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

#### 1.04 QUALITY ASSURANCE:

- A. Fire Performance Characteristics: Provide acoustical ceiling components that are identical to those tested for the following fire performance characteristics, according to ASTM test method indicated, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate marking of applicable testing and inspecting agency.

Surface Burning Characteristics: As follows, tested per ASTM E 84.

Flame Spread: 25 or less.

Smoke Developed: 50 or less.

- B. Standard for Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable ASTM C 635 requirements.
- C. Installation of suspension systems shall comply with ASTM C 636, including but not limited to, lateral force bracing, wall moldings, spreader bars, hanger wires.
- D. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system components (if any), and partition system (if any).

#### 1.05 DELIVERY, STORAGE AND HANDLING:

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination or other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.06 PROJECT CONDITIONS:

- A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.07 EXTRA MATERIALS:

- A. Deliver extra materials to Owner. Furnish extra materials described below matching products installed, packaged with protective covering for storage and identified with appropriate labels.

Acoustical Ceiling Units: Furnish quantity of full size units equal to 2.0% of amount installed.

Exposed Suspension System Components: Furnish quantity of each exposed component equal to 2.0% of amount installed.

**PART 2 - PRODUCTS**

2.01 ACOUSTICAL CEILING UNITS, GENERAL:

- A. Acceptable Manufacturers: Armstrong
- B. Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration indicated which are prepared for mounting method designated and which comply with FS SS-S-118 requirements, including those indicated by reference to type, form, pattern, grade (NRC or NIC' as applicable), light reflectance coefficient (LR), edge detail, and joint detail (if any).
- C. Colors, Textures, and Patterns: Provide products to match appearance characteristics indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors, surface textures, and patterns available for acoustical ceiling units and exposed metal suspension system members of quality designated.

2.02 ACOUSTICAL PANELS:

A. CEILING TYPE AC-1

Ceramaguard non-directional acoustical ceiling tiles with Prelude Plus XL – Aluminum 15”/16” Exposed Tee suspension grid by ARMSTRONG. Other characteristics as follows:

Classification - Comply with the requirements of ASTM E-1264, Type IV, Form 2, pattern E, manufacturers standard thickness but not less than 5/8” thick

Material - Wet Formed Ceramic and Mineral Fiber Composite

Size - 24” x 48” x 5/8” (605)

Surface Finish - Factory applied vinyl latex paint

Color - White

Light Reflectance - Actual LR 0.88

Weight - 1.02 lbs / SF

Edge Detail – Square Edge

Surface Burning - Class “A” per ASTM E 1264, Flame spread 25 or less per ASTM E84

2.03 METAL SUSPENSION SYSTEMS, GENERAL:

- A. Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable ASTM C 635 requirements.
- Type: Prelude Plus XL – Aluminum suspension grid by Armstrong Ceiling Solutions  
Color: White  
Structural Classification: Heavy Duty (HD) System (interior systems)
- B. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated. For exposed suspension members and accessories with painted finish, provide color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's full range of standard colors.
- C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.
- D. Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, prestretched, Class 1 coating, sized so that stress at 3-times hanger design load (ASTM C 635, Table 1, Direct Hung), will be less than yield stress of wire, but provide not less than 12 gage.
- E. Edge Moldings and Trim: Metal or extruded plastic of types and profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling which fits with type of edge detail and suspension system indicated.

### **PART 3 - EXECUTION**

#### **3.01 PREPARATION:**

- A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

#### **3.02 INSTALLATION:**

- A. General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire-resistance rating requirements as indicated, and CISCA standards applicable to work.
- B. Arrange acoustical units and orient directionally-patterned units (if any) in manner shown by reflected ceiling plans.
- C. Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers not less than 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.

Install hangers plumb and free from contact with insulation or other objects within ceiling plenum which are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal force by bracing, countersplaying or other equally effective means.

- D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

Screw-attach moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

- E. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

Install hold-down clips; space as recommended by panel manufacturer, unless otherwise indicated or required.

3.03 CLEANING:

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09510

## **SECTION 09705 RESINOUS FLOORING**

### **PART 1 – GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This section includes the following:
  - 1. Resinous flooring system as shown on the drawings and in schedules.
- B. Related sections include the following:
  - 1. Cast-in-Place Concrete, section 03300 (Floor Patch and Infill)

#### **1.3 SYSTEM DESCRIPTION**

- A. The work shall consist of preparation of the substrate, the furnishing and application of a rapid drying, calcium aluminate based cementitious urethane based self-leveling seamless flooring system with decorative quartz aggregate broadcast and Epoxy broadcast and urethane topcoat.
- B. The system shall have the color and texture as specified by the Owner with a nominal thickness of 1/4 inch. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.
- C. Cove base (4 inch) to be applied per manufacturers standard details unless otherwise noted

#### **1.4 SUBMITTALS**

- A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.
- B. Manufacturer's Safety Data Sheet (SDS) for each product being used.
- C. Samples: A 3 x 3 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system subject to normal tolerances.

#### **1.5 QUALITY ASSURANCE**

- A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.
- B. The Applicator shall have experience in installation of the flooring system as confirmed by the manufacturer in all phases of surface preparation and application of the product specified.
- C. No requests for substitutions shall be considered that would change the generic type of the specified system.

- D. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.
- E. System shall be in compliance with the Indoor Air Quality requirements of California section 01350 as verified by a qualified independent testing laboratory.
- F. System shall comply with LEED v4 EPD requirements. Information must be submitted with proposal at bid date.
- G. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping
  - 1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.
- B. Storage and Protection
  - 1. The Applicator shall be provided with a dry storage area for all components. The area shall be between 60 F and 85 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
  - 2. Copies of Safety Data Sheets (SDS) for all components shall be kept on site for review by the Engineer or other personnel.
- C. Waste Disposal
  - 1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

#### 1.7 PROJECT CONDITIONS

- A. Site Requirements
  - 1. Application may proceed while air, material and substrate temperatures are between 60 F and 85 F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
  - 2. The relative humidity in the specific location of the application shall be less than 85 % and the surface temperature shall be at least 5 F above the dew point.
  - 3. The Applicator shall ensure that adequate ventilation is available for the work area. This shall include the use of manufacturer's approved fans, smooth bore tubing and closure of the work area.
  - 4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.
- B. Conditions of new concrete to be coated with cementitious urethane material.
  - 1. Concrete shall be moisture cured for a minimum of 3 days and have fully cured a minimum of 5 days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
  - 2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary nor desirable).
  - 3. Sealers and curing agents should not to be used.
  - 4. Concrete shall have minimum design strength of 3.500 psi. and a maximum water/cement ratio of 0.45



5. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety Requirements

1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.
2. "No Smoking" signs shall be posted at the entrances to the work area.
3. The Owner shall be responsible for the removal of foodstuffs from the work area.
4. Non-related personnel in the work area shall be kept to a minimum.

1.8 WARRANTY

- A. Dur-A-Flex, Inc. warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to Dur-A-Flex, Inc. published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.
- B. Dur-A-Flex, Inc. liability with respect to this warranty is strictly limited to the value of the material purchase.

**PART 2 – PRODUCTS**

2.1 FLOORING

- A. Dur-A-Flex, Inc, Hybri-Flex EQ (self leveling broadcast quartz), epoxy/aliphatic urethane topcoat seamless flooring system.
  1. System Materials:
    - a. Topping: Dur-A-Flex, Inc, Poly-Crete MD resin, hardener and SL aggregate.
    - b. The broadcast aggregate shall be Dur-A-Flex, Inc. Q28 quartz aggregate. Color: Q28-21
    - c. Broadcast: Dur-A-Flex, Inc. Dur-A-Glaze #4, epoxy based two-component resin.
    - d. Seal Coats: Dur-A-Flex, Inc Dur-A-Glaze #4, epoxy-based, two-component resin.
    - e. Topcoat: Dur-A-Flex, Inc. Armor Top aliphatic urethane resin and hardener.
  2. Patch Materials
    - a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Polycrete MD (up to ¼ inch).
    - b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Polycrete WR.

2.2 MANUFACTURER

- A. Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802
- B. Manufacturer of Approved System shall be single source and made in the USA.

2.3 PRODUCT REQUIREMENTS

A. Topping	Poly-Crete SL
1. Percent Reactive	100 %
2. VOC	0 g/L
3. Bond Strength to Concrete ASTM D 4541	400 psi, substrates fails
4. Compressive Strength, ASTM C 579	9,000 psi
5. Tensile Strength, ASTM D 638	2,175 psi
6. Flexural Strength, ASTM D 790	5,076 psi
7. Impact Resistance @ 125 mils, MIL D-3134, No visible damage or deterioration	160 inch lbs

B.	Broadcast Coat, Grout Coat(s)	Dur-A-Glaze #4 Resin
	1. Percent Reactive,	100 %
	2. VOC	<4 g/L
	3. Water Absorption, ASTM D 570	0.04%
	4. Tensile Strength, ASTM D 638	4000psi
	5. Coefficient of thermal expansion ASTM D 696,	$2 \times 10^{-5}$ in/in/F
	6. Flammability ASTM D-635	Self-Extinguishing
	7. Flame Spread/ NFPA 101 ASTM E-84	Class A
C.	Topcoat	Armor Top
	1. VOC	0 g/L
	2. 60 Degree Gloss ASTM D523	75+/-5
	3. Mixed Viscosity, (Brookfield 25°C)	500 cps
	4. Tensile strength, ASTM D 638	7,000 psi
	5. Abrasion Resistance, ASTM D4060 CS 17 wheel (1,000 g load) 1,000 cycles	Gloss Satin 10 12 mg loss without grit
	6. Pot life @ 70° F 50% RH	2 hours
	7. Full Chemical resistance	7 days

### PART 3 – EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.
1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

#### 3.2 PREPARATION

##### A. General

1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products.
2. Moisture Testing: Perform tests recommended by manufacturer and as follows.
  - a. Perform core testing by pulling 2 inch diameter cores that are 2 inches in depth. Pull a minimum of 2 cores for 1500 SF area. Provide cost of pulling cores and core analysis in proposal. Total soluble salts (Sodium, Potassium, Chloride) should be less than 3200ppm.
  - b. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 99% relative humidity level measurement.
  - c. If the vapor drive exceeds 99% relative humidity or soluble salts are greater than 3200ppm, then the Owner and/or Engineer shall be notified and advised of additional cost for the possible installation of a vapor mitigation system that has been approved by the manufacturer or other means to lower the value to the acceptable limit.
3. Mechanical surface preparation
  - a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 3-5 as described by the International Concrete Repair Institute.

- b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
  - c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.
  - d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.
4. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.

### 3.3 APPLICATION

#### A. General

1. The system shall be applied in five distinct steps as listed below:
  - a. Substrate preparation
  - b. Topping/overlay application with quartz aggregate broadcast.
  - c. Resin application with quartz aggregate broadcast.
  - d. Topcoat application
  - e. Final urethane topcoat application.
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

#### B. Topping

1. The topping shall be applied as a self-leveling system as specified by the Architect. The topping shall be applied in one lift with a nominal thickness of 1/8 inch.
2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.
3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means. SL Aggregate shall then be added to the catalyzed mixture and mixed in a manner to achieve a homogenous blend.
4. The topping shall be applied over horizontal surfaces using 1/2 inch "v" notched squeegee, trowels or other systems approved by the Manufacturer.
5. Immediately upon placing, the topping shall be degassed with a loop roller.
6. Quartz aggregate shall be broadcast to excess into the wet material at the rate of 0.8 lbs/sf.
7. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

#### C. Broadcast

1. The broadcast coat resin shall be applied at the rate of 90 sf/gal.
2. The broadcast coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
3. Quartz aggregate shall be broadcast into the wet resin at the rate of 0.5 lbs/sf.
4. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

#### D. Grout Coat and Topcoat

1. The first grout coat shall be squeegee applied with a coverage rate of 90 sf/gal.
2. The grout coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.

3. The grout coat will be back rolled and cross rolled to provide a uniform standard texture and finish.
4. The final topcoat (Armor Top with duragrip) shall be roller applied with a coverage rate of 500 sf/gal.
- 5.. The finish floor will have a nominal thickness of 1/4 inch.

#### 3.4 FIELD QUALITY CONTROL

##### A. Tests, Inspection

1. The following tests shall be conducted by the Applicator:
  - a. Temperature
    1. Air, substrate temperatures and, if applicable, dew point.
  - b. Coverage Rates
    1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

#### 3.5 CLEANING AND PROTECTION

- A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
- B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

END OF SECTION

## SECTION 09900 PAINTING

### **PART 1 - GENERAL**

#### 1.01 DESCRIPTION OF WORK:

- A. Extent of painting work is indicated on drawings and schedules, and as herein specified.
- B. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.

Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

- C. Work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.
- D. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
- E. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not be painted, paint exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, UCHC will select these from standard colors or finishes available.
- F. Following categories of work are not included as part of field-applied finish work.

Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, prefinished partition systems, acoustic materials, and finished mechanical and electrical equipment, including light fixtures, switchgear and distribution cabinets.

Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.

Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting. Galvanized steel is not a finished surface.

Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, singages, sensing devices, motor and fan shafts will not require finish painting.

- G. Following categories of work are included under other sections of these specifications.

Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, metal fabrications, hollow metal work and similar items.

- H. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.02 QUALITY ASSURANCE:

- A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
- B. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

1.03 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.
- B. Samples: Contractor shall provide paint samples for initial color selection. Use representative colors when preparing samples for review. Submit samples for UCHC's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

1.04 DELIVERY AND STORAGE:

- A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

Name or title of material.

Fed. Spec. number, if applicable.

Manufacturer's stock number and date of manufacturer.

Manufacturer's name.

Contents by volume, for major pigment and vehicle constituents.

Thinning instructions.

Application instructions.

Color name and number.

- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.05 JOB CONDITIONS:

- A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 deg. F (10 deg. C) and 90 deg. F (32 deg. C), unless otherwise permitted by paint manufacturer's printed instructions.
- B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 deg. F (7 deg. C) and 95 deg. F (35 deg. C), unless otherwise permitted by paint manufacturer's printed instructions.
- C. Do not apply paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

## **PART 2 - PRODUCTS**

### 2.01 ACCEPTABLE MANUFACTURERS:

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include; but are not limited to, the following:

The Sherwin-Williams Company

- B. Substitutions: As approved by the Architect prior to the Contractor's submittal of Bid Proposal.

### 2.02 MATERIALS:

- A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

- B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

## **PART 3 - EXECUTION**

### 3.01 INSPECTION:

- A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.
- B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

### 3.02 SURFACE PREPARATION - GENERAL:

- A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
- B. Provide barrier coats over incompatible primers or remove and reprime as required. Notify UCHC in writing of any anticipated problems in using the specified coating systems with substrates primed by others.
- C. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
- D. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

- E. Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, paneling.

When transparent finish is required, use spar varnish for backpriming.

Backprime paneling on interior partitions only where masonry, plaster, or other wet wall construction occurs on backside.

Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

- F. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.

- G. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

### 3.03 SURFACE PREPARATION AND APPLICATION OF WATER-BASED WOOD STAIN:

- A. Sand the wood in the direction of the grain, first using medium-grade sandpaper (#120). Once complete re-sand surfaces using a fine-grade sandpaper (#220). Do NOT use steel wool. Remove all sanding dust.
- B. Apply water-based pre-stain wood conditioner. Allow to penetrate 1-5 minutes and remove excess with clean cloth. Lightly sand surfaces to smooth any raised grain after 30 minutes of pre-stain wood conditioner application.
- C. Apply water-based wood stain. Allow to penetrate no longer than 3 minutes and remove excess with clean cloth, wiping in the direction of the grain to achieve even stain color.
- D. To increase color intensity, apply a second coat after 2-hours repeating directions for application of first coat.

### 3.04 APPLICATION OF WATER-BASED PROTECTIVE FINISH:

- A. Surface must be dry and free of wax, grease, polish, old finishes in poor condition or any foreign matter. Sand to a smooth and uniform surface. DO NOT USE STEEL WOOL. Remove dust with damp clean cloth and allow to dry completely.
- B. Apply a thin coat of water-based protective finish. Apply in one direction with the grain. Do not over brush.
- C. Allow to dry a minimum of 2-hours then sand using a fine-grade sandpaper (#220) to ensure an even finish and proper adhesion of additional coats. DO NOT USE STEEL WOOL. Remove dust with damp clean cloth and allow to dry completely.
- D. Apply a second coat of water-based protective finish.



3.05 MATERIALS PREPARATION:

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.06 APPLICATION FINISHING SYSTEMS:

- A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Refer to application schedule at the end of this Document.

Paint colors, surface treatments, and finishes, are indicated in "schedules" of the contract documents.

Provide finish coats which are compatible with prime paints used.

Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

**Painting of existing surfaces:** The drawings finish schedule may indicate number of coats to be applied. It shall be noted that the number of coats indicated shall be used as a guide only and is intended for those conditions where matching paint color is indicated and shall not be misconstrued as being definitive. The Contractor shall apply additional coats as required until paint film is of uniform finish, color and appearance. For those conditions where a color change is indicated, the Contractor shall apply additional coats as required until paint film is of uniform finish, color and appearance. The expense of any and all additional coats of paint shall be included in the Contractor's Bid.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.

Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.

Sand lightly between each succeeding enamel or varnish coat.

Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

- B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

- C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.
- D. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in mechanical equipment rooms and in occupied spaces.
- E. Mechanical items to be painted include, but are not limited to, the following:
  - Exposed piping, pipe hangers, and supports.
  - Exposed ductwork.
  - Exposed accessory items.
- F. Electrical items to be painted include, but are not limited to, the following:
  - Exposed conduit and fittings (except in Mechanical Rooms).

Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
- G. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.
- H. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.  
Provide satin finish for final coats, unless otherwise indicated.
- I. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

### 3.06 CLEAN-UP AND PROTECTION:

- A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.
- B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to UCHC.

Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.07 INTERIOR PAINT SCHEDULE:

General: Provide the following paint systems for the various substrates, as indicated.

A. Gypsum Drywall Systems:

Locations of use shall be: Surrounding wall surface areas outside of Rooms R1207 and R1241

1. Eggshell Finish: 3 coats with total dry film thickness not less than 2.5 mils.
2. First Coat:  
Sherwin-Williams: ProMar 200 Zero VOC Latex Primer. B28W02600 (MPI #149)
3. Second Coats and Third Coats:  
Sherwin-Williams: ProMar 200 HP –Eg- Shel Latex,B41W01951 (MPI#144)

B. Gypsum Drywall Systems:

Locations of use shall be: New and Existing wall surfaces in Rooms R1207 and R1241 (High Humidity)

1. Semi-Gloss Finish: 3 coats with total dry film thickness not less than 2.5 mils.
2. First Coat:  
Sherwin-Williams: ProMar 200 Zero VOC Latex Primer. B28W02600 (MPI# 50).
1. Second Coats and Third Coats:  
Sherwin-Williams: Pro Industrial Waterbased Epoxy Egg-Shell\_B73W00361 (MPI# 254)

C. Concrete Masonry Units:

Locations of use shall be: New and Existing Concrete Masonry Units in Rooms R1207 and R1241 (High Humidity)

1. Semi-Gloss Finish: 2 Finish coats over filled surface with total dry film thickness not less than 2.5 mils, excluding filler coat.
2. Filler Coat:  
Sherwin-Williams: Prep Rite Block Filler #B25W00025 (MPI# 4).
3. First and Second Finish Coats:  
Sherwin-Williams: Pro Industrial Waterbased Epoxy Egg-Shell\_B73W00361 (MPI# 254)

B. Ferrous Metal:

Locations of use shall be: New and Existing door and frame surfaces (High Humidity)

1. Semi Gloss Finish: 2 finish coats over primer, with total dry film thickness not less than 2.5 mils.
2. Prime Coat: Shop primed.
3. First and Second Coat: Semi Gloss Epoxy.  
Sherwin-Williams Pro Industrial PreCatalyzed Waterbased Semi-Gloss Epoxy – K46W01151

END OF SECTION      09900

**SECTION 15000**  
**R1207 / 41 CONVERT TO ZEBRAFISH ROOM**  
**MECHANICAL SYSTEMS DESCRIPTION**

This project includes;

- Ductwork modifications as well as diffuser and register removals and installations as a result of the installation of a new suspended ceiling system.
- Below slab plumbing piping and installation of floor receptors.

The project references the following individual specification sections, which define systems, products, installation and standards, not defined on contract drawings.

<u>#</u>	<u>TITLE</u>
<b>15010</b>	<b>General Conditions for Mechanical Trades</b>
<b>15050</b>	<b>Basic Mechanical Materials and Design Parameters</b>
<b>15300</b>	<b>Fire Protection</b>
<b>15410</b>	<b>Plumbing Piping</b>
<b>15890</b>	<b>Ductwork and Ductwork Accessories</b>
<b>15990</b>	<b>Testing Adjusting and Balancing</b>
<b>15995</b>	<b>Air Flow Testing</b>

END OF SECTION

**SECTION 15010**  
**GENERAL CONDITIONS FOR MECHANICAL TRADES**

**PART I - GENERAL**

1.01 DESCRIPTION

- A. The General Conditions and Supplementary General Conditions are a part of this Division and are to be considered a part of this Contract.
- B. Where items of the General Conditions and Supplementary General Conditions are repeated in other Sections of the Specifications, it is merely intended to qualify or to call particular attention to them. It is not intended that any other parts of the General Conditions and Supplementary General Conditions shall be assumed to be omitted if not repeated therein.
- C. This Section applies equally and specifically to all Contractors supplying labor and/or equipment and/or materials as required under each Section of this Division.

1.02 INTENT

- A. It is the intent of the Specifications and Drawings to call for finished work, tested and ready for operation.
- B. Any apparatus, appliance, material or work not shown on Drawings but mentioned in the Specifications, or vice versa, or any incidental accessories necessary to make the work complete and perfect in all respects and ready for operation as determined by good trade practice even if not particularly specified, shall be furnished, delivered and installed under their respective Divisions without any additional expense to the Owner.
- C. Minor details not usually shown or specified but necessary for proper installation and operation shall be included in the work as though they were hereinafter shown or specified.
- D. Work under each Section shall include giving written notice to the UCHC Agent of any materials or apparatus believed inadequate or unsuitable; in violation of laws, ordinances, rules or regulations of authorities having jurisdiction; and any necessary items of work omitted. In the absence of such written notice, it is mutually agreed that work under each Section has included the cost of all required items for the accepted, satisfactory functioning of the entire system without extra compensation.

1.03 DEFINITIONS

- A. Word "Subcontractor" means specifically the subcontractor working under this Division. Other Contractors are specifically designated "Plumbing Subcontractor", "General Contractor" and so on.
- B. Note: Take care to ascertain limits of responsibility for connecting equipment which requires connections by two or more trades.
- C. Word "install" shall mean set in place complete with all mounting facilities and connections as necessary ready for normal use or service.
- D. Words "furnish" or "supply" shall mean purchase, deliver to, and off-load at the job site, all ready to be installed including where appropriate all necessary interim storage and protection.
- E. Word "provide" shall mean furnish (or supply) and install as necessary.

- F. Word “finished” refers to all rooms and areas scheduled to be painted in Room Finish Schedule on the drawings. All rooms and areas not covered in Schedule, including underground tunnels and areas above ceilings shall be considered not finished, unless otherwise noted.
- G. Words “approved equal” mean any product which in the opinion of the UCHC Agent is equal in quality, arrangement, appearance, and performance to the product specified.
- H. Word “wiring” shall mean cable assembly, raceway, conductors, fittings and any other necessary accessories to make a complete wiring system.
- I. Word “product” shall mean any item of equipment, material, fixture, apparatus, appliance or accessory installed under this Division.

1.04 DRAWINGS

- A. Drawings are diagrammatic and indicate the general arrangement of systems and work included in the Contract. Consult the Architectural Drawings and Details for exact location of fixtures and equipment; where same are not definitely located, obtain this information from the Architect. (Do not scale the drawings)
- B. Work under each Section shall closely follow Drawings in layout of work; check Drawings of other Divisions to verify spaces in which work will be installed. Maintain maximum headroom; where space conditions appear inadequate, UCHC Agent shall be notified before proceeding with installations.
- C. The UCHC Agent may, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades and/or for proper execution of the work.
- D. Where variances occur between the Drawings and Specifications or within either of the Documents, the item or arrangement of better quality, shall be included in the Contract price. The UCHC Agent shall decide on the item and the manner in which the work shall be installed.

1.05 SURVEYS AND MEASUREMENTS

- A. Before submitting a Bid, the Contractor shall visit the site and shall become-thoroughly familiar with all conditions under which the work will be installed. The Contractor will be held responsible for any assumptions, omissions or errors made as a result of failure to become familiar with the site and the Contract Documents.
- B. The Contractor shall base all measurements, both horizontal and vertical, from established bench marks. All work shall agree with these established lines and levels. Verify all measurements at the site and check the correctness of same as related to the work.
- C. Should the Contractor discover any discrepancies between actual measurements and those indicated which prevent following good practice or which interfere with the intent of the Drawings and Specifications, the UCHC Agent will be notified and work will not proceed until instructions from the UCHC Agent are received.

1.06 CODES AND STANDARDS

- A. The Following Codes and Standards listed below apply to all mechanical work. Wherever Codes and/or Standards are mentioned in these Specifications, the latest applicable edition or revision of the following: 2012 Series of International Building Codes as amended and Adopted by the State of Connecticut
- B. The following Standards shall be used where referenced by the following abbreviations:

AABC	Associated Air Balance Council
ACGIH	American Conference of Governmental Industrial Hygienists
ADC	Air Diffusion Council

AGA	American Gas Association
AIA	American Institute of Architects
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ARI	Air Conditioning and Refrigeration Institute
ASE	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASTM	American Society of Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
CGA	Compressed Gas Association
CSA	Canadian Standards Association
CISPI	Cast Iron Soil Pipe Institute
EJMA	Expansion Joint Manufacturing Association
EPA	Environmental Protection Agency
FM	Environmental Protection Agency
FSSC	Federal Specification
HIS	Hydraulic Institute Standards
IBR	Hydraulic Institute Standards
IEEE	Institute of Electrical and Electronics Engineers
IRI	Industrial Risk Insurers
ISO	Insurance Services Office
MCAA	Mechanical Contractors Association of America
NBS	National Bureau of Standards
NEBB	National Environmental Balancing Bureau
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NOFI	National Oil Fuel Institute
NSC	National Safety Council
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration
PDI	Plumbing and Drainage Institute
SBI	Steel Boiler Industry (Division of Hydronics Institute)
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
STI	Steel Tank Institute
UL	Underwriters' Laboratories

C. All materials furnished and all work installed shall comply with the rules and recommendations of the NFPA, the requirements of the local utility companies, the recommendations of the fire insurance rating organization having jurisdiction and the requirements of all Governmental departments having jurisdiction.

D. The Contractor shall include in the work, without extra cost to the Owner, any labor, materials, services, apparatus and Drawings in order to comply with all applicable laws, ordinances, rules and regulations, whether shown on Drawings and/or specified or not.

1.07 NOT USED

1.08 COORDINATION WITH OTHER DIVISIONS

A. All work shall be carried out in conjunction with other trades and full cooperation shall be given in order that all work may proceed with a minimum of delay and interference. Particular emphasis is placed on timely



installation of major apparatus and furnishing other Contractors, especially the Contractor or Construction Manager, with information as to openings, chases, sleeves, bases, inserts, equipment locations, panels, etc., required by other trades.

- B. The Contractors are required to examine all of the Project Drawings and mutually arrange work so as to avoid interference with the work of other trades. In general, ductwork-, heating, condenser, chilled water piping, sprinkler piping and drainage lines take precedence over water, gas and electrical conduits. The UCHC Agent shall make final decisions regarding the arrangement of work which cannot be agreed upon by the Contractors.
- C. Where the work of the Contractor will be installed in close proximity to or will interfere with work of other trades, the Contractors will cooperate in working out space conditions to make a satisfactory adjustment.
- D. If the work under a Section is installed before coordinating with other Divisions or Sections or so as to cause interference with work of other Sections, the necessary changes to correct the condition shall be made by the Contractor causing the interference without extra charge to the Owner.
- E. If so directed in other Sections, the Contractor indicated shall prepare composite working drawings and sections clearly showing how the work is to be installed in relation to the work of other trades, at no extra charge to the Owner.

#### 1.09 ACCEPTANCES

- A. The equipment, materials, workmanship, design and arrangement of all work installed under the Mechanical Sections shall be subject to the review of the UCHC Agent.
- B. Within 30 days after the awarding of a Contract, the Mechanical Contractor shall submit to the UCHC Agent, for review, a list of manufacturers of equipment proposed for the work under the Mechanical Sections. The intent to use the exact makes specified does not relieve the Contractor of the responsibility of submitting such a list.

If extensive or unacceptable delivery time is expected on a particular item of equipment specified, the Contractor shall notify the UCHC Agent, in writing, within 30 days of the awarding of the Contract. In such instances, deviations may be made pending acceptance by the UCHC Agent or the Owner's representative.

- C. Where any specific material, process or method of construction or manufactured article is specified by reference to the catalog number of a manufacturer, the Specifications are to be used as a guide and are not intended to take precedence over the basic duty and performance specified or noted on the Drawings. In all cases, the Mechanical Contractor shall verify the duty specified with the specific characteristics of the equipment offered for review. Equipment characteristics are to be used as mandatory requirements where the Contractor proposes to use an acceptable equivalent.
- D. If material or equipment is installed before it is reviewed, the Contractor shall be liable for its removal and replacement at no extra charge to the Owner if, in the opinion of the UCHC Agent, the material or equipment does not meet the intent of, or standard of quality implied by, the Drawings and Specifications.
- E. Failure on the part of the UCHC Agent to reject shop drawings or to reject work in progress shall not be interpreted as acceptance of work not in conformance with the Drawings and/or Specifications. Work not in conformance with the Drawings and/or Specifications shall be corrected whenever it is discovered.

#### 1.10 EQUIPMENT DEVIATIONS/SUBMITTALS

- A. Where the Contractor proposes to deviate (substitute or provide an equivalent) from the equipment or materials as hereinafter specified, he shall do so by making a request in writing. The Contractor shall state in

his request whether it is a substitution or an equivalent to that specified and the amount of credit or extra cost involved. A copy of said request shall be included in the Mechanical Base Bid with manufacturer's equipment cuts. The Base Bid shall be based on using the materials and equipment as specified with no exceptions.

- B. In these Specifications and on the accompanying Drawings, one or more makes of materials, apparatus or appliances may have been specified for use in this installation. This has been done for convenience in fixing the standard of workmanship, finish and design required for installation. The details of workmanship, finish and design, and the guaranteed performance of any material, apparatus or appliance which the Contractor desires to deviate for those mentioned herein shall also conform to these standards.
- C. Where no specific make of material, apparatus or appliance is mentioned, any first-class product made by a reputable manufacturer may be submitted for the Engineers review.
- D. Where two or more names are given as equivalents, the Contractor must use the specified item or one of the named equivalents. Where one name only is used and is followed by the words "or acceptable equivalent", the Contractor must use the item named or he may apply for an equipment deviation through the prescribed manner in accordance with Item 1.09, Paragraph B.
- E. Equipment, material or devices submitted for review as an "equivalent" shall meet the following requirements:
  - The equivalent shall have the same construction features such as, but not limited to:
    - Material thickness, gauge, weight, density, etc.
    - Welded, riveted, bolted, etc., construction
    - Finish, undercoating, corrosion protection
  - The equivalent shall perform with the same or better operating efficiency.
  - The equivalent shall be locally represented by the manufacturer for service, parts and technical information.
  - The equivalent shall bear the same labels of performance certification as is applicable to the specified item, such as AMCA or ARI labels.
- F. Where the Contractor proposes to use an item of equipment other than specified or detailed on the Drawings which requires any redesign of the structure, partitions, foundations, piping, wiring or any other part of the mechanical, electrical or architectural layout, all such redesign and all new drawings and detailing required therefore shall be prepared by the Designers of Record at the expense of the Contractor and at no additional cost to the Owner.
- G. Where such accepted deviation or substitution requires a different quantity and arrangement of piping, ductwork, valves, pumps, insulation, wiring, conduit and equipment from that specified or indicated on the Drawings, the Contractor shall, with the acceptance by the UCHC Agent, furnish and install any such additional equipment required by the system at no additional cost to the Owner, including any costs added to other trades due to the substitution.
- H. The UCHC Agent shall determine if an "acceptable equivalent" to a manufacturer listed in the Specifications is considered acceptable.
- I. All mechanical submittals shall be submitted using the following format. If equipment to be used on project is as specified (manufacturer, model #, etc. the same) then no cut sheets are required. If equipment to be used on project is different than specified, then a cut sheet of equipment to be used shall be submitted along with an explanation of the difference between specified equipment and equipment requested to be used and the reason why the deviation. Submittals will only be accepted on a 8.5 X 11 sheet of paper with three (3) columns with the following headings: "SPECIFIED EQUIPMENT DISCRPTION", "EQUIPMENT REQUESTED DISCRPTION", AND "REASON FOR DIFFERENCE". If contractor is using equipment as

specified, he would list equipment under "Specified Equipment Description" and under "Equipment Requested Description" he would put "Same as Specified" and continue with next piece of equipment.

#### 1.11 CHANGES IN WORK

- A. A Change Order is a written order to the Contractor signed by the Owner and the Architect, issued after Contracts have been awarded, authorizing a change in the work or an adjustment in the Contract sum or the Contract time. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract sum or the Contract time.
- B. All changes in the work shall follow the recommendations of the AIA "General Conditions of the Contract for Construction", Article 12.

#### 1.12 MANUFACTURER'S IDENTIFICATION

- A. All component parts of each item of equipment or device shall bear the manufacturer's nameplate giving name of manufacturer, description, size, type, serial and model number, electrical characteristics, etc., in order to facilitate maintenance or replacement. The nameplate of a Subcontractor or distributor will not be acceptable.
- B. All material and equipment for the electrical portion of the mechanical systems shall bear the label of or be listed by UL, or other accredited authoritative agencies or testing organizations approved by the authority having jurisdiction.

#### 1.13 SHOP DRAWINGS

- A. The Contractor shall submit for review detailed shop drawings of all equipment and material specified in each section and coordinated ductwork layouts. No material or equipment may be delivered to the job site or installed until the Contractor has received shop drawings for the particular material or equipment which have been properly reviewed.
- B. Shop drawings shall be submitted within 60 days after award of Contract before any material or equipment is purchased. The Contractor shall submit for review copies of all shop drawings to be incorporated in the Mechanical Contract. Refer to the General Conditions and Supplementary General Conditions for the quantity of copies required for submission. Where quantities are not specified, provide seven (7) copies for review.
- C. Provide shop drawings for all devices specified under equipment specifications for all systems including fire alarm, sprinkler, clock, controls, etc., or where called for elsewhere in the Specifications. Shop drawings shall include manufacturers' names, catalog numbers, cuts, diagrams and other such descriptive data as may be required to identify and accept the equipment. A complete list in each category (example: all fixtures) 'of all shop drawings, catalog cuts, material lists, etc., shall be submitted to the UCHC Agent at one time. No consideration will be given to a partial shop drawing submittal.
- D. Submittals shall be marked with the trade involved, i.e., HVAC, plumbing, fire protection, etc. when the submittal could involve more than one trade, e.g., valves, piping, etc.

Where multiple quantities or types of equipment are being submitted, provide a cover sheet (With a list of contents) on the submittal identifying the equipment or material being submitted.

- E. Failure to submit shop drawings in ample time for review shall not entitle the Contractor to an extension of Contract time. No claim for extension by reason of such default will be allowed, nor shall the Contractor be entitled to purchase, furnish and/or install equipment which has not been reviewed by the UCHC Agent.

- F. The Contractor shall furnish all necessary templates, patterns, etc., for installation work and for the purpose of making adjoining work conform; furnish setting plans and shop details to other trades as required.
- G. Acceptance rendered on shop drawings shall not be considered as a guarantee of measurements or building conditions. Where drawings are reviewed, review does not mean that drawings have been checked in detail; said approval does not in any way relieve the Contractor from his responsibility or necessity of furnishing material or performing work as required by the Contract Drawings and Specifications. Verify available space prior to submitting shop drawings.
- H. Acceptance of shop drawings shall not apply to quantity nor relieve Contractor of his responsibility to comply with intent of Drawings and Specifications.

Acceptance of shop drawings is final and no further changes will be allowed without the written consent of the UCHC Agent.

- J. Shop drawing submittal sheets which may show items that are not being furnished shall have those items crossed off to clearly indicate which items will be furnished.
- K. Bidders shall not rely on any verbal clarification of the Drawings and/or Specifications. Any questions shall be referred to the UCHC Agent at least five (5) working days prior to Bidding to allow for issuance of an Addendum.

#### 1.14 RECORD DRAWINGS

- A. Maintain at the job site a record set of Mechanical Drawings on which any changes in location of equipment, piping, ducts, valves, clean outs and access panels shall be recorded. These shall be clearly marked for Record Drawings- on a clean set of reproducible mylar sepias at the completion of the work and turned over to the UCHC Agent.

#### 1.15 MATERIALS AND WORKMANSHIP

- A. All materials and apparatus required for the work, except as otherwise specifically indicated, shall be new, of first-class quality, and shall be furnished, delivered, erected, connected and finished in every detail and be so selected and arranged as to fit properly into the building spaces. Where no specific type or quality of material is given, a first-class standard article as accepted by industry standards shall be furnished.
- B. The Contractor shall furnish the services of an experienced superintendent who shall be constantly in charge of the installation of the work together with all skilled workmen, fitters, metal workers, welders, helpers and laborers required to unload, transfer, erect, connect, adjust, start, operate and test each system.
- C. Unless otherwise specifically indicated on the Drawings or Specifications, all equipment and materials shall be installed with the acceptance of the UCHC Agent and in accordance with the recommendations of the manufacturer. This includes the performance of such tests as the manufacturer recommends.
- D. All labor for installation of mechanical systems shall be performed by experienced, skilled tradesmen under the supervision of a licensed journeyman foreman. All work shall be of a quality consistent with good trade practice and shall be installed in a neat, workmanlike manner. The UCHC Agent reserves the right to reject any work which, in his opinion, has been installed in a substandard, dangerous or unserviceable manner. The Contractor shall replace said work in a satisfactory manner at no extra cost to the Owner.

#### 1.16 PROTECTION OF MATERIALS AND EQUIPMENT

- A. Work under each Section shall include protecting the work and material of all other Sections from damage by work or workmen and shall include making good all damage thus caused.
- B. The Contractor shall be responsible for work and equipment until the facility has been accepted by the Owner. Protect work against theft, injury or damage and carefully store material and equipment received on site which is not immediately installed. Close open ends of work with temporary covers or plugs during construction to prevent entry of foreign material.
- C. Work under each Section includes receiving, unloading, uncrating, storing, protecting, setting in place and completely connecting equipment supplied under each Section. Work under each Section shall also include exercising special care in handling and protecting equipment and fixtures, and shall include the cost of replacing any of the equipment and fixtures which are missing or damaged.
- D. Equipment and material stored on the job site shall be protected from the weather, vehicles, dirt and/or damage by workmen or machinery. Insure that all electrical or absorbent equipment or material is protected from moisture during storage.

#### 1.17 BASES AND SUPPORTS

- A. Unless otherwise specifically noted, the Mechanical Contractor shall furnish all necessary supports, rails, framing, bases and piers required for all equipment furnished under this Division.
- B. Unless otherwise indicated in individual trade Sections, pumps, compressors and other rotating machinery shall be mounted on a minimum of four (4") inch high concrete pads. All pads shall be extended six (6") inches beyond machine base in all directions with top edge chambered. Shop drawings of all foundations and pads shall be submitted to the UCHC Agent for review before they are constructed. The Mechanical Contractor shall furnish to the all required dimensional and necessary loading information.
- C. Construction of foundations, supports, pads, bases and piers where mounted on the floor shall be of the same finish quality as the adjacent and surrounding flooring material.
- D. Unless otherwise shown, all equipment shall be securely attached to the building structure in an acceptable manner. Attachments shall be of a strong and durable nature; any attachments that are insufficient in the opinion of the UCHC Agent, shall be replaced as directed without extra cost to the Owner.
- E. All equipment supports shall be designed and constructed such that the equipment will be capable of resisting both vertical and horizontal movement. The equipment shall be positively anchored to the bases or supports to resist vertical movement. The equipment and its supports shall be provided with suitable restraints to resist horizontal movement from any direction as dictated by applicable seismic Codes.

#### 1.18 SLEEVES, INSERTS AND ANCHOR BOLTS

- A. The Mechanical Contractor shall provide, set in place and be held responsible for the location of all sleeves, inserts and anchor bolts required for the work. In the event that failure to do so requires cutting and patching of finished work, it shall be done at the Mechanical Contractors expense.

It is the responsibility of the Mechanical Contractor to furnish cast-in-place sleeves, inserts and anchors in sufficient time to be installed during initial concrete pours. Where job schedules make this impossible, coordinate and obtain acceptance from the Structural UCHC Agent for alternate installation methods.

- B. All pipes and conduits passing through floors, walls or partitions shall be provided with sleeves having an inside diameter one (1") inch larger than the outside diameter of the pipe, conduit or insulation enclosing the pipe.

Hot, cold or chilled water or high pressure steam piping shall run with insulation continuous through sleeve.

- C. Penetrations through fire-rated walls, ceilings and floors (except slab on grade) in which piping or ducts pass shall be filled solidly with acceptable fire-stopping material.
- D. When ducts, piping or conduit penetrate the floor of a mechanical room located above an occupied space, such penetrations shall be made completely watertight, such that a liquid leak shall not pass through the penetration.

#### 1.19 CUTTING AND PATCHING

- A. All cutting and patching shall be done by the Contractor. The Contractor shall furnish sketches showing the location and sizes of all openings, chases, etc., required for the installation of work.
- B. Work under this Division shall include furnishing, locating and setting inserts and/or sleeves required before the floors and walls are built or be responsible for cutting, drilling or chopping where sleeves and inserts were not installed or correctly located. The Contractor shall do all drilling required for the installation of hangers.
- C. Exercise extreme caution when core drilling or punching openings in concrete floor slabs in order to avoid cutting or damaging structural members. No structural members shall be cut without the written acceptance of the Structural UHC Agent and all such cutting shall be done in a manner directed by him.

#### 1.20 SCAFFOLDING, RIGGING, HOISTING

- A. The Contractor shall furnish all scaffolding, rigging, hoisting and services necessary for erection and delivery into the premises any equipment and apparatus furnished under this Division. Remove same from premises when no longer required.

#### 1.21 EXCAVATION AND BACKFILLING

- A. Excavation and backfilling shall be carried out under Division 2 of the Specifications, unless otherwise indicated in individual trade Sections.
- B. It is the responsibility of the Mechanical Contractor to coordinate sizes, depths, fill and bedding requirements with the Division 2 Contractor and any other excavation work required under this Division.

#### 1.22 WATERPROOFING

- A. Where any work pierces waterproofing, including waterproof concrete and floors in wet areas, the method of installation shall be reviewed by the UHC Agent before work is done. The Contractor shall furnish all necessary sleeves, caulking and flashing required to make openings absolutely watertight.

#### 1.23 ACCESSIBILITY AND ACCESS PANELS

- A. The Contractor shall be responsible for the sufficiency of the size of shafts and chases, the adequate thickness of partitions, and the adequate clearance in double partitions and hung ceilings for the proper installation-of the work.
- B. Locate all equipment which must be serviced, operated or maintained in fully accessible positions. Equipment shall include, but not be limited to: motors, controllers, coil, valves, switchgear, drain points, etc. Access doors shall be furnished if required for better accessibility. Minor deviations from the Drawings may

be made to allow better accessibility, but changes of magnitude or which involve extra cost shall not be made without the acceptance of the UCHC Agent.

- C. Access doors in walls, ceilings, floors, etc., shall be furnished by the appropriate Subcontractor and installed by the Contractor. It is the responsibility of the Mechanical Contractor to coordinate and provide information regarding the sizes and quantities of access doors required for his work. The Contractor shall arrange his work in such a manner as to minimize the quantity of access doors required, such as grouping shutoff valves in the same area. Where possible, locate valves in already accessible areas, such as lay-in ceilings, etc. Minimum access door size is 18" X 18".
- D. On a clean set of prints, the plumbing, HVAC and fire protection Contractors shall mark in red pencil the location of each required access door, including its size and fire rating (if any), and shall submit the print to the Architect for review before access doors are purchased or installed.
- E. Upon completion of the Project, the Contractor shall physically demonstrate that all equipment and devices installed have been located and/or provided with adequate access panels for repair, maintenance and/or operation. Any equipment not so furnished shall be relocated or provided with additional access panels by the installing Contractor at no additional cost to the Owner.
- F. Permanent ladders for access to equipment when shown on Plans shall be furnished and installed by the Contractor.

#### 1.24 TEMPORARY OPENINGS

- A. The Contractor shall ascertain from an examination of the Drawings whether any special temporary openings in the building will be required for the admission of apparatus provided under this Division and shall notify the Contractor or the Construction Manager accordingly. In the event of failure of the Contractor to give sufficient notice in time to arrange for these openings during construction, the Contractor shall assume all costs of providing such openings thereafter.

#### 1.25 SHUTDOWNS

- A. When installation of a new system requires the temporary shutdown of an existing operating system, the connection of the new system shall be performed at such time as designated by the UCHC Agent.
- B. The UCHC Agent and the Owner shall be notified of the estimated duration of the shutdown period at least ten (10) days in advance of the date the work is to be performed.
- C. Work shall be arranged for continuous performance whenever possible. The Contractor shall provide all necessary labor, including overtime if required, to assure that existing operating services will be shut down only during the time actually required to make necessary connections.

#### 1.26 TAGS AND CHARTS

- A. Each valve and piece of apparatus under this Division shall be provided with suitable brass or laminated plastic tags securely fastened with brass chains, screws or rivets. Equipment shall be numbered with laminated plastic tags or neatly stenciled letters two (2") inches high using designations in equipment schedules and/or shall conform to a directory indicating number, location and use of each item. Directories shall be prepared under each Section and provided to the UCHC Agent for approval.

#### 1.27 ESCUTCHEONS

- A. The Contractor shall provide escutcheons on pipes wherever they pass through floors, ceilings, walls or partitions in visible locations.

#### 1.28 COLOR-CODING AND PIPING IDENTIFICATION

- A. All piping, controls, tanks, tubing, etc., shall be color-coded for quick identification in conformance with the following: Oxygen – Green; Res. Compressed Air – Yellow; medical Suction – White; Nitrous Oxide – Blue; Nitrogen – Black.
- B. All piping shall be color-coded with semi-rigid plastic identification markers, Seton Setmark Type “SNA”, Type “STR” or equivalent. Direction of flow arrows shall be included on each marker. On all horizontal pipe runs, the markers shall be installed 25 feet apart or less. Also, locate markers at wall penetrations, valves, changes in direction and at branch main take-offs.
- C. The background color of each identification marker shall also be color coded in conformance with ANSI A13.1.
- D. All identification markers are subject to UCHC Agents review prior to installation. See individual trade Sections for further requirements.

#### 1.29 PAINTING

- A. All finish painting in completed areas shall be performed under Division 9 of the Specifications.
- B. All materials shipped to the job site under this Division, such as grilles, registers and/or radiation covers, shall have standard manufacturer’s finish, unless otherwise specified.
- C. The Sheet Metal Contractor shall paint the interior of all ducts wherever the interior of the duct can be seen through a register or louver. Paint shall be flat black, rust preventative type.
- D. All exterior piping, fittings and hangers shall be properly primed and finished with a minimum of two (2) coats of high grade exterior enamel.
- E. All HVAC piping in Mechanical Equipment Room shall be painted with a suitable paint. Colors shall be in accordance with ANSI Standard A 13. 1.

#### 1.30 PIPE EXPANSION

- A. All pipe connections shall be installed to allow for freedom of movement of the piping during expansion and contraction without springing. Swing joints, expansion loops and expansion joints with proper anchors and guides shall be provided by the Contractor where necessary and/or where shown on the Drawings. Anchors and guides shall be subject to the review of the UCHC Agent. Pay particular attention to plastic piping with high coefficients of expansion.

Consideration of required seismic lateral restraints shall be given when anchoring piping and making provision for expansion.

#### 1.31 ELECTRICAL CONNECTIONS

- A. Unless otherwise specified, all wiring shall be furnished and installed under Division 16.



- B. All power wiring shall be furnished and installed complete from power source to motor or equipment junction box including power wiring through the starters. All starters not factory mounted on equipment shall be installed under Division 16.
- C. When specified, the Contractor shall furnish and install all temperature control wiring, interlock wiring and equipment control wiring for the equipment furnished under this Division.
- D. The Contractor shall furnish starters to the Electrical Contractor where specified. The Contractor shall provide and be responsible for the heaters in all starters that he furnishes.

### 1.32 QUIET OPERATION

- A. Equipment and material used in the various systems described herein shall not produce a sound level greater than 55 decibels in the area served. The sound level shall be observed on the "A" weighting network of a sound level or sound survey meter. The ASHRAE "Guide and Data Book" provides a means to determine sound level of mechanical equipment when the total of background plus equipment sound levels exceeds the minimum acceptable equipment sound level.
- B. If objectionable noises or vibrations are produced and transmitted to occupied portions of the building by apparatus, piping, ducts or other parts of the mechanical work, the Contractor shall make such changes or additions as necessary without extra cost to the Owner.

### 1.33 MAINTENANCE

- A. The Contractor shall provide the necessary skilled labor to assure the proper operation and to provide all required current and preventative maintenance for all equipment and controls provided under this Division until final acceptance of the building by the Owner. The Contractor shall not assume acceptance of the building by the Owner until he receives written notification.
- B. The Contractor shall receive calls for any and all problems experienced in the operation of the equipment provided under this Division and he shall take steps to immediately correct any deficiencies that may exist.
- C. The Contractor shall provide a check list and shall put a copy of it in the boiler or main mechanical room. The check list shall itemize each piece of equipment furnished under his Section.

The Contractor shall certify on this check list that he has examined each piece of equipment and that, in his opinion, it is operating as intended by the manufacturer, it has been properly lubricated, and that all necessary current and preventative maintenance has been performed as recommended by the manufacturer and by good and accepted practice.

- D. The Contractor shall check all controls in the building to ascertain that they are functioning as designed. This shall apply to all thermostats" aquastats, humidistats, freeze-stats and fire-stats, etc. This portion of the work shall I be performed by the Contractor who installed the controls.
- E. During construction, the Contractor shall ensure that all filters are in place on all equipment. If the equipment is operated during construction, strict attention shall be paid to maintaining clean and effective filters. Filters shall be new and clean when the system testing and balancing takes place. The Contractor shall bear the cost of all filters and media during construction until final acceptance by the Owner. This requirement shall apply equally to fluid filters and strainers.
- E. Where normal preventative maintenance for any piece of equipment requires special tools, the Contractor shall furnish the appropriate tools for that piece of equipment (i.e., special filter removal hooks, valve wrenches, etc.).

- F. All existing ductwork under the footprint of this project and back to the main duct shall be cleaned as part of this project by the contractor.  
All existing heating, cooling and reheat coils under the footprint of this project and back to the main duct shall be cleaned (wire brushed) as part of this project by the contractor  
All existing reheat valves and controls providing conditioned air for this project shall be replaced as part of the project by the contractor.

#### 1.34 REFRIGERANT RECLAMATION

- A. This Contractor shall provide all required equipment and labor to reclaim all chlorofluorocarbon refrigerant liquids and vapors from all refrigeration equipment being demolished under this Contract, including all existing freon storage tanks and piping and chillers. When work on an existing system would otherwise release refrigerant to the environment, this Contractor shall reclaim all refrigerant before commencing with such work.

#### 1.35 DEMOLITION

- A. All required demolition work shall be performed by the respective mechanical trades. All demolition work shall be performed in a neat and orderly fashion.
- B. After piping, ductwork, equipment, etc., has been removed, neatly cap remaining ductwork and piping, and insulate caps to match the existing adjacent ductwork and piping. In finished areas, all ductwork and piping shall be cut back to a concealed location, i.e., within walls, above ceilings, etc., before capping.
- C. Before submitting his Bid, the Contractor shall visit the site with Architectural and Mechanical Plans in hand, and shall inspect all existing systems to determine the extent of demolition work involved. Particular attention is drawn to the removal of existing walls or portions of existing walls. In those areas, all exposed and concealed piping, ductwork, equipment, etc., running across or through affected areas shall be removed as required. Piping and ductwork shall then be either capped, or, if required for the proper continuing operation of an existing system to remain, piping and ductwork shall be rerouted around the affected areas and reconnected as required.
- D. In general, it shall be the responsibility of the Mechanical Contractor to remove demolished equipment, piping, ductwork, etc., from the site and properly dispose of it. If the Owner shall so request, however, the Contractor shall turn over demolished equipment, etc., to the Owner for the Owner's use.

#### 1.36 AIR ELIMINATION

- A. The Contractor shall be responsible for bleeding all air from closed water piping systems after the system has been filled, and thereafter rebleeding as often as required to completely eliminate all air from the system.
- B. Where work on an existing piping system has allowed air to enter that system, the Contractor shall also bleed that system even if no piping work was done in the area where air has developed.
- C. Where air cannot be bled from any piping due to the absence of an air vent, the Contractor shall install a manual air vent in locations required to successfully bleed such air.
- D. Where the piping layout would require an air vent in an inaccessible location, the Contractor shall install an extended 1/4-inch copper bleed line and petcock to an accessible location such as a closet, mechanical room, above lay-in ceiling, etc.

#### 1.37 LUBRICATION

- A. All equipment installed under this Contract having moving parts and requiring lubrication shall be properly lubricated according to manufacturer's recommendations prior to testing and operation. Any such equipment discovered to have been operated before lubrication by the Contractor is subject to rejection and replacement at no additional cost to the Owner. Units furnished with sealed bearings are exempted.
- B. The Contractor shall furnish and install, as appropriate on all equipment requiring lubrication, Zerk pressure gun grease fittings or sight gravity-feed oilers equipped with shutoff and needle valve adjustment. Units furnished with sealed bearings and lifetime lubrication are exempted. All fittings and oilers are to be fully accessible for lubrication with equipment which does not require special adapters. Where fittings would be otherwise inaccessible, furnish and install extended grease lines.

#### 1.38 CLEANING

- A. The Contractor shall thoroughly clean and flush all piping, ducts and equipment of all foreign substances, oils, burrs, solder, flux, etc., inside and out before being placed in operation.
- B. If any part of a system should be stopped or damaged by any foreign matter after being placed in operation, the system shall be disconnected, cleaned and reconnected wherever necessary to locate and/or remove obstructions. Any work damaged in the course of removing obstructions shall be repaired or replaced when the system is reconnected at no additional cost to the Owner.
- C. During the course of construction, all ducts and pipes shall be capped in an acceptable manner to insure adequate protection against the entrance of foreign matter.
- D. Upon completion of all work under the Contract, the Contractor shall remove from the premises all rubbish, debris and excess materials left over from his work. Any oil or grease stains on floor areas caused by the Contractor shall be removed and floor areas left clean.
- E. All existing ductwork under the footprint of this project and back to the main duct shall be cleaned as part of this project by the contractor.  
All existing heating, cooling and reheat coils under the footprint of this project and back to the main duct shall be cleaned (wire brushed) as part of this project by the contractor  
All existing reheat valves and controls providing conditioned air for this project shall be replaced as part of the project by the contractor.

#### 1.39 OPERATING INSTRUCTIONS

- A. Upon completion of all work and tests, the Contractor shall furnish the necessary skilled labor and helpers for operating his system and equipment for a period specified under each applicable Section of this Division. **During this period, the contractor shall have a factory authorized representative, for each piece of equipment, fully instruct the Owner or the Owner's representative in the operation, adjustment and maintenance of all equipment furnished.** The Contractor shall give at least seven (7) days notice to the Owner and the UCHC Agent in advance of this period.
- B. The Contractor shall furnish to the Contractor for delivery to the UCHC Agent four (4) complete bound sets of typewritten or blueprinted instructions for operating and maintaining all systems and equipment included in this Division. All instructions shall be submitted in draft for review prior to final issue. Manufacturers advertising literature or catalogs will not be acceptable for operating and maintenance instruction.
- C. The Contractor, in the above-mentioned instructions, shall include the maintenance schedule for the principal items of equipment furnished under this Division.
- D. The appropriate Contractor shall physically demonstrate procedures for all routine maintenance of all equipment furnished under each respective Section to assure accessibility to all devices.

- E. An authorized manufacturer's representative shall attest in writing that the equipment has been properly installed prior to startup of any major equipment. The following equipment will require this inspection: pumps; air conditioning equipment, controls, air handling equipment, compressors, boilers etc. These letters will be bound into the operating and maintenance books.
- F. Refer to individual trade Sections for any other particular requirements related to operating instructions.

#### 1.40 ADJUSTING AND TESTING

- A. After all the equipment and accessories to be furnished are in place, they shall be put in final adjustment and subjected to such operating tests so as to assure the UCHC Agent that they are in proper adjustment and in satisfactory, permanent operating condition.
- B. Where requested by the UCHC Agent, a factory-trained service representative shall inspect the installation and assist in the initial startup and adjustment to the equipment. The period of these services shall be for such time as necessary to secure proper installation and adjustments. After the equipment is placed in permanent operation, the service representative shall supervise the initial operation of the equipment and instruct the personnel responsible for operation and maintenance of the equipment. The service representative shall notify the Contractor in writing, that the equipment was installed according to manufacturers recommendations and is operating as intended by the manufacturer.

#### 1.41 GUARANTEES/WARRANTIES

- A. The Contractor shall guarantee all material and workmanship under these Specifications and the Contract for a period of one (1) year from the date of final acceptance by Owner.
- B. During this guarantee period, all defects developing through faulty equipment, materials or workmanship shall be corrected or replaced immediately by this Contractor without expense to the Owner. Such repairs or replacements shall be made to the Engineers satisfaction.
- C. Contractor shall provide name, address, and phone number of all contractors and subcontractors and associated equipment they provided
- D. A 15 minute telephone response time and a 2 hour on site response time is required for all equipment service. All equipment service shall be performed by factory trained technicians.

END OF SECTION

**SECTION 15050**  
**BASIC MECHANICAL MATERIALS AND DESIGN PARAMETERS**

**PART 1 - GENERAL**

1.01 GENERAL PROVISIONS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specification Sections, Section 15010 - General Conditions for Mechanical Trades and Section 15050 - Basic Materials and Methods, apply to the work specified in this Section.
- B. The Drawings of other trades (Architectural, Landscape, Civil, Electrical, Plumbing) shall be examined for coordination and familiarity of work with other Contractors. Any duplication or omission of provisions in this project should be brought to the attention of the UCHC Agents prior to Bidding.

1.02 DESCRIPTION

- A. It is the intent of this Section of the Specifications to establish a standard of quality and performance characteristics for basic materials and installation methods used in building mechanical systems.

1.03 GENERAL REQUIREMENTS

- A. This contract is for all labor, materials and equipment required for installation. The system shall be complete and finished in all respects, tested and ready for operation. Work shall include calibration of equipment with factory settings. All materials, equipment and apparatus shall be new and of first class quality.
- B. Any apparatus, appliance, material or work not shown on Drawings but mentioned in the Specifications, or vice versa, or any incidental accessories or minor details not shown but necessary to make the work complete and perfect in all respects and ready for operation, even if not specifically mentioned, shall be provided by the Contractor without additional expense to the UCHC Agent.
- C. Before submitting his Bid, the Contractors shall visit the site and become thoroughly familiar with all existing conditions under which his work will be installed. This Contract includes all modifications of existing systems required for the installation of new equipment. This Contract includes all necessary offsets, transitions and modifications required to install all new equipment in existing spaces. All new and existing equipment and systems shall be fully operational under this Contract before the job is considered complete. The Contractors shall be held responsible for any assumptions he makes, any omissions or errors he makes as a result of his failure to become fully familiar with the existing conditions and the Specifications of all subcontracted trades.
- D. Location of all existing piping shown on floor plans is based on the best available information. The Contractor shall verify all dimensions and locations of existing piping in the field and adjust as necessary.
- E. The Contractor shall coordinate with the UCHC Agent the shut down of all existing systems (steam and condensate, chilled water, condenser water, etc.) prior to commencement of construction so that any disruptions to active piping systems are kept to a minimum.
- F. Certain items of existing equipment and piping or ductwork may be indicated for removal or relocation. Items noted for removal shall be disconnected and turned over to the UCHC Agent or disposed of by the

Contractor if the UCHC Agent so requests. If instructed to dispose of items, the Contractor shall remove the items from the premises and dispose of them in a safe, legal and responsible manner and location. Items noted for relocation are intended for reuse in another location as designated on the Drawings. It shall be the responsibility of the Contractor to remove the material from its present location, store the material in a safe place and reinstall the material in its new location. Questions regarding the suitability of the material or equipment shall be brought to the attention of the UCHC Agent in writing.

- G. Wherever a particular piece of equipment, device or material is specifically indicated on the Drawings by model number, type, series or other means, that specification shall take precedence over equipment or materials specified herein. For example: If a particular switch is specified on the Drawings, its specification takes precedence over switch specified herein.
- H. All insulation shall be continuous through walls, floors, sleeves, plenums and other openings, except for fire rated floors and walls. Vertical hot water risers in exterior walls and inside partitions shall be insulated completely.

#### 1.04 IDENTIFICATION

- A. All basic materials such as piping, tubing, sheet metal, insulation, etc., shall have clearly printed on the material the manufacturer's name, the material grade, gauge, thickness, type or any other pertinent data to identify and/or specify the required methods of attachment, welding, etc. Unmarked material will not be accepted.

#### 1.05 RIGGING

- A. The Contractor shall include the cost and coordination of all rigging efforts in his bid.

#### 1.06 VIBRATION CONTROL

- A. All mechanical equipment shall be mounted on or suspended from acceptable and specified vibration control equipment. Where indicated, piping and ductwork shall be installed with vibration isolating hangers or supports.
- B. All vibration isolators used for mounting equipment and/or piping or ductwork shall incorporate seismic snubbers to resist horizontal movement in any direction and vertical limit stops to restrict vertical movement of equipment. In lieu of this, separate seismic snubbers may be installed adjacent to vibration isolators.
- C. Floor-mounted equipment shall be erected on reinforced, concrete housekeeping pads. Housekeeping pads shall be anchored to floor slab or they shall be part of the original floor pour. Where vibration isolating equipment is used, these pads shall be extended to support the isolation system. See Drawings for sizes and heights.
- D. All vibration isolation systems shall be guaranteed to have the static deflections -as specified and indicated on the Drawings. The vibration isolation system shall be installed in accordance with the manufacturer's instructions.
- E. All vibration isolation systems exposed to a corrosive environment shall be weatherproofed in the following manner: All steel parts shall be hot-dipped galvanized; all bolts shall be cadmium-plated; all springs shall be cadmium-plated and neoprene-coated.

- F. All vibration isolation equipment including mountings, hangers, structural steel bases, welded concrete pouring forms and flexible pipe connectors shall be furnished by a single manufacturer of vibration isolation equipment. Acceptable manufacturers:

Mason Industries, Inc.

Vibration Mountings & Controls, Inc.

Korfund Dynamics Corp.

Consolidated Kinetics Corp.

Vibration Eliminator Co.

Amber-Booth

- G. Vibration control equipment types as required and/or as listed in Vibration Isolator Schedule shall be as specified below:

Type "A" - Double-deflection, neoprene-in-shear floor mounts with steel top and base plates imbedded in neoprene. Base plate shall have bolting flange and top plate shall have a threaded bolt hole. Minimum static deflection = 0.40 inch. Mounts shall be color-coded for identification of load capacity. Mason Industries Type "ND" or equivalent.

Type "B" - Freestanding, single or multiple spring floor mount with ¼-inch thick, ribbed neoprene pad bonded to the steel base plate. Mount shall have bolt holes in base plate, and shall have leveling and attachment bolts. Mount shall deflect evenly vertically or horizontally. Springs shall have 50% extra capacity beyond rated load. Springs shall be color-coded for identification of load capacity. Static deflection on shall be 1 inch, unless otherwise specified in Vibration Isolator Schedule. Mason Industries Type "SHFH" or equivalent.

Type "C" - Freestanding, single or multiple spring mounts with cast semi-steel spring housing, neoprene. In padded base and top plate, base plate flange and adjustable, neoprene, horizontal thrust snubbers for critical vibration control applications. Mason Industries Type "CS" or equivalent.

Type "D" - Seismic-rated, single or multiple spring mount with neoprene pad bonded to base plate. Mount shall have bolt holes in base plate and neoprene vertical limit stops, spin—restraint housing, leveling bolts Type "C" and neoprene spin- cups. Mason Industries Type "SLR", "SLRW" or equivalent.

Type "E" - Double-deflection, neoprene-in-shear hanger with steel housing and color-coded neoprene element for identification of load capacity. Minimum static deflection = 0.40 inch. Mason Industries Type "HD" or equivalent.

Type "F" - Combination neoprene-in-shear and spring hanger in steel housing. Neoprene element and spring shall be color coded for identification of load capacity. Minimum static deflection shall be 1.10 inch, unless otherwise specified. Mason Industries Type "30N" or equivalent.

Type "G" - "Waffle" pad, minimum ¼-inch thick, 40 durometer black neoprene.- Mason Industries Type "W" or equivalent.

Type "H" - Composite acoustical pad consisting of ½- inch thick cork sandwiched between two (2) ¼ inch thick, neoprene waffle pads. Mason Industries Type "NK" or equivalent.

Type "J" - Seismic snubbers consisting of rigid interlocking steel members restrained by replaceable shock absorbent rubber or neoprene type materials with an air gap of between 1/8 inch and ¼ inch. The snubbers shall be firmly attached to the equipment and the base to restrict all horizontal movement. Mason Type Z- 1011, Z- 1225 or equivalent.

Any other special types of isolation equipment, such as vibration rails, inertia bases, etc., shall be as indicated, specified or detailed on the Drawings.

#### 1.07 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Upon completion of all work and all tests, the Contractor shall fully instruct the UCHC Agent or his representative in the operation, adjustment and maintenance of all systems and equipment furnished. **During this period, the contractor shall have a factory authorized representative, for each piece of equipment, fully instruct the Owner or the Owner's representative in the operation, adjustment and maintenance of all equipment furnished.** The Contractor shall give at least seven (7) days notice to the UCHC Agent in advance of this period so that the UCHC Agent can plan to be present.
- B. The HVAC Contractor shall prepare six (3) copies of a complete maintenance and operating instructions manual, bound in booklet form. Manual shall include brief operating descriptions of each system and complete startup and shutdown procedures for each system component. A complete preventive maintenance schedule shall be included for each component: fans; pumps; valves; cooling tower cell, chiller, etc..
- C. Include in the manual, a tabulated equipment schedule for all equipment. Schedule shall include pertinent data such as: make, model number, serial number, voltage, normal operating current, belt size, filter quantities and sizes, bearing number, etc. Schedule shall include maintenance to be done and frequency.
- D. Maintenance and instruction manuals shall be submitted to the UCHC Agent at the same time as the seven (7) day notice is given prior to the instruction period.

#### 1.08 FILTERS AND STRAINERS

- A. Any equipment which operates with filters or strainers shall have filters and strainers installed at all times.
- B. In no case shall any unit heater or any other equipment having filters be run without a clean filter in place. This applies equally and especially to systems operated during construction for temporary heating or cooling or for testing. This also applies to high efficiency filters, where specified. In no case shall high efficiency filters be operated without suitable pre filters in place.
- C. When HVAC systems are operated for space heating and/or cooling during construction the Contractor or Construction Manager shall bear the cost of furnishing filters for equipment being used. The HVAC Contractor shall maintain and install filters in his equipment during construction.
- D. In hydronic systems, strainers shall be maintained during system operation and testing. If a coil or heat exchanger should plug or foul due to lack of filter or strainer maintenance then that equipment shall be cleaned and renewed or replaced at no cost to the UCHC Agent.
- E. When equipment and systems are officially turned over to the UCHC Agent, all equipment shall be clean and have clean, new filters installed.

END OF SECTION



## **SECTION 15300 FIRE PROTECTION SYSTEMS**

### **PART I - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specification Sections, Section 15010 - General Conditions for Mechanical Trades and Section 15050 - Basic Materials and Methods, apply to the work specified in this Section.

#### **1.02 GENERAL PROVISIONS**

- A. Where items of the General Conditions and Supplementary General Conditions are repeated in other Sections of the Specifications, it is merely intended to qualify or to call particular attention to them. It is not intended that any other parts of the General Conditions and Supplementary General Conditions shall be assumed to be omitted if not repeated therein.
- B. This Section applies equally and specifically to all Contractors supplying labor and/or equipment and/or materials as required under each Section of this Division.

#### **1.03 DESCRIPTION**

- A. This Contract is for all labor, materials and equipment required for the complete installation of the fire protection systems.
- B. The fire protection systems shall be complete and finished in all respects, tested and ready for operation.
- C. All materials, equipment and apparatus shall be new and of first-class quality.
- D. Any apparatus, appliance, material or work not shown on Drawings but mentioned in the Specifications, or vice versa, or any incidental accessories necessary to make the work complete and perfect in all respects and ready for operation as determined by good trade practice even if not particularly specified, shall be furnished, delivered and installed under their respective Divisions without any additional expense to the Owner.

#### **1.04 SCOPE OF WORK**

- A. The following list is of materials, equipment and devices to be furnished and installed under this Contract:

**Building Addition/Renovation:**

The existing mains shall be extended to the new addition.

Complete sprinkler coverage throughout addition.

Sprinkler supply system shall include all mains, branches, drains, swing joints, control valves and inspectors test valves.

#### **1.05 WORK PERFORMED BY OTHERS**

- A. Contractor and/or his Subcontractors: The following work shall be performed under other Divisions.

All excavation and backfill within and outside of the building

All chases and openings

All cutting and patching

Painting of all finished work, except as noted

Installation of access doors where required; doors provided by Fire Protection Contractor  
Fire extinguishers

B. Electrical Contractor:

Power wiring to motors, starters, controllers and other electrical devices furnished under this Contract  
Disconnect switches for mechanical equipment

C. The Sprinkler Contractor is required to supply all necessary supervision and coordinate all information to any other trades who are to supply work to accommodate the fire protection system installation.

D. Where the Sprinkler Contractor is required to install items which he does not purchase, he shall include for such items the coordination of their delivery.

**PART 2 - PRODUCTS**

(The following product references are those typically used at UCHC. Contractor shall refer to the contract drawings for specific products)

2.01 GENERAL

A. Only materials listed in this Section and in the Equipment Schedules will be permitted on this project.

B. All components used throughout the systems shall be UL listed and FM approved.

2.02 SPECIFIC

A. The following is a list of manufacturers which may be considered as acceptable equivalents to the specific manufacturers called out. Subject to the Engineer's review of the submittal devices.

Sprinklers: Reliable, Star, Viking or Grinnell.

2.03 PIPING

A. Above-grade piping 2-1/2 inches and larger shall be black steel pipe with malleable iron, roll grooved pipe joints and fittings rated for 175 PSI working pressure and shop-welded outlets. Piping two (2") inches and smaller shall be Schedule 40 black steel pipe with 125#, cast iron, threaded fittings and joints.

B. Grooved pipe system may be installed using "Victaulic Firelock" rigid couplings Style 005 and "Firelock" grooved pipe fittings by Victaulic Company. Couplings shall have Grade E Type A EPDM central cavity pressure responsive gaskets. Couplings and fittings shall be installed per manufacturer's instructions.

C. Drain riser piping shall be Schedule 40 black steel pipe with standard-weight, cast iron, threaded fittings and joints.

2.04 VALVES

A. Provide UL listed, FM approved fire protection valves where indicated and where required.

B. Gate valves 2-1/2 inches and smaller shall have bronze bodies, 175/300 lbs. WWP, bronze trim, wedge discs, rising stem and threaded ends.

C. Gate valves three (3") inches and larger shall be OS&Y type with iron bodies, 175/300 lbs. WWP, bronze trim and flanged ends.

- D. Check valves 2-1/2 inches and smaller shall be bronze swing check with threaded ends, 200/300 lbs. WWP.
- E. Check valves three (3") inches and larger shall be iron or semi-steel with bronze trim, swing check, flanged ends and 175/300 lbs. WWP.
- F. Valves shall be as manufactured by Jenkins, Stockham, Nibco, Walworth or acceptable equivalent.

#### 2.05 SPRINKLERS

- A. All sprinkler heads shall be UL listed and or FM approved for their proper application. Verify ratings and approvals required by the building Owners Insurance Underwriter. Unless otherwise specified, sprinkler system equipment shall be Viking, Grinnell, Central, or acceptable equivalent to equipment models named herein.

All storage/mechanical/utility and non-public areas with finished ceilings shall be protected with surface mounted chrome pendent with chrome plated ceiling escutcheons/sprinkler heads Model #GB.

All storage/mechanical/utility and non-public areas without finished ceilings shall be protected with standard upright chrome plated heads Model #GB.

### **PART 3 - EXECUTION**

#### 3.01 GENERAL

- A. Piping is to be run concealed in all finished areas where possible and so arranged that all portions can be drained. Provide additional drains where necessary.
- B. The entire fire protection system shall be installed according to the requirements of NFPA #13, #14, the Building's Fire Marshal, the Local Fire Marshal, IRI and any other authority having jurisdiction.
- C. All penetrations through fire-rated walls, floors or ceilings which piping passes shall be sealed with the proper fire stopping material which has passed the ASTM-E814 fire test standard and is UL classified.
- D. The run and arrangement of pipes shall be as straight and direct as possible, neatly spaced, forming right angles or parallel lines with building walls and other pipes. All risers shall be erected plumb and true. The work of this Section shall be coordinated with the work of other Sections in order to avoid interference's of piping and unnecessary cutting of floors and walls. All installations underground or concealed in walls or floors shall be tested before the construction is closed up.
- E. Provide access doors for all concealed valves and equipment located in wall, ceiling or column construction except at ceilings with lift-out tiles. Turn over to the Contractor for installation.
- F. Provide all bases and supports not part of the building structure and not specifically indicated to be provided under another Division.
- G. No piping or devices shall be installed in such a manner as to interfere in any way with the full swing of doors or maintenance access to equipment.
- H. Special precautions shall be taken in the installation of concealed piping to insure that it is properly installed and tested. Should it be necessary to correct piping improperly installed, this Contractor shall be held liable for any and all damage to other work resulting from improper piping conditions.

#### 3.02 SPRINKLERS AND PIPING

- A. All exposed piping which penetrate walls, floors or ceilings shall have chrome-plated escutcheons where piping passes through.
- B. Install drain risers parallel to combination risers, extend all drains to finished grade.
- C. Provide a cabinet equipped with new spare sprinkler heads for each type and temperature ratings and one (1) wrench for each type of head. Locate where directed by Owner.
- D. Sprinkler heads shall be 165°F, except where NFPA #13 or the Insurance Underwriter recommends higher temperature ratings.

### 3.03 SEISMIC PROTECTION

- A. Sprinkler system shall be installed to be protected from pipe breakage from seismic forces. Seismic restraint system type and installation shall be as required per NFPA 4 1 3.
- B. Seismic restraint system shall include but not be limited to the following equipment: flexible pipe couplings, separation assemblies with flexible fittings, sway bracing, including lateral and longitudinal and C-type clamps with retaining straps as permitted by NFPA # 1 3.
- C. Seismic restraint system bracing and hangers shall be as manufactured by "B-Line Systems, Inc." or acceptable equivalent. NOTE: Any other restraint system submitted as a substitution must have passed the same code approvals as that which is manufactured by "B-Line Systems, Inc."

### 3.04 SPRINKLER COVERAGE

- A. Provide complete sprinkler coverage throughout the entire addition.
- B. Provide sprinklers in all areas of the new cooling tower addition.

### 3.05 DESIGN CRITERIA

- A. Sprinkler system design shall be based on the current water flow data provided by the insurance underwriter.

### 3.06 PIPING IDENTIFICATION

- A. Fire protection main supply piping, standpipe supply piping and all main service risers shall be labeled with pipe markers as listed and manufactured by "Seton Name Plate Company" or acceptable equivalent.
- B. Piping markers shall comply with ANSI A1 3.1-1981 scheme for the identification of piping systems.
- C. Pipe markers shall be pressure-sensitive vinyl, style "Opti-Code" labeled to indicate piping supply system. Piping shall also be marked with "Arrows-On-A-Roll-Tape" to indicate the direction of fluid flow.

### 3.07 SIGNAGE

- A. The following equipment shall have the proper signs installed indicating the information as required per NFPA 13. Signs shall be as manufactured by "Seton Name Plate Company" or acceptable equivalent.

All valves controlling sprinkler systems.

All outside alarm devices.

Any and all other areas or equipment as required by NFPA.

3.08 FLUSHING OF SYSTEM

- A. All underground mains and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping for a sufficient time to ensure thorough cleaning. Follow NFPA 13 requirements for the recommended rates of flow needed for proper flushing.

3.09 TESTS

- A. Test all sprinkler system piping at 225 PSI with water for two (2) hours without a drop in gauge pressure or visual leakage.
- B. Test each sprinkler water flow alarm switch to demonstrate that the opening of one (1) sprinkler head will sound an alarm.
- C. Test all supervisory switches for proper operation and signal transmittal.

3.10 WORKING DRAWING SUBMITTAL

- A. The Fire Protection Contractor shall make his own 1/4" - 3/8" = I' working drawings and shall submit them along with complete hydraulic calculations to the Architect, Engineer, local Fire Marshal, and the Insurance Underwriter for review. Drawings and calculations shall be signed and sealed by a Professional Engineer prior to submittal. Submit record set of Insurance Underwriters review to Architect for final acceptance: NOTE: No installation or work shall be performed without prior review of acceptance of working drawings.
- B. Working Drawings shall contain all of the requirements as listed in the State D.P.W. A/E Procedure Manual, as well as items listed in C.
- C. Working drawings shall contain and show the following information, in addition to information required by D.P.W. A/E Manual indicated in B.

Engineers seal or NICET stamp  
Location of all pertinent mechanical and electrical equipment  
Location of fire walls  
Ceiling construction  
Full-height cross sections as required  
Location of partitions, stairs, etc.  
Inclusion of plot plan showing routing of fire line  
Make and type of sprinkler heads and temperature rating  
Number of sprinklers on each riser and on each floor  
Total area protected on each floor  
Make, model and size of check valves and all other valves required  
All fittings and sizes  
Type of hangers, inserts and sleeves  
All drains and test pipes  
Cutting lengths of pipe  
Elevations of pipe lines  
Location and type of seismic restraints, bracing and hangers used

3.11 SHOP DRAWING SUBMITTAL

- A. Submit shop drawings to the Engineer and insurance underwriter for review. See State D.P.W. A/E Manual for shop drawing requirements, in addition to those listed below. No equipment or piping may be installed prior to review and acceptance of shop drawings.
- B. The following shop drawings shall be submitted for review:

Pipe materials  
OS&Y and check valves  
Sprinkler heads  
Grooved pipe fittings and couplings  
Piping identification labels  
Seismic restraints

END OF SECTION

## **SECTION 15410 PLUMBING PIPING**

### **PART 1 - GENERAL**

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specification Sections, Section 15010 - General Conditions for Mechanical Trades and Section 15050 - Basic Materials and Methods, apply to the work specified in this Section.

#### 1.02 SUMMARY

- A. This Section includes plumbing piping systems to a point 60 inches (1500 mm) outside the building. Systems include the following:

Potable water distribution, including cold- and hot-water supply and hot-water circulation.  
Drainage and vent systems, including sanitary and storm.

#### 1.03 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide components and installation capable of producing piping systems with the following minimum working pressure ratings, except where indicated otherwise:

Water Distribution Systems, Below Ground: 150 psig (1035 kPa).  
Water Distribution Systems, Above Ground: 125 psig (860 kPa).  
Soil, Waste, and Vent Systems: 10-foot head of water (30 kPa).  
Storm Drainage Systems: 10-foot head of water (30 kPa).

### **PART 2 - PRODUCTS**

(The following product references are those typically used at UCHC. Contractor shall refer to the contract drawings for specific products)

#### 2.01 PIPING

- A. Black steel and/or galvanized black steel pipe 2-1/2 inches and smaller shall be Schedule 40 or Schedule 80 ASTM A-53, Grade A, thread and coupling type. Pipe sizes 3 inches and larger shall be ASTM A-53 plain end type for welding.

Cast iron, screwed fittings for water piping shall conform to ANSI B 1 6.4, Class 125 or 250, as specified.

Malleable iron, screwed fittings for gas and air piping shall conform to ANSI B16.3, Class 125 or 300, as specified.

Wrought steel, butt-welding fittings shall conform to ANSI B 1 6.9.

Flanges shall be ANSI Class 150, unless specified otherwise.

Cast iron, flanged fittings shall conform to ANSI B 16. 1, Class 125.

Flange gaskets shall conform to ASTM C-509 for temperature and pressure of service.

Bolting materials shall conform to ASTM A-307 or ASTM A-193.

Mechanical fittings and couplings shall conform to ASTM A-339, ductile or malleable iron with rolled or cut, grooved pipe ends.

- B. Copper tubing shall be seamless and shall conform to ASTM B-306, ASTM B-280 and/or ASTM B-88. Tubing shall be Type "K", "L", "DWV" or "ACR" hard-drawn or soft-annealed, as specified.

Fittings and couplings for sizes 2-1/2 inches and smaller shall be wrought copper or forged bronze and shall conform to ANSI B16.22. For sizes 3 inches and larger, use cast red bronze fittings and couplings conforming to ANSI B 16.18.

Soldering materials shall conform to ASTM B-32.

Flared compression fittings and couplings shall conform to ANSI B16.26 for cast bronze fittings.

- C. Cast iron pipe shall be service-weight ASTM A-74 with hub and spigot or no-hub joints, as specified. Each length of pipe shall bear the insignia of the Cast Iron Soil Pipe Institute (CISPI).

Hub and spigot joints and fittings shall conform to ANSI A-1 12.5.1 for service-weight fittings.

Neoprene-gasketed joints shall conform to ASTM C-564 as manufactured by Tyler Pipe Co., "Ty-Seal" or equivalent.

No-hub joints and fittings shall conform to CISPI Standard #301-72 with stainless steel clamps.

Heavy-duty, no-hub couplings shall be manufactured by Clamp-All Corp., 24-gauge, Type 304, stainless steel with neoprene gasket.

- D. Ductile iron pipe shall conform to ANSI A21.51 and AWWA C-151.

Mechanical joints and fittings shall conform to ANSI A2 1.11 and A21.12 and AWWA C-111 and C-112, as manufactured by U.S. Pipe & Foundry Co., or equivalent.

Push-on joints and fittings shall conform to ANSI A2 1.10 and AWWA C-110, as manufactured by U.S. Pipe & Foundry Co., or equivalent.

- E. Polyvinyl Chloride (PVC) plastic pipe shall conform to ASTM D-1785 for Schedule 40 or 80 as specified.

Threaded PVC fittings shall conform to ASTM C-2464 for Schedule 80.

Socket-type PVC fittings and couplings shall conform to ASTM D-2466 for Schedule 40 and ASTM D-2467 for Schedule 80.

Welding solvents shall conform to ASTM D-2564. Methods shall conform to ASTM D-2855.

Bell and spigot pipe for waste and drain shall conform to ASTM D-2672 and/or ASTM D-2729.

Drainage fittings shall conform to ASTM D-2665.

- F. Fiberglass-reinforced, polyester resin pipes shall conform to ASTM D-2996 and/or ASTM D-2997 for bell and spigot or threaded end pipe and fittings. A.O. Smith-Inland or equivalent.

### **PART 3 - EXECUTION**

#### **3.01 PIPING INSTALLATIONS**



- A. All piping shall be fabricated, constructed and installed in strict accordance with ANSI/ASME B31.9 Building Services Piping Code, latest edition.
- B. Piping shall be installed in a neat, workmanlike manner and run parallel to building lines as high and close to structural steel as possible, and as close to building walls as is practical. Piping shall be level or properly pitched without dips, traps or sags. Effort should be made to keep piping in a single plane to reduce venting and draining requirements. Risers shall be run plumb and true and shall be properly supported with riser clamps at each floor. Additional supports shall be provided as required to prevent excessive lateral movement.
- C. All horizontal piping shall be properly supported in such a manner so as to prevent sagging, dripping, or vibration. All hangers shall support the load of the pipe as equally as possible. Support piping in accordance with the following Schedules or to Connecticut code in acceptance for this project.

Steel Piping:

Pipe Size	Rod Size	Hanger Size
½" - ¾"	3/8"	5'
1" - 1-1/2"	3/8"	7'
2-1/2" - 3"	½"	11'
4" - 5"	5/8"	14'
6"	¾"	17'
8" - 10"	7/8"	19'
12"	1"	23'
14" - 16"	1-1/4"	25'
18"	1"	28'
20"	(2) 1-1/4"	30'
24"	(2) 1-½"	32'
30"	(2) 1-1/2"	33'

Copper Tubing:

Pipe Size	Rod Size	hanger Spacing
½" - 1-1/2"	3/8"	7' (1/2"=5')
2-	3/8"	10'
2-1/2" - 3"	½"	12'
4" - 5"	5/8"	14'
6"	¾"	17'
8"	7/8"	19'

Plastic Piping:

Pipe Size	Rod Size	hanger Spacing
Up to ½"	3/8"	4'
¾" - 1-1/4"	3/8"	5'
1-1/2" - 2"	3/8"	6'
2-1/2" - 4"	½" (4" = 5/8")	7'
5" - 6"	5/8" (6" = ¾")	8'

Cast iron pipe should be supported at each joint. If, for example, five (5') foot sections of pipe are used, then five (5') foot hanger spacing is required. No-hub cast iron pipe shall be supported at every other joint, but hangers shall not exceed four (4') feet on centers. Use rod sizes for steel pipe of equivalent pipe sizes.

Fiberglass Piping:

Pipe Size	Rod Size	Hanger Spacing
Up to 1- 1/2"	3/8"	5'
2'	3/8"	6'
2-1/2" - 3'	1/2"	8'

Pipe Size	Rod Size	Hanger Spacing
4'	5/8'	8-1/2'
6"	3/4"	10- 1/2'
8 "	7/8"	11-1/2'
10" - 12"	7/8"	13'

D. Piping to terminal units, boilers, chillers, heat exchangers and any other equipment shall be arranged in such a manner that removal of coils, tubes, etc., can be made without difficulty. Location of units or flanges shall accommodate removal. Provide adequate space between piping, walls, equipment or other obstructions for tool clearance and accessibility. Notify the UCHC Agent regarding any job conditions which may cause access or maintenance problems.

E. Piping materials, fitting types and joint materials and methods for each individual piping system shall be as specified under individual trade Sections.

Where discrepancies or inconsistencies of information occur between individual trade Sections and this Section, the trade Section shall take precedence.

F. All piping, fittings, valves and other connections shall be made in strict accordance with manufacturer's recommendations, BOCA Plumbing Code, American Welding Society and any other applicable standards.

Flanged and threaded fittings shall be installed with gaskets, joint compounds or tapes which are compatible with the fluids being conveyed in the piping system.

G. Extra precautions shall be taken to minimize the amount of dirt, slab and any other foreign material entering the piping. Keep ends of pipes clean and plug ends whenever piping is to be left unfinished for extended periods.

H. The Contractor shall make any necessary adjustments, offsets, etc., as required to clear ducts, diffuser drops, light fixtures or other minor obstructions to avoid unnecessary cutting of walls. No piping shall be installed in such a manner so as to interfere with the full swing of doors.

Special precautions shall be taken in the installation of concealed piping to know that it is properly installed and tested. Should it be necessary to correct piping improperly installed, this Contractor shall be held liable for any and all damages to other work resulting from the correction of the improper piping conditions.

I. Risers in exterior walls shall be run on the warm side of building insulation to prevent freeze-up. Isolation valves for risers in exterior walls should be located in the ceiling plenum before the riser enters the wall cavity.

All concealed piping shall remain uncovered and all piping and equipment shall not be insulated until all required tests have been completed. However, in the event that the building construction schedule requires it, the Contractor shall obtain acceptance from the UCHC Agent and make arrangements satisfactory to him for prior tests on the work.

J. Piping passing through floors shall run through steel pipe sleeves one (1") inch inside diameter larger than pipe's outside diameter. Pack void space fully with fiberglass or mineral wool. Piping passing through interior partitions shall pass through a 22-gauge galvanized sheet metal sleeve. Pack opening as previously noted. All sleeves shall be sized for covered piping if applicable.

### 3.02 PIPE AND FITTINGS APPLICATIONS

- A. General: Use pipe, tube, fittings, and joining methods for piping systems according to the following applications.
- B. Water Distribution Piping Above Ground: Use the following:
  - 4 to 12 Inches (DN 100 to DN 300): Steel pipe; galvanized, cast-iron threaded fittings; castiron threaded flanges; galvanized, flanged steel expansion joints; malleable-iron unions; and threaded or flanged joints.
  - 3-1/2 Inches (DN 90) and Smaller: Hard copper tube, Type L (Type B); wrought-copper or cast-copper-alloy pressure fittings; copper unions; bronze flanges; and solder joints with Alloy Sn95 solder.
  - Fittings Option: Mechanically formed outlets, brazing filler alloy, and brazed joints.
- C. Soil, Waste, and Vent Piping Above Ground: Use the following:
  - 5 to 10 Inches (DN 125 to DN 250): Hubless cast-iron soil pipe; hubless cast-iron soil pipe fittings; stainless-steel, cast-iron, or FM-type heavy-duty couplings for hubless cast-iron soil pipe and fittings; and hubless joints.
  - 2 to 4 Inches (DN 50 to DN 100): Hubless cast-iron soil pipe; hubless cast-iron soil pipe fittings; stainless-steel, cast-iron, or FM-type heavy-duty couplings for hubless cast-iron soil pipe and fittings; and hubless joints.
  - 1-1/4 and 1-1/2 Inches (DN 32 and DN 40): Copper drainage tube, wrought-copper or cast copper-alloy drainage fittings, and soldered joints with Alloy E solder.
- D. Storm Drainage Piping Above Ground: Use the following:
  - 5 to 10 Inches (DN 125 to DN 250): Hubless cast-iron soil pipe; hubless cast-iron soil pipe fittings; stainless-steel, cast-iron, or FM-type heavy-duty couplings for hubless cast-iron soil pipe and fittings; and hubless joints.
  - 2 to 4 Inches (DN 50 to DN 100) : Hubless cast-iron soil pipe; hubless cast-iron soil pipe fittings; stainless-steel, cast-iron, or FM-type heavy-duty couplings for hubless cast-iron soil pipe and fittings; and hubless joints.

### 3.03 VALVE APPLICATIONS

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
  - Shutoff Duty: Use gate, ball, or butterfly valves.
  - Throttling Duty: Use globe, ball, or butterfly valves.

### 3.04 DRAINAGE AND VENT PIPING INSTALLATION

- A. Install cast-iron soil pipe and cast-iron soil pipe fittings according to CISPI 1990 revised and edited edition of "Cast Iron Soil Pipe and Fittings Handbook, Volume I," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."

- B. Make changes in direction for drainage and vent piping using appropriate Y branches, Y branches with 1/8 bends, and long-sweep 1/4, 115, 1/6, 1/8, and 1116 bends. Sanitary tees and short-sweep quarter bends may be used on vertical stacks of drainage lines where change in direction of flow is from horizontal to vertical. Use long-turn double-Y-branch and 1/8-bend fittings where 2 fixtures are installed back to back or side by side and have a common drain. Straight tees, elbows, and crosses may be used on vent lines. Make no change in direction of flow greater than 90 degrees. Where different sizes of drainage pipes and fittings are connected, use proper size standard increasers and reducers. Reduction of the size of drainage piping in the direction of flow is prohibited.
- C. Install drainage and vent piping at the following minimum slopes, except where another slope is indicated:

Sanitary Building Drain: 1/4 inch per foot (1:50) (2 percent) for piping 3 inches (DN 80) and smaller; 1/8 inch per foot (1: 100) (1 percent) for piping 4 inches (DN 100) and larger.

Horizontal Sanitary Drainage Piping: 1/4 inch per foot (1:50) (2 percent).

Storm Building Drain: 1/8 inch per foot (1: 100) (1 percent).

Horizontal Storm Drainage Piping: 1/4 inch per foot (1:50) (2 percent).

Vent Piping: 1/8 inch per foot (1: 100) (1 percent).

3.05 Pipe Attachments: Install the following:

Riser Clamps: MSS Type 8 or Type 42 for vertical runs.

Adjustable Steel Clevis Hangers: MSS Type 1 for individual straight horizontal runs 100 feet (30 m) and less.

Adjustable Roller Hangers: MSS Type 43 for individual straight horizontal runs longer than 100 feet (30m).

Spring Cushion Rolls: MSS Type 49, where indicated, for individual straight horizontal runs longer than 100 feet (30 m).

Pipe Rolls: MSS Type 44 for multiple straight horizontal runs 100 feet (30 in) or longer. Support pipe rolls on trapeze.

Spring Hangers: MSS Type 52 for support of base of vertical runs.

- A. Support cast-iron soil pipe and fittings not included in table, at maximum horizontal spacing of 5 feet (1.5in), except 10-foot (3-m) sections of pipe may be supported at 10-foot (3-m) spacing and at maximum vertical spacing of 15 feet (4.6 in).

3.06 CONNECTIONS

- A. Supply Runouts to Fixtures: Install hot and cold water supply piping runouts of sizes indicated, but not smaller than required by plumbing code to fixtures.
- B. Drainage Runouts to Fixtures: Provide drainage and vent piping runouts, with approved trap, of sizes indicated, but not smaller than required by plumbing code, to plumbing fixtures and drains.
- C. Locate drainage piping runouts as close as possible to bottom of floor slab supporting fixtures or drains.

- D. Mechanical Equipment Connections: Connect hot- and cold-water supply piping system to mechanical equipment as indicated. Provide shutoff valve and union for each connection; provide drain valve on drain connection. Use flanges instead of unions for connections 2-1/2 inches (DN 65) and larger.

### 3.07 FIELD QUALITY CONTROL

- A. Inspect water distribution piping as follows:

Do not enclose, cover, or put into operation water distribution piping system until it has been inspected and approved by the authority having jurisdiction.

During progress of the installation, notify the plumbing official having jurisdiction at least 24 hours prior to time inspection must be made. Perform tests specified below in presence of the plumbing official.

Roughing-In Inspection: Arrange for inspection of piping system before concealed or closed-in after system roughing-in and prior to setting fixtures.

Final Inspection: Arrange for final inspection by plumbing official to observe tests specified below and to ensure compliance with requirements of plumbing code.

Reinspections: When a plumbing official finds that piping system will not pass test or inspection, make required corrections and arrange for reinspection by the plumbing official.

Reports: Prepare inspection reports signed by plumbing official.

- B. Test water distribution piping as follows:

Test for leaks and defects in new water distribution piping systems and parts of existing systems that have been altered, extended, or repaired. If testing is performed in segments, separate reports for each test, complete with diagram of portion of system tested shall be provided.

Leave uncovered and unconcealed in new, altered, extended, or replaced water distribution piping until it has been tested and approved. Expose work that has been covered or concealed before it has been tested and approved for testing.

Cap and subject the piping system to a static water pressure of 50 psig (345 kPa) above the operating pressure without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for 4 hours. Leaks and loss in test pressure constitute defects that must be repaired.

Repair leaks and defects with new materials and retest system or portion thereof until satisfactory results are obtained.

Prepare reports for tests and required corrective action.

- C. Inspect drainage piping as follows:

Do not enclose, cover, or put into operation drainage and vent piping system until it has been inspected and approved by the authority having jurisdiction.

During progress of installation, notify the plumbing official having jurisdiction at least 24 hours prior to time such inspection must be made. Perform tests specified below in presence of the plumbing official.

Roughing-In Inspection: Arrange for inspection of piping system after system roughing-in, before concealing, and prior to setting fixtures.

Final Inspection: Arrange for final inspection by plumbing official to observe tests specified below and to ensure compliance with requirements of plumbing code.

Reinspections: Make required corrections and arrange for reinspection by plumbing official when piping system fails to pass test or inspection.

Reports: Prepare inspection reports signed by the plumbing official.

- D. Drainage and Vent Piping System Tests: Test drainage and vent systems according to procedures of authority having jurisdiction or, in absence of published procedure, as follows:

Test for leaks and defects in new drainage and vent piping systems and parts of existing systems that have been altered, extended, or repaired. If testing is performed in segments, submit a separate report for each test, complete with a diagram of the portion of the system tested.

Leave uncovered and unconcealed in new, altered, extended, or replaced drainage and vent piping until it has been tested and approved. Expose for testing work that has been covered or concealed before it has been tested and approved.

Rough Plumbing Test Procedure: Except for outside leaders and perforated or open-jointed drain tile, test piping of plumbing drainage and venting systems on completion of roughing-in piping installation. Tightly close all openings in piping system and fill with water to point of overflow, but not less than 10 feet head of water (30 kPa). Water level shall not drop during the period from 15 minutes before inspection starts through completion of inspection. Inspect joints for leaks.

Finished Plumbing Test Procedure: After plumbing fixtures have been set and their traps filled with water, test connections and prove gas tight and watertight. Plug stack openings on roof and building drain where it leaves the building and introduce air into the system equal to pressure of 1 inch water column (250 Pa). Use a U tube or manometer inserted in the trap of a water closet to measure this pressure. Air pressure shall remain constant without introducing additional air throughout period of inspection. Inspect plumbing fixture connections for gas and water leaks.

Repair leaks and defects using new materials and retest system or portion thereof until satisfactory results are obtained.

Prepare reports for tests and required corrective action.

### 3.08 CLEANING

- A. Clean and disinfect water distribution piping as follows:

Purge new potable water distribution piping systems and parts of existing potable water systems that have been altered, extended, or repaired prior to use.

Use purging and disinfecting procedure prescribed by authority having jurisdiction or, if a method is not prescribed by that authority, the procedure described in either AWWA C651 or AV,IWA C652 or as described below:

Flush piping system with clean, potable water until dirty water does not appear at outlets.

Fill system or part thereof with water/chlorine solution containing at least 50 parts per million of chlorine. Isolate (valve off) and allow to stand for 24 hours.

Drain system or part thereof of previous solution and refill with water/chlorine solution containing at least 200 parts per million of chlorine. Isolate and allow to stand for 3 hours.

Flush system with clean, potable water until chlorine does not remain in water coming from system following allowed standing time.

Submit watersamples in sterile bottles to authority having jurisdiction. Repeat procedure if biological examination made by the authority shows evidence of contamination.

- B. Prepare and submit reports for purging and disinfecting activities.
- C. Clean interior of piping system. Remove dirt and debris as work progresses.

### 3.09 COMMISSIONING

- A. Fill water systems. Check compression tanks to determine that they are not air bound and that system is completely full of water.
- B. Before operating systems, perform these steps:
  - Close drain valves, hydrants, and hose bibs.
  - Open shutoff valves to full open position.
  - Open throttling valves to proper setting.
  - Remove plugs used during testing of piping systems and plugs used for temporary sealing of piping during installation.
  - Remove and clean strainer screens. Close drain valves and replace drain plugs.
- C. Check plumbing equipment and verify proper settings, adjustments, and operation. Do not operate water heaters before filling with water.
- D. Check plumbing specialties and verify proper settings, adjustments, and operation.

### 3.10 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- B. Place plugs in ends of uncompleted piping at end of day or when work stops.

END OF SECTION 15410

**SECTION 15890  
DUCTWORK & DUCTWORK ACCESSORIES**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specification Sections, Section 15010 - General Conditions for Mechanical Trades and Section 15050 - Basic Materials and Methods, apply to the work specified in this Section.

B. SUMMARY

Air distributions systems including ductwork, duct systems, HVAC casings, duct accessories, air outlets and inlets, and air terminals.

C. QUALITY ASSURANCE

Compliance: NFPA 90A, 96.

D. Radiation shielding is not a part of this section. However the contractor shall coordinate work with the radiation shielding design contractor to ensure ductwork penetration shielded walls are properly protected.

**PART 2 - PRODUCTS** (The following product references are those typically used at UCHC. Contractor shall refer to the contract drawings for specific products).

2.01 Flexible ductwork:

Not allowed in lengths greater than four (4) feet. Can only be used as a final connection from duct to end terminal unit. All duct connections on any installed work are to be caulked and sealed tight.

2.02 Metal Ductwork:

Types:

Rectangular, round, and flat-oval metal ducts and plenums for HVAC systems in pressure classes from Minus 2 inches to plus 10 inches water gage. All duct connections on any installed work are to be caulked and sealed tight.

Galvanized Sheet Steel: Lock-forming quality, ASTM A 527 G90.

PVC-Coated Galvanized Steel: UL 181 Class 1, lock-forming quality, ASTM A 527 G90.

Carbon Steel Sheets: ASTM A 366, cold-rolled sheets.

Stainless Steel: ASTM A 480, Type 316, with No. 4 finish if exposed, No. 1 finish for concealed ducts.

Aluminum Sheets: ASTM B 209, Alloy 3003-H14, sheet form, bright finish if exposed, mill finish for concealed ducts.

Duct Liner: NFPA 90A, TIMA AHC-101, ASTM C 1071, Type II with coated surface to prevent erosion of fibers.

Sealing Materials: Joint and seam sealants, tapes and mastics.



Firestopping: Fire-resistant sealant.

Hangers and Supports: Concrete inserts, powder actuated fasteners, structural steel fasteners suitable for use; galvanized sheet steel hangers; duct attachments; trapeze and riser supports.

Fabrication: SMACNA HVAC Duct construction Standards.

#### 2.03 Duct Accessories:

Backdraft Dampers: [Galvanized steel] [Extruded aluminum] frame, blades, blade seals, and axles.

Manual Volume Control Dampers: [Galvanized steel] [Extruded aluminum] standard volume, low-leakage volume, and high-performance volume control dampers; galvanized steel jackshaft; damper control hardware

Fire Dampers: UL 555 with galvanized steel frame, mounting sleeve, blades, horizontal dampers, fusible link.

Ceiling Fire Dampers: UL listed and labeled galvanized steel frame, volume control adjustment, replaceable fusible link.

Smoke Dampers: UL 555 and UL 555S, galvanized steel frame, blades and mounting sleeve, replaceable fusible link.

Actuators: Damper motors for smooth modulating or 2-position action.

Duct Silencers: Factory-fabricated rectangular and round units; acoustic fill.

Turning Vanes: Manufactured and acoustic turning vanes.

Duct-Mounted Access Doors and Panels:

Flexible Connectors: UL 181, Class 1, flame-retardant or noncombustible fabrics.

Flexible Ducts: UL 181, Class 1, uninsulated and insulated types.

Accessory Hardware: Instrument test holes, splitter damper accessories, flexible duct clamps, adhesives.

#### 2.04 Air Outlets and Inlets:

**Ceiling Supply Air Diffusers shall be TITUS, model # TDX, aluminum 24"X24" lay in module with optional adjustable discharge lever operator model AG-95 or AG-85 damper, in Standard Finish # 26 White, with mountings, and patterns, suitable for service, use, and location.**

**Ceiling Return/Exhaust Air Diffusers shall be TITUS, model # 23RS, aluminum flanged boarded model Return with optional aluminum opposed blade damper in Standard Finish # 26 White.**

Wall Registers and Grilles: Materials, faces, patterns, dampers, accessories, and finishes suitable for service, use, and location as selected.

### PART 3 - EXECUTION

#### 3.01 DUCTWORK

A. General:

All duct connections on any installed work are to be caulked and sealed tight.

Radius of duct elbows shall be at least equivalent to 1-1/2 times the width of duct to the centerline. Air turning vanes shall be installed at all square turns in ducts.

Construct and install all turning vanes in accordance with the SMACNA "Low Pressure Duct Construction Standards", Figures 2-3 and 2-4.

Provide six (6") inch long, neoprene or canvas-type flexible connectors where ducts connect to fans and air handling units. Seal connections properly to prevent air leakage.

Provide volume dampers with locking quadrants or splatters with hinge and rod through side of duct with set screw where shown on the Drawings.

Branch ducts shall be hung with 18-gauge x 1-inch galvanized straps secured to side and bottom of ducts with sheet metal screws. Large main ducts with one side more than 30 inches shall be hung with steel rods and angle iron secured to bottom of duct. Use proper upper attachments as required.

On all rectangular ducts six (6) square feet and larger or 28-inch diameter or larger, seismic lateral restraints shall be provided to restrict horizontal movement in any direction. In addition, the duct shall be firmly attached to the hanger to restrict vertical separation from the hanger. Ducts which are supported by hangers 12 inches or less in length from the top of the duct to the bottom of the support structure do not require lateral restraints.

Fire dampers shall be installed in strict accordance with the SMACNA "Fire Damper and Heat Stop Guide for Air Handling Systems". Fire dampers shall be firmly anchored to the wall, partition or floor and connected to ductwork with acceptable breakaway connections.

All fire dampers shall have access doors or other suitable means for inspection and resetting.

Galvanized sheet metal plenums, casings, blank-off sheets and similar applications to be constructed in accordance with SMACNA Standards, smooth and even inside, airtight, and reinforced by means of galvanized structural steel angles or shapes.

Outside air and exhaust plenums connected to louvers or gravity ventilators shall be sealed watertight and provided with a means of continuous water drainage by sloping the base of the plenum toward louver or by pitching and draining with a drain pipe.

All branch duct take-offs shall be made with a 45o entry fitting or parallel flow branch fittings as detailed in SMACNA "Low Pressure Duct Construction Standards". The use of 90' straight tap fittings shall not be permitted.

Exception: 90' spin-on duct collars for diffuser take-offs shall be permitted where specified on the Drawings.

Open-ended return air or exhaust ducts shall have a 1-1/4-inch flange all around the end with a 1/2-inch Mesh, galvanized, framed-screen inlet.

Care should be taken to keep dirt, dust, scraps and other foreign matter out of the duct system during construction. This is especially important on exhaust return and variable air volume systems since foreign material drawn into fans or VAV terminals could damage the equipment.

Duct risers shall be properly supported from the floor or walls with minimum 1-1/2" x 1-1/2" x 1/8" angles attached to the duct and to the floor or wall.

Where acoustical duct lining is shown on Plans or specified, the duct dimension shown shall be the clear, inside dimension of the assembly. Allow for larger outside dimensions as required for specified lining thickness.

All existing ductwork under the footprint of this project and back to the main duct shall be cleaned as part of this project by the contractor.

All existing heating, cooling and reheat coils under the footprint of this project and back to the main duct shall be cleaned (wire brushed) as part of this project by the contractor

All existing reheat valves and controls providing conditioned air for this project shall be replaced as part of the project by the contractor.

3.02 Low Pressure Ductwork:

Low pressure ductwork shall be constructed, fabricated and installed in strict accordance with the latest editions of the following SMACNA Standards: All duct connections on any installed work are to be caulked and sealed tight.

- “Low Pressure Duct Construction Standards” (LPDCS)
- “Fibrous Glass Duct Construction Standards” (FGDCS)
- “Flexible Duct Installation Standards”
- “Fire Damper and Heat Stop Guide for Air Handling Systems”

Low pressure duct systems shall be properly sealed with duct sealants and mastics, not tape, as specified in Table 1-2 of the SMACNA “Low Pressure Duct Construction Standards”. Duct leakage rate for low pressure ductwork shall not exceed 5% of the system operating airflow.

Low pressure rectangular ductwork shall be constructed according to the following Table of Gauges and Reinforcement.

When duct static pressure classification (1/2”, 1” or 2”) is noted on the Drawings, the Contractor may deviate from the Table below in accordance with Tables 1-2 through 1-9 in the SMACNA “Low Pressure Duct Construction Standards”. The Contractor shall submit a written request for this substitution to the UCHC Agent prior to fabrication of ductwork.

	Maximum Duct Dimension - Inches	U.S. Standard Sheet Metal Gauge	Type of Transverse Joint and Bracing
•	Up thru 12”	26	S” slip or drive slip
•	13” thru 18”	26	8’-O” to 1 O’-O” on centers
	19” thru 30”	24	“S” slip or drive slip
			8’-O” to 10’-O” on centers
			1 “ bar slip 4’-O” or 5’-O” on centers, or 1” bar slip max. 1 O’-O” on centers with 1 “ x 1 “ x 1/8 “ angles 5’-O” from joint
	3 1 “ thru 42”	22	1 “ bar slip 4’-O” to 5’-O” on centers
	43” thru 54”	22	1-1/2” reinforced bar slip 4’-O” or 5’-O” on centers
	55” thru 60”	20	Same as 43” thru 54”
	61 “ thru 84”	20	1-1/2” reinforced bar slip 4’-O” or 5’-O” on centers

		with 1-1/2" x 1-1/2" x 1/8" angles 2'-0" or 2'-6" from joint
85" thru 96"	18	Companion angles 4'-0" or 5'-0" on centers with 1-1/2" x 1- 1/2" x 3/16" reinforcing angles 2'-0" or 2'-6" from joint
Over 96"	18	Companion angles 4'-0" or 5'-0" on centers with 2" x 2" x 1/4" reinforcing angles 2'-0" or 2'-6" from joint

3.03 Medium Pressure Ductwork:

Medium pressure ductwork, defined as having a static pressure over 2.0" wg, but not more than 6.01" wg, and with airflow velocities from 2000 fpm to 4000 fpm, shall be constructed in strict accordance with the SMACNA "High Pressure Duct Construction Standards". All duct connections on any installed work are to be caulked and sealed tight.

Medium pressure duct systems shall be properly constructed and sealed in accordance with SMACNA Seal Class A. Use Foster Products #32-14, United Duct Sealer, or equivalent, to seal ducts. Duct leakage rate for medium pressure systems shall not exceed 10% of the system operating airflow.

The Contractor shall submit duct leakage and balance reports to the UCHC Agent. Testing procedures shall be outlined and report format specified. Balance reports shall be done with a registered air balance company at completion of the HVAC work.

Medium pressure, rectangular duct systems shall be constructed in accordance with the following Table of Gauges and Reinforcement.

Where duct static pressure classification (3", 4" or 6") is noted on the Drawings, the Contractor may deviate from the Table below in accordance with Tables 4-1 through 4-3 in the SMACNA "High Pressure Duct Construction Standards". The Contractor shall submit a written request for this substitution to the UCHC Agent prior to fabrication of ductwork.

Maximum Side Inches	Steel—U.S. Standard Gauge	Type of Transverse Joint and Bracing
Up thru 12"	24	Joint - 5'-8" welded flange Bracing - None required
13" thru 18"	22	Joint - 1-3/8" reinforced welded flanged Bracing - 1" x 1" x 16" gauge angle at reinforcing

			angle on 48" centers between joints
1 9" thru 24"	22		Joint - 1-3/8" reinforced welded flanged. Bracing - 1" x 1" x 1/8" angle at reinforcing angle of 48" centers between joint.
25" thru 36"	22		Joint - 1-1/8" reinforced welded flange with tie rod in center. Bracing - 1-1/4" x 1-1/4" x 1/8" angle at joint and 1" x 1" x 1- 1/8 " rein- forcing angle of 32 inch centers between joints.
37" thru 48"	20	Joint -2" flanged joint.	Bracing - 1-1/2" x 1-1/2" x 1/8" reinforcing angle on 30" centers between joints.
49" thru 60"	20		Joint - 1-1/2" flanged joint with tie rod in center Bracing - 1- 1/2" x 1- 1/2" x 1/8" reinforcing angle on 24" centers (with tie rod in center) between joints.
6 1" thru 72"	18		Joint -2" flanged joint capped with 16 gauge tied at center Bracing - 2" x 2" x 1/4" angle on 30" centers
73" thru 84"	16		Same as 61 thru 72". Except 2-1/2" x 1/4" angle on 24" centers for intermediate rein- forcement

85" thru 96"	16	Same as 73" thru 84".
Over 96"	18	Joint 1-1/2" x 1-1/2" x 1/8" companion angle flanged joint with tie rods at 48" centers along angle Bracing - 2" x 2" x 1/8" reinforcing angle on 24" centers with tie rods at 48" centers along angle

Medium pressure, round ductwork shall be factory-fabricated, spiral lock seam or longitudinal lock seam, depending on size.

Fittings shall be factory-fabricated of the welded, gored, segmented type or die-stamped and welded 2 piece construction.

Wye and/or tee branch fittings shall be either conical or 45° lateral types. **Straight 90° tee fittings and/or bullhead tees will not be permitted.**

Round medium pressure ductwork shall be constructed in accordance with the following Table of Gauges and Reinforcement.

Where applicable, the Contractor may use lighter gauge ductwork with increased reinforcing as recommended by the duct manufacturer. This applies to duct systems constructed of United Sheet Metal's "Uni-Rib" or acceptable equivalent. The Contractor shall submit a written request for this substitution to the UCHC Agent prior to fabrication of ductwork.

Duct Diameter Inches	Ductwork Standard U.S. Ga.	Fitting-s Standard U.S. Ga.	Longitudinal Scam	Circumferential Seam & reinforcing
3 thru 8	24	22	spiral	2" long slip joint
9 thru 22	22	20	spiral	4" long slip joint
23 thru 36	20	18	spiral	4" long slip joint.
37 thru 50	20	18	butt-welded or lock seam	1- 1/4 " x 1- 1/4 " x 1/8" flanged joint

### 3.04 DUCTWORK ACCESSORIES

- A. On all air handling equipment including air handlers, in- line, rooftop, and utility and cabinet fans, furnish and install flexible duct connectors to isolate fan vibration from the duct system.

For general-purpose duct systems, use a fiberglass or nylon-reinforced, neoprene-type material with metal edge connectors equivalent to Ventfabrics "Ventglass" or Duro-Dyne "Duroprene".

For duct systems with operating temperatures higher than 180°F but not greater than 500°F, use a non-asbestos fabric-reinforced material equivalent to Ventfabrics "Ventsil" or Duro-Dyne "Thermafab".

For duct systems with operating temperatures higher than 500°F, consult with material manufacturers for recommendations.

All flexible connector materials shall meet the requirements of NFPA 90A for flame spread and smoke developed.

- B. Access doors shall be furnished and installed where required for access and at all fire dampers for inspection and resetting. Access doors shall be of a type compatible with the material in which the door is being installed. Minimum size of access doors shall be 18" X 18".

In general, duct-mounted access doors shall be clinch collar (knock-over) type door with gaskets and camlock fasteners. For uninsulated ducts, use a ½-inch thick door; for insulated ducts, use a 1-inch thick insulated door.

Access doors larger than 18 inches high shall be hinged on one side with camlock fasteners. Where obstructions preclude the use of a hinged door, consult with the UCHC Agent for acceptance of double-camlock door. Cesco HAD-5, HAD-10 or acceptable equivalent.

- C. Turning vanes shall be furnished and installed in all mitered elbows 45 degrees or greater.

Turning vanes shall be single-thickness type with ¾-inch trailing edge. Material shall be 22-gauge galvanized steel. Vanes shall be securely fastened to guide runners constructed of galvanized steel channel. Maximum length of unsupported vane shall be 30 inches.

Where duct width is greater than 30 inches, use double-thickness vanes or provide an intermediate runner on single-thickness vanes.

For high velocity systems (over 2500 FPM), always use single-thickness vanes with longer trailing edges. Minimum vane thickness shall be 20 gauge-e. Vanes shall be tack-welded to runners. Welded intermediate runners shall be provided in all elbows greater than 24 inches.

For fiberglass duct systems, performed, molded fiberglass turning vane assemblies may be used.

- D. Roof curbs shall be furnished and installed for all equipment which involves roof penetrations of ducts or piping bundles.

In general, roof curbs shall be constructed of aluminum with a minimum thickness of 0.050 inch. Corners shall be mitered and continuously welded to assure weather tightness. All curbs shall be insulated with a minimum of 1-½-inch rigid-id fiberglass. Curbs shall have a backdraft damper bracket, an integral cant strip and a minimum 2" x 2" wood nailer strip.

Where roofing will completely flash over the roof curb, 18-gauge galvanized steel may be used. Coordinate flashing details with the Roofing Contractor.

Various equipment supports for condensers, cooling towers, etc., not requiring roof penetrations shall meet the same basic construction requirements.

Pipe curbs for bundled piping penetrations shall be prefabricated assemblies designed for that purpose. Pipe curb shall consist of an insulated, welded metal curb with an ultraviolet-resistant ABS or PVC curb cap with performed penetration openings, neoprene pipe boots with stainless steel clamps. Pipe curbs shall be Pate Type "PCA" or acceptable equivalent.

Curbs and equipment supports may be furnished by the equipment manufacturer or from specialty curb manufacturers. Acceptable manufacturers: Pate; Conn- Fab; Stiles.

### 3.05 DAMPERS

- A. Volume dampers with locking quadrants shall be installed in ducts.

In branch and main ducts, use multiple, opposed-blade dampers constructed of galvanized steel with reinforced blades and locking quadrant.

For air terminal runouts, use rectangular or round butterfly dampers with rigidly-locked shaft and locking quadrants.

- B. Fire dampers shall be installed in all 2-hour and 1 -hour rated walls or shafts and at all floor penetrations.

General purpose fire dampers shall be 1-1/2-hour rated, UL labeled, Type "B" dampers with 160°F fusible link, 22-gauge interlocking blades, one-piece steel frame. For horizontal mounting, blades shall be spring loaded.

For high pressure systems, channel frame shall have welded, mitered corner joints. Damper shall be colored, Type "C".

For combination smoke/fire dampers, use UL labeled, Type "BJ" damper with 165°F fusible link and a UL on listed motor package for remotely actuating the damper. The dampers shall have stainless steel restraining cables on the fusible link. Prefco "McCabe Link" is also acceptable.

Multi-blade smoke/fire dampers equivalent to National Controlled Air #FSD-A-81 may be used in lieu of stacked blade-type dampers. Units shall bear UL labels on dampers and actuators,

Provide micro switches in dampers for status indication.

Acceptable damper manufacturers for 1-1/2-hour dampers: Cesco; Air Balance; Prefco; American Warming and Ventilating; Dowco; Louvers & Dampers Inc.; Ruskin; Phillips.

Acceptable damper manufacturers for 3-hour rated dampers: National Controlled Air; Air Balance Model 319; A.W.V. Type 430 ALP. in 7. Wherever smoke, fire, or smoke/fire dampers are specified on the Drawings, that specification shall take precedence over dampers specified herein.

END OF SECTION



**SECTION 15990**  
**TESTING, ADJUSTING & BALANCING**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specification Sections, Section 15010 - General Conditions for Mechanical Trades and Section 15050 Basic Materials and Methods, apply to the work specified in this Section.
- B. Where items of the General Conditions and Supplementary General Conditions are repeated in other Sections of the Specifications, it is merely intended to qualify or to call particular attention to them. It is not intended that any other parts of the General Conditions and Supplementary General Conditions shall be assumed to be omitted if not repeated therein.
- C. This Section applies equally and specifically to all Contractors supplying labor and/or equipment and/or materials as required under each Section of this Division.

1.02 SUMMARY:

- A. This Section specifies the requirements and procedures for total mechanical systems testing, adjusting, and balancing. Requirements include measurement and establishment of the fluid quantities of the mechanical systems as required to meet design specifications, and recording and reporting the results.
- B. Test, adjust, and balance the following mechanical systems:
  - Supply air systems.
  - Return air systems.
  - Exhaust air systems.
  - Outdoor air systems.
  - Hydronic systems.
  - Verify temperature control system operation.
- C. Test systems for proper sound and vibration levels.

1.03 DEFINITIONS:

- A. Systems testing, adjusting, and balancing is the process of checking and adjusting all the building environmental systems to produce the design objectives. It includes:
  - The balance of air and heating and cooling water distribution.
  - Adjustment of total system to provide design quantities.
  - Electrical measurement.

Verification of performance of all equipment and automatic controls.

- B. Test: To determine quantitative performance of equipment.
- C. Adjust: To regulate the specified fluid flow rate and air patterns at the terminal equipment (e.g., reduce fan speed, throttling).
- D. Balance: To proportion flows within the distribution system(submains, branches, and terminals) according to specified design quantities.
- E. Procedure: Standardized approach and execution of sequence of work operations to yield reproducible results.
- F. Report Forms: Test data sheets arranged for collecting test data in logical order for submission and review. These data should also form the permanent record to be used as the basis for required future testing, adjusting, and balancing.
- G. Terminal: The point where the controlled fluid enters or leaves the distribution system. These are supply inlets on water terminals, supply outlets on air terminals, return outlets on water terminals, and exhaust or return inlets on
- H. Final Reports: Upon completion of testing, adjusting, and balancing procedures, prepare final reports on approved forms. Final reports must be complete, factual, accurate, type written, and organized and formatted as specified below. Submit 3 complete sets of final reports.

Report Format: Report forms shall be those standard forms prepared by the referenced standard for each respective item and system to be tested, adjusted, and balanced. Bind report forms complete with schematic systems diagrams and other data in reinforced, vinyl, three-ring binders. Provide binding edge labels with the project identification and a title descriptive of the contents. Divide the contents of the binder into the below listed divisions, separated by divider tabs:

General Information and Summary.

Air Systems.

Hydronic Systems.

Temperature Control Systems.

Special Systems.

Report Contents: Provide the following minimum information, forms and data:

General Information and Summary:

Sheet to identify testing, adjusting, and balancing agency, Contractor, Owner, Architect, Engineer, and Project. Include addresses, and contact names and telephone numbers. Also include a certification sheet containing the seal and name address, telephone number and signature of the Certified Test and Balance Engineer. Include in this division a listing of the instrumentation's used for the procedures along with the proof of calibration.

The remainder of the report shall contain the appropriate forms containing as a minimum, the information indicated on the standard report forms prepared by the AABC and NEBB, for each respective item and

system. Prepare a schematic diagram for each item of equipment and system to accompany each respective report form.

- G. Calibration Reports: Submit proof that all required instrumentation has been calibrated to tolerances specified in the referenced standards, within a period of six months prior to starting the project.

1.05 QUALITY ASSURANCE:

- A. Agency Qualifications:

Employ the services of an independent testing, adjusting, and balancing agency meeting the qualifications specified below, to be the single source of responsibility to test, adjust, and balance the building mechanical systems identified above, to produce the design objectives. Services shall include checking installations for conformity to design, measurement and establishment of the fluid quantities of the mechanical systems as required to meet design specifications, and recording and reporting the results.

An independent testing, adjusting, and balancing agency certified by Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB) in those testing and balancing disciplines required for this project, and having at least one Professional Engineer registered in the State in which the services are to be performed, certified by AABC or NEBB as a Test and Balance Engineer.

- B. Codes and Standards:

AABC: "National Standards for Total System Balance".

ASHRAE: ASHRAE Handbook, Testing, Adjusting, and Balancing.

NEBB: "Procedural Standards for Testing, Adjusting, Balancing of Environmental Systems."

1.06 PROJECT CONDITIONS:

- A. Systems Operation: Systems shall be fully operational prior to beginning procedures.
- B. Sequencing and Scheduling: Test, adjust, and balance the air systems before hydronic systems.

**PART 2 PRODUCTS**

(The following product references are those typically used at UCHC. Contractor shall refer to the contract drawings for specific products)

2.01 TESTING AND BALANCING COMPANIES.

Wing's Testing and Balancing  
(Richard A. Wing)  
94 North Branford Rd.  
Branford, CT 06405

Air Balance Service Co.  
(Charlie Brumley)  
175 South Colony Rd.  
Wallingford, CT 06492

CFM Test and Balance Corp.  
11 Forest ST.  
New Canaan, CT 06840

## **PART 3 - EXECUTION**

### **3.02 PRELIMINARY PROCEDURES FOR HYDRONIC SYSTEM BALANCING:**

Before operating the system perform these steps:

Open valves to full open position. Close coil bypass valves.

Remove and clean all strainers.

Examine hydronic systems and determine if water has been treated and cleaned.

Check existing systems and connections and balance to suit new connections.

Check air vents at high points of systems and determine if all are installed and bleed air completely.

Set temperature controls so all coils are calling for full flow.

Check operation of automatic bypass valves.

Lubricate all motors and bearings.

Check and set operating temperatures of water heating and cooling sources to design requirements.

### **3.03 MEASUREMENTS:**

- A. Provide all required instrumentation to obtain proper measurements, calibrated to the tolerances specified in the referenced standards. Instruments shall be properly maintained and protected against damage.
- B. Provide instruments meeting the specifications of the referenced standards.
- C. Use only those instruments which have the maximum field measuring accuracy and are best suited to the function being measured.
- D. Apply instrument as recommended by the manufacturer.
- E. Use instruments with minimum scale and maximum subdivisions and with scale ranges proper for the value being measured.
- F. When averaging values, take a sufficient quantity of readings which will result in a repeatability error of less than 5 percent. When measuring a single point, repeat readings until 2 consecutive identical values are obtained.
- G. Take all reading with the eye at the level of the indicated value to prevent parallax.
- H. Use pulsation dampener where necessary to eliminate error involved in estimating average of rapidly fluctuation readings.
- I. Take measurements in the system where best suited to the task.

### **3.04 PERFORMING TESTING ADJUSTING, AND BALANCING:**

- A. Perform testing and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards.

- B. Cut insulation, ductwork, and piping for installation of test probes to the minimum extent necessary to allow adequate performance of procedures.
- C. Patch insulation, ductwork, and housings, using materials identical to those removed.
- D. Seal ducts and piping, and test for and repair leaks.
- E. Seal insulation to re-establish integrity of the vapor barrier.
- F. Mark equipment settings, including damper control positions, valve indicators, fan speed control levers, and similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification materials.
- G. Retest, adjust, and balance systems subsequent to significant system modifications, and resubmit test results.

3.05 RECORD AND REPORT DATA:

- A. Record all data obtained during testing, adjusting, and balancing in accordance with, and on the forms recommended by the referenced standards, and as approved on the sample report forms. Specific test results for outdoor air flow rates must be included; values listed on the Drawings are minimum requirements.
- B. Prepare report of recommendations for correcting unsatisfactory mechanical performances when system cannot be successfully balanced.

3.06 TESTING FOR SOUND AND VIBRATION:

- A. Test and adjust mechanical systems for sound and vibration in accordance with the detailed instructions of the referenced standards.

END OF SECTION

## SECTION 15995 AIR FLOW TESTING

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS:

- A. This Section applies equally and specifically to all Contractors supplying labor and/or equipment and/or materials as required under each Section of this Division.

#### 1.02 SUMMARY:

- A. This Section specifies the requirements and procedures for mechanical systems testing. Requirements include measurement and establishment of the fluid quantities of the mechanical systems as required to meet design specifications, and recording and reporting the results.

- B. Test, to include, but not limited to:

- Supply air systems.
- Return air systems.
- Exhaust air systems.
- Outdoor air systems.
- Blower Profiles
- Exhauster Profiles
- Return Fan Profiles

#### 1.03 DEFINITIONS:

- A. Systems testing is the process of checking and adjusting building air flow systems to produce the design objectives.
- B. Test: To determine quantitative performance of equipment.
- C. Adjust: To regulate the specified fluid flow rate and air patterns at the terminal equipment (e.g., reduce fan speed, throttling).
- D. Balance: To proportion flows within the distribution system(submains, branches, and terminals) according to specified design quantities.
- E. Procedure: Standardized approach and execution of sequence of work operations to yield reproducible results.
- F. Report Forms: Test data sheets arranged for collecting test data in logical order for submission and review. These data should also form the permanent record to be used as the basis for required future testing, adjusting, and balancing.
- G. Terminal: The point where the controlled fluid enters or leaves the distribution system. These are supply inlets on water terminals, supply outlets on air terminals, return outlets on water terminals, and exhaust or return inlets on
- H. Final Reports: Upon completion of testing, adjusting, and balancing procedures, prepare final reports on

approved forms. Final reports must be complete, factual, accurate, type written, and organized and formatted as specified below. Submit 3 complete sets of final reports.

Report Format: Report forms shall be those standard forms provided in this specification and labeled SHEET # 1 "Fan Equipment Test Report", SHEET # 2 "Velocity pressure readings", SHEET # 3 "Diffuser & register Test Report", SHEET # 4 "System Static Pressure Profile". Bind report forms complete with schematic systems diagrams and other data in reinforced, vinyl, three-ring binders. Provide binding edge labels with the project identification and a title descriptive of the contents.

**General Information and Summary:**

Include a certification sheet containing the seal and name address, telephone number and signature of the Certified Test and Balance Engineer. Include in this division a listing of the instrumentation's used for the procedures along with the proof of calibration.

The remainder of the report shall contain the appropriate forms containing as a minimum, the information indicated on the standard report forms prepared by the AABC and NEBB, for each respective item and system. Prepare a schematic diagram for each item of equipment and system to accompany each respective report form.

- G. Calibration Reports: Submit proof that all required instrumentation has been calibrated to tolerances specified in the referenced standards, within a period of six months prior to starting the project.

1.05 QUALITY ASSURANCE:

- A. Agency Qualifications:

Employ the services of an independent testing, adjusting, and balancing agency meeting the qualifications specified below, to be the single source of responsibility to test, adjust, and balance the building mechanical systems identified above, to produce the design objectives. Services shall include checking installations for conformity to design, measurement and establishment of the fluid quantities of the mechanical systems as required to meet design specifications, and recording and reporting the results.

An independent testing, adjusting, and balancing agency certified by Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB) in those testing and balancing disciplines required for this project, and having at least one Professional Engineer registered in the State of Connecticut, certified by AABC or NEBB as a Test and Balance Engineer.

- B. Codes and Standards:

AABC: "National Standards for Total System Balance".

ASHRAE: ASHRAE Handbook, Testing, Adjusting, and Balancing.

NEBB: "Procedural Standards for Testing, Adjusting, Balancing of Environmental Systems."

1.06 PROJECT CONDITIONS:

- A. Systems Operation: Systems shall be fully operational prior to beginning procedures.

**PART 2 PRODUCTS**

(The following product references are those typically used at UCHC. Contractor shall refer to the contract drawings for specific products)

2.01 TESTING AND BALANCING COMPANIES.

Wing's Testing and Balancing  
(Richard A. Wing)  
94 North Branford Rd.  
Branford, CT 06405

Air Balance Service Co.  
(Charlie Brumley)  
175 South Colony Rd.  
Wallingford, CT 06492

CFM Test and Balance Corp.  
11 Forest ST.  
New Canaan, CT 06840

**PART 3 - EXECUTION**

3.03 MEASUREMENTS:

- A. Provide all required instrumentation to obtain proper measurements, calibrated to the tolerances specified in the referenced standards. Instruments shall be properly maintained and protected against damage.
- B. Provide instruments meeting the specifications of the referenced standards.
- C. Use only those instruments which have the maximum field measuring accuracy and are best suited to the function being measured.
- D. Apply instrument as recommended by the manufacturer.
- E. Use instruments with minimum scale and maximum subdivisions and with scale ranges proper for the value being measured.
- F. When averaging values, take a sufficient quantity of readings which will result in a repeatability error of less than 5 percent. When measuring a single point, repeat readings until 2 consecutive identical values are obtained.
- G. Take all reading with the eye at the level of the indicated value to prevent parallax.
- H. Use pulsation dampener where necessary to eliminate error involved in estimating average of rapidly fluctuation readings.
- I. Take measurements in the system where best suited to the task.

3.04 PERFORMING TESTING ADJUSTING, AND BALANCING:

- A. Perform testing on each system identified, in accordance with the detailed procedures outlined in the referenced standards.
- B. Cut insulation and ductwork for installation of test probes to the minimum extent necessary to allow adequate performance of procedures.
- C. Patch insulation, ductwork, and housings, using materials identical to those removed.
- D. Seal ducts and test for and repair leaks.



- E. Seal insulation to re-establish integrity of the vapor barrier.
- F. Mark equipment settings, including damper control positions, valve indicators, fan speed control levers, and similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification materials.
- G. Retest, adjust, and balance systems subsequent to significant system modifications, and resubmit test results.

3.05 RECORD AND REPORT DATA:

- A. Record all data obtained during testing in accordance with, and on the forms recommended by the referenced standards, or on the attached report forms. Specific test results for outdoor air flow rates must be included.
- B. Prepare report of recommendations for correcting unsatisfactory mechanical performances when systems test below code air flow.

END OF SECTION

**SECTION 16000**  
**ELECTRICAL SYSTEMS DESCRIPTIONS**

The project includes the following individual specification sections which define systems, products, installation and standards not defined on contract drawings:

<u>#</u>	<u>TITLE</u>
<b>16010</b>	<b>General Provisions</b>
<b>16050</b>	<b>Basic Materials and Methods</b>
<b>16510</b>	<b>Interior Lighting</b>
<b>16740</b>	<b>Telecommunications Outlets</b>

END OF SECTION

## SECTION 16010

### GENERAL CONDITIONS FOR ELECTRICAL

#### PART I – GENERAL

##### 1.01 DESCRIPTION

- A. Specification sections, general conditions, supplemental general conditions and drawings are to be considered integral parts of this Contract.
- B. Where items of the General Conditions are repeated in another Section of the Specifications, it is merely intended to qualify or to call particular attention to them. It is not intended that any other parts of the General Conditions be omitted if not repeated.
- C. This Section applies equally and specifically to all Contractors supplying labor and/or equipment and/or materials as required under each Section of this Division.

##### 1.02 INTENT

- A. It is the intent of the Drawings and Specifications to call for finished work, tested and ready for operation.
- B. Any apparatus, appliance, material or work not shown on the Drawings but mentioned in the Specifications, or vice versa, or any incidental accessories necessary to make the work complete and perfect in all respects and ready for operation, even if not particularly specified, shall be furnished, delivered and installed under their respective Division without additional expense to UCHC.

##### 1.03 DEFINITIONS FOR DIVISION 16000

- A. The word "Subcontractor" or "Contractor" means specifically the electrical subcontractor working under this Division. Other Contractors are specifically designated "Plumbing Subcontractor", "General Contractor" and so on. Prime contractor shall be responsible for coordination and execution of all work.
- B. The word "install" shall mean set in place complete with all mounting facilities and connections as necessary to be ready for normal use.
- C. The words "furnish" or "supply" shall mean purchase, deliver to, and off-load at the job site, all ready to be installed including where appropriate all necessary interim storage and protection.
- D. The word "provide" shall mean furnish (or supply) and install (including configuring for the application) as necessary.
- E. The words "approved equal," means any product, which, in the opinion of the UCHC Agent, is equal in quality, arrangement, appearance, and performance to the product specified.
- F. The word "wiring" shall mean cable assembly, raceway, conductors, fittings, hangers, tray and any other necessary accessories to make a complete wiring system.
- G. The word "product" shall mean any item of equipment, material, fixture, apparatus, appliance or accessory installed under this Division.

1.04 SURVEYS AND MEASUREMENTS

- A. **Before submitting** his Bid, the Electrical Contractor shall visit the site and shall become thoroughly familiar with all conditions under which his work will be installed as he will **be held responsible** for any assumptions, omissions or errors he makes as a result of his failure to become familiar with the site and the Contract Documents.
- B. Should the Electrical Contractor discover any **discrepancies** between actual measurements and those indicated which prevent following good practice or the intent of the Drawings and Specifications; he shall notify the UCHC Agent and shall not proceed with that work until he has received instructions from the UCHC Agent.

1.05 CODES AND STANDARDS

- A. The Codes and Standards listed below apply to all electrical work. Wherever Codes and/or Standards are mentioned in these Specifications or drawings, the **latest applicable** edition or revision shall be followed, including but not limited to:  
 IES - Illuminating Engineering Society Lighting Handbook  
 International Fire Code  
 Connecticut State Building Code  
 National Electrical Code - NEC  
 Underwriters Laboratories, Inc. - UL  
 National Fire Protection Association - NFPA  
 Factory Mutual Insurance Company - FM  
 NEMA - Standards
- B. All materials furnished and all work installed shall comply with the rules and recommendations of the NFPA, the requirements of the local utility companies, the recommendations of the fire insurance rating organization having jurisdiction and with the requirements of all Governmental departments having jurisdiction. All materials and equipment **shall be listed** by Underwriter's Laboratories Inc., or equivalent organization, and bear the approval label.

1.06 ACCESSIBILITY:

- A. Install all work with proper facilities for access for inspection, operation, maintenance and repair. Minor changes from the drawings will be permitted in order to accomplish this, but major changes shall not be made without prior written approval from the UCHC Agent.
- B. Furnish and install access doors where products requiring access are installed behind plaster or gypsum board finishes.
- C. Group as many items as practicable together to minimize the number of access doors required. Direct and be responsible for the correct location of all access doors required for the work of this Division.
- D. Access doors shall be the flush type, ready to install and a minimum of 18" by 18". They shall be constructed of 14 gauge or heavier steel with radial safety corners and finished with zinc chromate coating. All doors shall have heavy-duty concealed hinges of the pin-less type to insure no rusting or wearing. All doors shall have sturdy screwdriver locks. In public areas less than 7' AFF doors shall have cylinder locks. Where clearances do not allow doors to swing open, they shall have double butt hinge or snap-on clips for quick removal.

#### 1.07 RECORD DRAWINGS

- A. Maintain a record set of Electrical Drawings at the job site on which any changes in location of equipment and conduits shall be recorded. These shall be clearly marked on a clean set of drawings at the completion of work for Record Drawings and turned over to the UCHC Agent.

#### 1.08 MATERIALS AND WORKMANSHIP

- A. All materials and equipment required for the work, except as otherwise specified in contract drawings or specifications, shall be new and of first-class quality and shall be furnished, delivered, installed and finished in every detail and so selected and arranged as to fit properly into the building spaces. Where no specific kind or quality of material is given, a first-class standard article as accepted by the UCHC Agent shall be furnished.
- B. The Electrical Contractor shall furnish the services of an experienced foreman who shall be constantly in charge of the installation of the work, together with all skilled workmen, helpers and labor required to unload, transfer, erect, connect, adjust, start, operate and test each system.
- C. Unless otherwise specifically indicated on the Drawings or in the Specifications, all equipment and materials shall be installed with the acceptance of the UCHC Agent and in accordance with the recommendations of the manufacturer. This includes the performance of such tests as the manufacturer recommends.
- D. All work shall be of a quality consistent with good trade practice and shall be installed in a neat, workmanlike manner. The UCHC Agent reserves the right to reject any work, which, in his opinion, has been installed in a substandard, dangerous or unserviceable manner. The Electrical Contractor shall replace said work in a satisfactory manner at no extra charge to the Owner.
- E. The contractor shall clean the area and equipment when completed. This shall include, but not be limited to, vacuuming, touchup painting, etc.

#### 1.09 PRELIMINARY OPERATION

- A. Operate electrical systems with required supervision for at least two full days prior to substantial completion. Make necessary adjustments and check proper operation.

#### 1.10 TESTING:

- A. Perform the required tests in the presence of the UCHC Agent and representative of the Authority Having Jurisdiction. Provide minimum of (10) working days notice of testing to all parties concerned. Provide all test equipment.
- B. Furnish certification of satisfactory testing, signed by subcontractor's authorized representative countersigned where appropriate by the authority having jurisdiction.
- C. All test equipment shall be calibrated by a recognized firm, sticker with date and reference # and in Date. All **testing and certification shall be complete** before any claim for completion will be considered.

#### 1.11 OWNERS MANUAL:

- A. **Thirty-days prior** to claim for completion submit 3 copies of the Operating & Maintenance Manual. Each binder of the manual shall be **titled (both on the front and edge), 1" to 3" diameter 3-ring loose leaf and**

divided with Mylar tabbed separators by subject matter (lighting, panelboards, etc.). Each binder shall be less than **60% full** (1" binder shall have no more than 0.6" of filling).

B. **The manual shall contain** the following:

Table of Contents

Operating instructions

**Maintenance instructions**

Manufacturers catalog sheets

List of materials used on project

Service call list

Installation instructions packaged with equipment

Parts list for items replaced under regular maintenance

Guarantees and warranties for each piece of equipment with the purchase order number, effective dates and the contact name and phone number.

8-1/2" x 11" and 11" x 17" wiring diagrams

**Copy of panelboard indexes**

1.12 TRAINING:

A. Furnish all necessary labor and services for the UCHC specified period to instruct the Owner's staff in the operation of all systems and equipment provided **prior to claim for completion**. Include the services of manufacturers' technical personnel to instruct the Owner in the use, adjustment and maintenance of systems. Instruction shall include sufficient demonstration of equipment and systems, explanation of furnished technical manuals and instruction in the use of any special tools or instruments so that the Owner will be fully conversant and knowledgeable of operating and maintenance procedures.

B. The training shall use the Owners Manuals provided above. Copies of sections of the manual shall be provided to each trainee as required during the training.

1.13 DEMOLITION AND DISPOSAL

A. Deliver equipment requested to be saved by the UCHC agent to the UCHC Electrical Department. Everything else shall be disposed of or recycled, properly and legally.

B. Remove all raceway that will not be reused back to the contract boundary. Reused raceway must be brought up to UCHC 16050.

C. Remove all unused **wiring** back to the protection device.

D. Abandoned **cables shall be removed**. Cable that is not terminated at equipment and not identified for future use with a tag will be considered as abandoned.

E. Fire alarm component(s) shall not be removed or altered (covered) until coordinated through the UCHC fire department.

1.14 USE OF BUILDING:

A. The **building will be occupied** during the duration of this contract.

B. No work shall proceed until a **written schedule** is submitted to the UCHC Agent and his permission is obtained.

- C. **Power shall not be affected** to areas outside the contract area without written UCHC approval. Approval entails at least one-week notification of the affected building occupants by UCHC.
- D. Electrical closets may be used for temporary storage subject to following:
  1. Permission to use shall be obtained from Electrical through the UCHC agent
  2. Nothing shall be within 3 feet of existing electrical equipment
  3. No trash or empty boxes shall be in the closet, a box 10% full is empty
  4. No loose paper shall be in the closet
  5. No liquids shall be in the closet
  6. No work shall be done in the closet
  7. All items shall be removed before the job is completed

#### 1.15 ENERGY SAVINGS

- A. This contract shall take advantage of any and all CL&P Conservation and Load Management programs for “energy efficient technologies” and/or all State of Connecticut “state buildings program monies”.

#### 1.16 CLEANLINESS

- A. All equipment shall be cleaned both inside and outside of dust, dirt, etc to like new condition
- B. All extra parts, components, paper, etc shall be removed from the area and inside of equipment

#### 1.17 REPAIR OF SITE LIGHTING CABLE

- A. Site lighting cable shall not be repaired by splicing.
- B. Site lighting cabling faults shall be repaired by replacing the existing cable with identical or better cable as approved by the UCHC Coordinator.
- C. The cable shall be installed in conduit per UCHC specification 16533

#### 1.18 PRODUCT DATA SUBMITTALS

- A. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information.

- B. Submittals shall be approved by the UCHC before procurement.
- C. Submittal Format: Refer to Architectural Section 01300 Submittals.

### **PART 2 –PRODUCTS – Not Used**

### **PART 3 –EXECUTION – Not Used**

END OF SECTION

**SECTION 16050**  
**BASIC MATERIALS AND METHODS**

**PART I - GENERAL**

1.01     GENERAL PROVISIONS

- A.     Section 16010 is a part of this Division and is to be considered a part of this Contract.
- B.     Electric Powered Facility Equipment shall be provided compliant with 16060.

1.02     DESCRIPTION

- A.     **Contractors** are to comply with this document as a standard of quality and performance characteristics for basic material selection and installation methods.
- B.     **Designers** are to comply with this document in the preparation of contract drawings. These specifications are to be submitted in their entirety to the contractor.
- C.     Following is a table of contents for Parts 2 and 3 of this document:

PART 2 - PRODUCTS provides a description of:

2.01	RACEWAYS AND FITTINGS
2.02	PANELBOARDS
2.03	CIRCUIT BREAKERS
2.04	WIRE AND TERMINATIONS
2.05	SAFETY SWITCHES
2.06	FUSES
2.07	ENCLOSURES
2.08	OUTLET AND JUNCTION BOXES
2.09	RECEPTACLES
2.10	WALL PLATES
2.11	FIRE-STOPS AND WATER SEALS
2.12	WARNING TAPE
2.13	CLOCKS
2.14	TRANSFORMERS
2.15	TIMERS

PART 3 - EXECUTION provides a description of requirements and installation methods to be us following:

3.01	GENERAL
3.02	RACEWAYS
3.03	TRANSFORMERS
3.04	GROUNDING
3.05	BOXES AND ENCLOSURES
3.06	WIRE AND TERMINATIONS
3.07	SLEEVES AND INSERTS
3.08	FIRE-STOPS, SEALS AND SPECIAL FITTINGS
3.09	IDENTIFICATION SYSTEMS
3.10	SAFETY SWITCHES
3.11	PANELBOARDS
3.12	LOAD BALANCE



3.13	WARNING TAPES
3.14	WORKMANSHIP
3.15	INSPECTION AND ACCEPTANCE TESTS

#### 1.03 GENERAL REQUIREMENTS

- A. All materials and equipment shall be new and of **first-class quality**. The material shall be furnished, delivered, installed, connected and finished in every detail and shall be so selected and arranged as to fit properly into the building spaces. Where no specific kind or quality of material is specified, a first-class standard article as accepted by the UCHC Agent shall be furnished.
- B. The **nameplate** of a subcontractor, contractor or distributor shall **not be affixed** to any equipment.
- C. All electrical equipment shall bear the Underwriters' Laboratories' **(UL) label**.
- D. Existing **panelboards shall not be relocated**; they are to be replaced with a new panel and breakers when the panelboard has to be relocated. The **feeder** shall not be spliced.
- E. Specifications on **contract drawings** that specify a product by model number, type, series, etc. shall **take precedence** over product specified herein.
- F. **Relocatable power taps** shall not be used.
- G. **Tamper resistant** receptacles shall be used in waiting rooms.
- H. Space in electrical closets is at a premium and equipment shall not be mounted there except where explicitly specified in contract drawings. Mounting locations in electrical closets shall be approved by the UCHC agent **prior** to equipment being located
- I. Electric panels shall

#### 1.04 DESIGN REQUIREMENTS

- A. **Corridors** shall be designed with housekeeping receptacles every 40 feet on a separate circuit(s).
- B. A **GFCI** receptacle shall not protect more than one outlet.
- C. Outlets that serve **countertops** with faucets that are within 6 feet shall be protected by GFCIs.
- D. In **office areas**, up to four employee workstations shall be powered by each 20-amp branch circuit. Each employee shall be provided with a minimum of three duplex receptacles.
- E. A critical emergency power outlet shall be available for a **crash cart**.
- F. On new circuit breaker **panelboard installations** a coordination study and short-circuit analysis shall be provided with the applicable submittals.
- G. Each feeder and branch circuit shall be **identified** on the construction drawings.
- H. A utilization device drawing **8 amps** or more (i.e. a copier) shall have a dedicated branch circuit.
- I. In the main complex, provide only Simplex automatic correction **clocks**, reference 2.1.3.

**PART 2 - PRODUCTS** (The following product references are those typically used at UCHC. Contractor shall refer to the contract drawings for specific products).

2.01 RACEWAYS

- A. Rigid Galvanized Steel Conduit (RGS) - All threads shall be **galvanized after cutting**. Conduit shall be 3/4 inch or larger.
- B. Electrical Metallic Tubing (EMT) - Couplings and connectors shall be **compression** type; indent screw or crimp type connectors are not acceptable. Tubing shall be 3/4 inch or larger.
- C. Rigid Non-Metallic Conduit (PVC) - The Conduit shall be used with standard PVC couplings, fittings and boxes, and a solvent cement specifically intended for use with PVC. All PVC Conduits shall be **Schedule 80** and 3/4 inch or larger.
- D. Metal-Clad (MC) Cable – where MC is acceptable for use, only **galvanized armor** shall be used. Fittings to be screw type, not clip.
- E. Armored Cable (AC) – when used in patient care areas this shall be AFC – model HCF-90 or approved equivalent.
- F. Flexible Metallic Conduit (FMC) - Fittings shall be galvanized or **copper-free** aluminum type. Flexible Metallic Conduit shall be 1/2 inch or larger
- G. Liquid tight Flexible Metallic Conduit - All **liquid tight** flexible metallic conduit shall be used with liquid tight fittings. The conduit shall be 1/2 inch or larger.
- H. Wireways - The complete wireway shall be constructed of sheet metal finished with **rust inhibiting** phosphate coating and gray baked enamel finish. Wireway shall be furnished with a hinged cover, spring steel wire retainer, and without knockouts. The wireway shall be as manufactured by SquareD, General Electric or Cutler-Hammer.
- I. No die cast fittings shall be used.
- J. Surface Raceways –
  - General - Surface raceways shall only be permitted as directed on the drawings, specifications, or by the UCHC Agent. Alternate manufactures with identical features will be considered as submitted.
  - Office areas – Use non-metallic raceway per specification 16110.
  - Office Area (when retrofitting existing Wiremold series 4000) - Nonmetallic overlapping device plates shall be used.
  - Patient Care Areas - Raceway components shall be two-piece steel Wiremold series 4000 in the standard ivory finish.
  - Plugmold™ or similar equipment shall not be used.

2.02 PANELBOARDS

- A. Panelboards shall be as manufactured by **Square "D", General Electric or Cutler-Hammer** and shall be of the same manufacturer in a project.
  - Standard **surface mount** 120/208-volt lighting and appliance panelboard specification:
    - For a 30kVA service:
      - 1 - 100 Amp 208 Volt 3 phase 4 wire, 30 circuit, 20" wide X 29" high, NEMA1, SquareD, NQOD
      - 1 -- NQOD430M100CU interior with main installed with 200% rated neutral
      - 1 -- MH29 back box
      - 1 -- MHC29S surface mount front with **hinged trim front**
      - 6 -- QOB120 single pole 20A breakers installed as spares in addition to those required for the project

- B. Panelboards shall have a hinged **locking** metal door and shall be keyed alike with 2 keys supplied per panelboard. Panelboards shall have **hinged trim** or door-in-door construction held closed by screws or a lock. Opening the trim at the hinge shall expose the gutters. There shall be a directory frame welded to the inside of the door.
- C. Panelboards shall have distributed phase bussing throughout. Gutters shall be the maximum standard width. All panelboards shall have **copper busing** and **bolt-on breakers**.
- D. Panelboards with **200% rated neutrals** shall be used in applications where 50% or more of the load could be Non-Linear (i.e. Computers, Copiers, VSD's, UPS's, etc.). At least 100% rated neutral shall be used in other applications.
- E. Panelboards with **200% neutrals** shall have neutral conductor back to the transformer sized for 173% of phase conductor.
- F. Panelboards shall be furnished with a **main breaker** if it is not in sight of a disconnecting means or is on a buss with other panels.
- G. **Load centers** shall not be used.
- H. Panelboards shall be **flush mounted** in areas with finished walls.
- I. A minimum of 9 **spare** breaker poles shall be provided in each panelboard or switchboard unless otherwise approved in writing by UCHC. In 208 panels fill 6 of those spare poles with spare 20 amp breakers.
- J. Panelboards shall have an **equipment ground bar**.
- K. Contractor shall submit both a **short circuit and coordination study** to the UCHC agent for panelboard installations that are fed from AB043, AB005 or CG008. This study shall be submitted before the panelboard submittal.

#### 2.03 CIRCUIT BREAKERS

- A. Branch circuit breakers shall be **thermal-magnetic** bolt-on type with visible trip position.
- B. All multi-pole breakers shall have a common trip. Single-pole breakers equipped with **handle ties** for multi-pole use shall not be used.
- C. Circuit breakers used for controlling lighting circuits shall be UL rated for **switching duty**.
- D. Circuit breakers shall be from the **same manufacturer** as the panelboard or switchboard manufacturer.
- E. Breakers provided for panels that do not have lockable doors shall be capable of being padlocked **without use of an adapter**.

#### 2.04 WIRE AND TERMINATIONS

- A. All building lighting and power conductors shall be rated at **600 Volts** and carry the appropriate UL label.
- B. Black (A), red (B), blue(C) and white (neutral) shall be used for 208/120-Volt distribution systems.
- C. Brown (A), orange (B), yellow (C) and white (neutral) shall be used for 480/277-Volt distribution systems.
- D. Compression type terminals equivalent to T&B "Color Keyed" shall be used. **Bolted type** shall not be used.
- E. Use THHN insulation for dry and 90°C maximum operating temperature applications unless otherwise specified or approved by UCHC Agent.

- F. The grounding conductor for each isolated ground receptacle outlet shall be **green with a stripe**. A different colored stripe shall be used for each receptacle outlet.
- G. Wire not in a raceway shall be UL listed as **plenum cable**.
- H. Wire shall be no smaller than the following minimum sizes:
1. Lighting and Power Wiring - #12 AWG with 600 Volt insulation
  2. Control Wire up to 50 Volts - stranded #16 AWG with 600-Volt insulation
  3. Control Wire at 120Volts –stranded #12 AWG with 600-Volt insulation
  4. Paging System speaker wire – stranded #18AWG with 300-volt insulation.
- Exceptions: Wiring in compliance with NEC Article 725.

#### 2.05 SAFETY SWITCHES

- A. Safety switches shall be UL listed and of the **heavy-duty** (TH) fused or (THN) non-fused type as manufactured by General Electric, Square D or Cutler-Hammer. They shall be lockable in the off position.
- B. The switches shall be in enclosures suitable for the environment in which they will be installed. Enclosures used out doors shall be stainless steel or non-metallic.

#### 2.06 FUSES

- A. Replacement fuses for 0 to 600 Ampere circuits shall be **current limiting** Bussmann Low-Peak dual-element fuses or approved equal by Hi-Cap or Limitron. The fuse shall hold 500% of rated current for a minimum of 10 seconds with an interrupting rating of 200,000 Amperes RMS symmetrical.

#### 2.07 ENCLOSURES

- A. Non-flush mounted units shall be fabricated of Code-gauge steel meeting or exceeding the requirements of the NEC. Units shall have a gray, baked enamel finish and be provided with knockouts for the size of the raceway to which they are connected.
- C. Flush mount enclosures to be recessed in finished walls shall be constructed of Code-gauge steel, finished with gray, baked enamel and furnished with conduit knockout holes and flush combination trim cover and door assembly at least two inches higher and two inches wider than the box dimensions. The door shall be furnished with a continuous, concealed-type hinge and lockable panelboard type latches.
- D. Enclosures used outdoors shall be stainless steel or non-metallic.

#### 2.08 OUTLET AND JUNCTION BOXES

- A. Boxes and accessories shall be made from 14-gauge hot-rolled steel and protected from rust and corrosion by zinc galvanizing. Boxes and component parts shall be as manufactured by Raco, Steel City or Appleton.
- B. Where conduit is exposed boxes shall be **drawn-type** with covers to fit devices used.
- C. Where exposed to weather or wet locations, boxes shall be threaded hub type and provided with **watertight** covers and gaskets.
- D. Solid gang boxes shall be used; **no “built-up” boxes** shall be used.

- E. Minimum box size shall be **4 inches square**.
- F. **Extension boxes or rings** to extend a box are not permitted.

2.09 RECEPTACLES

- A. All 120VAC receptacles shall be:
  1. Rated for **20 ampere**
  2. **Ivory** with the following exceptions:
    - Isolated ground shall be orange
    - Emergency shall be red
    - Emergency with isolated ground shall be orange and have red faceplate
  3. Tamper resistant in **waiting** areas, **family** areas, **psychiatric** areas and **maternity** rooms. They shall be compliant with 2.09 B

- B. **Hospital grade** receptacles shall be used exclusively in Buildings H, F and C and in any other **patient care areas**. Specification grade receptacles shall be used in all other areas; no commercial or residential grade receptacles shall be used at UCHC. Reference the following:

**Items 1, 3, 8, 9, 11 and 12** shall be as manufactured by Pass and Seymour only – no substitutions permitted

**The remaining items** shall be as manufactured by Leviton, Hubbell, Pass and Seymour, GE or Arrow Hart equivalent to the following Leviton part numbers:

		NORMAL	EMERGENCY
1.	Patient Care Use duplex	PT8300IL-I	PT8300IL -RED
2.	Patient Care Use single	8310-I	8310-R
3.	Patient Care Use GFCI	PT2095HG-I	shall not be used for emergency
4.	Patient Care Use isolated ground - duplex	shall not be used because there is no redundant ground	
5.	Patient Care Use isolated ground - single	shall not be used because there is no redundant ground	
6.	Patient Care Use surge protection - quad	8490-I	8490-R
7.	Patient Care Use surge protection - duplex	8380-I	8380-R
8.	Patient Care Use tamper resistant	PT2095HGTR-I	PT2095HGTR-RED
9.	General Use duplex	PT5362A-I	PT5362-R
10.	General Use single	5361-I	5361-R
11.	General Use GFCI	PT2095-I	PT2095-RED
12.	General Use isolated ground - duplex	PTIG5362-I	PTIG5362-RED
13.	General Use surge protection - quad	5490-I	5490-R
14.	General Use surge protection - duplex	8380-I	8380-R

- C. All 250 VAC 20 AMP receptacles shall be NEMA 6-20R type (straight blade) as manufactured by Leviton, Hubbell, GE or Arrow Hart equivalent to the following Leviton part numbers:

1.	Hospital Use duplex	GE 8400-2
2.	General Use duplex	GE 5462-2
3.	General Use single	GE 4182-2

- D. All 250 VAC 30 AMP receptacles for use in L building labs shall be NEMA L6-30R (locking type) as manufactured by Hubbell, GE or Arrow Hart equivalent to the following:

1.	General Use	single	GL0630
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2.10 WALL PLATES

- A. Receptacle wall plates shall be ivory (red for emergency) colored **nylon**. Switch wall plates shall be ivory colored **nylon**.
- B. Wherever switches are **grouped**, they shall be ganged into one box and provided with a **one-piece** gang plate to suit the installation.
- C. Plates for **telephone** and data outlets are defined in section 16740.
- D. Plates for exposed installations in unfinished areas shall be raised galvanized steel.

2.11 FIRE-STOPS AND WATER SEALS

- A. Fire stop compound shall be a UL approved sealant with a **3-hour** rating.
- B. **Water seals** for conduits entering building shall be provided and installed by the Electrical Contractor.

2.12 WARNING TAPE

- A. Warning tape shall be **4 inches** wide and have an **aluminum foil core** encased in a color-coded protective plastic jacket. The tape shall be capable of being detected with metal detectors when buried at a four feet.
- B. Standard legends shall be marked **continuously** along the entire length of the tape
- C. **Red safety tape** imprinted with "CAUTION - ELECTRIC LINE BURIED BELOW" shall be used for all buried electric cabling.
- D. **Orange safety tapes** shall be imprinted with "CAUTION - TELEPHONE LINE BURIED BELOW" or "CAUTION - TELEVISION CABLE BURIED BELOW".

2.13 CLOCKS (for buildings A, B, C, E, F, K, L and H only)

- A. Clocks shall be round Simplex Analog Electronic clocks supervised with a 8775 HZ carrier as follows:

<u>FOR LARGE AREAS</u>		<u>FOR OFFICES OR PATIENT ROOMS</u>	
6310-8015	Electronic Analog Clock	6310-8015	Electronic Analog Clock
6310-7002	12"round surface	6310-7002	9"round surface
6310-6301	120VAC	6310-6301	120VAC
6310-5001	Black case	6310-5001	Black case
6310-4001	Designer Dial	6310-4001	Designer Dial
6310-3001	Designer Hands	6310-3001	Designer Hands
6310-0618	8775Hz Receiver	6310-0618	8775Hz Receiver
2975-9038	Back box	2975-9034	Back boxes

2.14 TRANSFORMERS

- A. General-purpose transformers shall be UL listed and of the dry type with **115°C** rise Class 220 insulation such as Square D WATCHDOG type or equivalent as manufactured by General Electric or Cutler-Hammer.

- B. Applications where **50% or more of the load is Non-Linear** (i.e. Computers, VSD's, UPS's, etc.) a class K13 rated transformer shall be used. Use Square D model NL or equivalent as manufactured by General Electric or Cutler-Hammer. Typical 30T3HF15CUN for a 30kva transformer.
- C. The UCHC Agent shall approve transformers for other applications in advance.
- D. Transformers are to be “Energy Star” and eligible for the CL&P rebate to UCHC.
- E. Transformers to be all copper wiring.

#### 2.15 TIMERS

- A. Timers shall be astrological and account for daylight savings time.

### PART 3 - EXECUTION

GENERAL (**Reference** sections 1.03 General Requirements and 1.04 Design Requirements for addition information)

- A. The Contractor shall **coordinate** his work with other trades involved so that exact locations may be obtained for all switches, outlets, apparatus, appliances and wiring.
- B. If so directed by the UCHC Agent, it shall be understood that any light switch or electrical outlet may be relocated within a distance of ten (10') feet from the location shown on the Drawings at **no additional cost** to the UCHC Agent.
- C. Parallel blade receptacles shall be installed so that the **ground pin or grounded conductor (neutral) blade** socket is facing up.
- D. Electrical equipment, such as junction boxes, pull boxes, controls and apparatus shall be installed **accessible**.
- E. All outlets shall be mounted below **electric radiation** unless the outlet is mounted integral with the radiation.
- F. The Electrical Contractor shall seal conduits passing into the building **watertight**.
- G. A-B-C type **wiring arrangement** (left-to-right, top-to-bottom, and front-to-rear) shall be used throughout.
- H. Fuses shall be installed such that the size is readily **visible**.
- I. Provide a label in a visible location near the fuseholder indicating UL **fuse class and size**.

#### 3.02 RACEWAYS

- A. **Application:**
  - Outdoors – use Rigid Non-metallic Conduit except:
    - Concealed or above ground – use Rigid Metal Conduit
    - Where not subjected to damage and at least 10 feet above ground level use rigid non-metallic conduit schedule 80 (RMC).
    - Underground use rigid non-metallic conduit schedule 80 (RMC).

- When connecting to equipment - use Liquid tight Flexible Metal Conduit (LFMC)
  - Indoors in **patient care areas** - use Electrical Metallic Tubing, except:
    - In exposed **finished** areas use metal surface raceway.
    - When necessary for fishing in concealed spaces Armor Clad Cable (AC) may be used when approved by the UCHC agent. Metal Clad (MC) cable shall **NOT** be used
    - Up to a 6 foot AC cable whip shall be used for luminaires to lighting junction box. Luminaires shall not to be "**daisy chained**".
  - Indoors **not in** patient care areas - use Electrical Metallic Tubing, except:
    - When connecting to equipment use Flexible Metal Conduit (FMC) or Liquid tight Flexible Metal Conduit (LFMC) not to **exceed 6 feet**.
    - In unfinished areas subject **to abuse** use Rigid Metal Conduit
    - In exposed **finished** areas use surface raceway as in 16110.
    - Up to a 6 foot MC whip may be used to tie in luminaires to a junction box. Luminaires are not to be "**daisy chained**".
- B. Conduit shall be **concealed** below floors, above ceilings and in walls in all finished areas.
- C. In this specification, the word "**conduit**", without a modifying adjective, refers to Galvanized Rigid Steel (GRS), Intermediate Metallic Conduit (IMC), Electrical Metallic Tubing (EMT) and Rigid Non-Metallic Conduit – PVC.
- D. Conduit shall be supported to prevent distortion and misalignment during wire pulls.
  - Individual conduits shall be supported by means of adjustable **malleable** hangers placed not more than 8'-0" on center. Perforated pipe straps or wire shall **not be acceptable**.
  - Conduit shall be grouped together and run parallel to building lines and as tight to the building structure as possible. Steel channel racks or struts with vertical hanger rods at both ends shall be used to support parallel runs. Provide space on the rack for **25 percent additional conduit**.
  - Supports for conduit on concrete **masonry walls** may be attached to walls, with all-metal expansion shields.
- E. Exposed conduit passing vertically through floor slabs shall be **grouped** together, and in no case shall the conduits block openings or work access.
- F. Corrosion protection (cold galvanizing) shall be applied on field cut threads of rigid metal conduit. This corrosion protective compound must also be electrically conductive to maintain the effective ground-fault current path. Currently there is no product ("Zinc Rich Paint", ZRC) that is listed for this purpose, so a product that is recommended by the raceway manufactures shall be used and it shall be applied in accordance with the instructions of the compound manufacturer.
- G. Conduits shall not be installed in **structural concrete floors or slabs**. All conduits installed below slabs shall be located in the sub-grade at 36" to permit a uniform thickness when the floor or slab is poured.
- H. A minimum of 6-inch clearance shall be maintained between **conduit and piping**. A minimum of 12-inch clearance shall be maintained between conduit and heat sources such as steam pipes, flues or heating appliances.
- I. All conduits shall be installed free of dents and be fished before pulling wires. All conduits shall be suitably protected against damage and the entrance of dirt and moisture during construction.



- J. The ends of all conduits shall be cut square and **reamed**. Conduit connections to boxes shall be with malleable iron insulated bushings. Grounding bushings shall be provided at panel connections.
- K. Conduit shall not cross between buildings except when necessary and pre-approved by the UCHC Agent.
- L. UL approved **expansion couplings** shall be used when crossing building joints and to compensate PVC conduit for thermal expansion.
- M. Conduit penetrations through walls, floors, and ceilings or between heated and unheated areas and laboratory animal use rooms shall be **sealed**.
- N. Conduits passing through built-up roofs or waterproof membranes shall be installed with flashing and **pitch boxes** in order to provide watertight joints.
- O. Pull boxes shall be installed as minimum after the equivalent of every **three (3) 90° bends**.
- P. Particular care shall be paid to **drainage** for conduit runs. Wherever possible, conduit runs shall be installed so as to drain to one or both ends of the run. Where pockets or inverted loops are impossible to avoid, low points in the conduit shall be drilled to allow them to drain.
- Q. Connections to motor frames shall have a **minimum** of 18 inches and a max of 6 feet of flexible metallic conduit with bonding jumper. Connections shall have UL listed grounding fittings.
- R. Hydraulic one-shot conduit bender or factory bends shall be used for all **bends** in conduit larger than two (2") inches in size. Conduit bodies may be used to make changes in direction where elbows are not practical.
- S. Seismic lateral restraints designed and constructed to resist horizontal movement in any direction shall be installed on **all suspended conduits** 2-1/2 inches in diameter or greater. Quantity and location of the lateral restraints shall be based on the conduit system layout and in general shall be installed at conduit bends, J-boxes and approximately every 20 feet along conduit runs. Seismic lateral restraints are not required for any piping suspended by individual hangers 12 inches or less in length from the top of the conduit to the bottom of the support for the hanger.
- S. Wireway openings shall **face up if accessible for service**, and if that is not possible, to the side.

### 3.03 TRANSFORMERS

- A. Transformers shall not be installed **above the ceiling**.
- B. The tap shall be set to yield 120VAC or 277VAC at the transformer secondary at **actual** connected load.

### 3.04 GROUNDING

- A. **GROUNDING SYSTEM** - The electrical system, which includes switchboards, panelboards, transformers, motor frames, metal conduit, raceways, metal enclosures (such as pull boxes, junction boxes etc.), and enclosures for electrical devices and conductive, non-current-carrying material and other equipment, shall be made to form a continuous, conducting, permanent ground path of **low impedance** to enhance the safe conduction of ground fault currents and facilitate the operation of the circuit protective devices within the circuit. The ground path between all grounded items shall be installed and arranged to prevent objectionable, continuous current flow over grounding conductors or grounding paths.
- B. **SEPARATELY DERIVED SYSTEM** - Transformers, generators, **UPSs**, converters or other separately derived systems, which do not have a solidly grounded circuit conductor or other direct electrical connection

with the supply conductors, shall be grounded. A properly sized bonding jumper shall connect the equipment grounding conductors of the derived system to the grounded conductor. A grounding electrode conductor, which shall be sized according to the NEC, shall be used to connect the grounded conductor of the derived system with the grounding electrode. The grounding electrode of the separately derived system shall be the nearest available, effectively grounded structural steel member or other grounding electrode as specified by the NEC.

- C. **GROUNDING ELECTRODE CONDUCTOR** - Grounding electrode conductors shall be insulated stranded copper installed in one continuous length **without splice** or joint and identified with green insulation. All grounding conductors shall be installed in raceway or as part of a cable assembly and shall be protected from **physical damage**. All grounding conductors shall be sized in accordance with the NEC.
- D. **CONNECTIONS** - Positive ground connections with the grounding conductors shall be made at each outlet box, luminaire, and motor and other equipment components by means of a positively secured grounding clamp or screw, **no clips shall be used**. Connections to grounding rods, building steel or other grounding electrode conductors shall be made with Cadweld, exothermic weld process. Connections to pipes shall be made with approved clamps.
- E. **BONDING** - **Bonding** shall be provided where necessary to assure electrical continuity and the capacity to safely conduct any fault current likely to be imposed. Bonding shall be accomplished through the use of the following:
- Pressure connectors or clamps
  - Wrench-tight, threaded couplings on enclosures when used with rigid metal conduit or intermediate metal conduit
  - Tight threadless couplings and connectors when used with rigid metal conduit intermediate conduit and electrical metallic tubing
  - Bonding jumpers when used around concentric or eccentric knock-outs
  - Bonding-type lock nuts and bushings
  - Bonding jumpers shall be **copper**.
- F. **GROUNDING ELECTRODE SYSTEM** - If available, **each** of the following items shall be bonded together to form the **grounding electrode system**:
- Incoming metal underground water service pipes in contact with the earth for more than ten (10') feet supplemented with grounding electrode rods (see specification below).
  - Effectively grounded metal frame of building. The main complex is a concrete structure and does not have an effectively grounded frame.
  - Concrete-encased Bare, galvanized, or other electrically conductive coating, reinforcing steel rods not smaller than ½ inch in diameter if the total length of the steel is not less than 20 feet located near the bottom of a concrete foundation
  - Ground ring encircling the building or structure in direct contact with the earth at a depth below the earth's surface of not less than 2½ feet consisting of at least 20 feet of bare copper conductor not smaller than AWG 2.

If none of the above is available, grounding electrode rods (see specification below) shall be used. Grounding electrode rods shall be copper-clad steel not less than 5/8 inch in diameter, eight (8') feet long and driven full length into the earth in **groups of three**. The group of three rods shall be installed in a triangular configuration not less than six (6') feet apart from each other.

- G. **EQUIPMENT GROUNDING CONDUCTOR** - All raceways shall contain a separate grounding conductor. Conduit shall not be used as the sole means of grounding. Grounding conductors shall be stranded copper

conductors with green insulation. Grounding conductors shall be installed in one continuous length **without splice**.

- H. ISOLATED RECEPTACLES - The grounding conductor from the grounding terminal on an **isolated receptacle outlet** shall be wired without splicing to the panelboard with derived source grounding electrode conductor. The wiring shall be isolated from all other ground points and receptacles. The insulation on the grounding conductor from each isolated receptacle shall be green with a yellow stripe with additional permanent identification if there is than one isolated grounding conductor to the panel.

### 3.05 OUTLET BOXES AND ENCLOSURES

- A. All boxes and enclosures shall be securely fastened to the building structure, not by the “wall board”, etc.
- B. Recessed outlet boxes or plaster rings shall be set flush with face of finished wall, but **in no case set greater than 1/4 inch behind finished face** of wall.
- C. Receptacle boxes shall be 18 inches on center above the finished floor **or higher** as specified in the drawings. Switch boxes shall be 48 inches on center above finished floor. The Contractor shall check with the Architectural Drawings for possible interference.
- D. Boxes and enclosures shall be located for **convenient** access for inspection or work.

### 3.06 CONDUCTORS AND TERMINATIONS

- A. Each branch circuit shall have **its own grounded conductor (neutral)** wire back to the panel.
- B. **No splices shall be permitted unless specifically approved in writing by the UCHC Electrical; Engineer.**
- C. **Oxide-inhibiting** joint compound such as Penetrox or approved equivalent shall be used wherever there is a joint, bolted or compression, involving aluminum conductor.
- D. Compression connectors shall be applied with non-reversible tools according to manufacturer’s recommendations. **Bolted** pressure connectors **shall not be used**
- E. Wire in cabinets; panels, outlet boxes or equipment shall have sufficient length to make up circuit splices for extending circuits or connecting wiring termination devices. Minimum wire length shall be **six (6") inches**.
- F. **Swab-out** all conduits and tubing before installing wires and cables and install no wires and cables before conduit systems are complete.
- G. Only **one conductor** shall be installed under a screw terminal or clamp even if it is approved for 2 or more.
- H. When more than one **grounded conductor (neutral)** is run in the same raceway each conductor shall be distinguished at both ends with an **identification** number.
- I. Cable shall be tied at a minimum of every **four feet with a UL listed device**.
- J. Cable shall be **tied to the structure** and **not** to other cabling, conduit, piping or ductwork.
- K. Cable shall run **parallel and within 6 inches** of walls except when connecting to a device.
- L. 208 and 480 shall not share the same raceway or box

M. Horizontal runs of conduit or open cabling shall be a **minimum of 6 inches** above the finished ceiling

N. **Conduit shall be used for the following cabling applications:**

- Voltages equal to or greater than 50 volts in Buildings C, F& H. (Exception: luminaire in all areas may use up to 6 foot whips)
- Life support, patient care and critical equipment such as blood bank refrigeration, medical gas alarms, vacuum pumps, critical care communication systems, etc.
- Life safety systems such as egress lighting and exit signage.
- All wiring in anesthetizing areas.
- Fire and smoke alarm system.

O. **Open cabling (conduit is not used or required from 3.06M.) is permitted only as follows:**

- Cable shall be used for less than 50 volts
- Cable shall be UL listed CMP.
- **Before open cabling is designed** into new installations the UCHC Agent shall approve the proposal per Facilities Management Policy 551.00.

### 3.07 SLEEVES AND INSERTS

- A. **Sleeve through all outside walls** with cast iron with intermediate, integral flange. Sleeves shall be set with ends flush with each face of the wall. The space between sleeve and conduit shall be made watertight with Link-Seal compressed rubber sleeves as manufactured by Thunderline Corporation or an approved equal.
- B. **Sleeve through all concrete floors and interior masonry walls** with Schedule 40 black steel pipe set flush with finished walls or ceiling surfaces, but extending six (6") inches above the finished floor.
- C. **Sleeve through all interior partitions** with 22-gauge galvanized sheet steel set flush with finished surfaces or partitions.

### 3.08 FIRE-STOPS, SEALS AND SPECIAL FITTINGS

- A. All wires, cables and conduit, which pass through floors, ceilings and firewalls, shall be **sleeved** (see 3.07) and fire stopped according to the manufacturers directions.
- B. **Expansion type fittings shall be used** on all conduit runs subject to expansion and contraction due to temperature change and building movement. Deflection and expansion type fittings shall be installed where conduit crosses building expansion joints.

### 3.09 IDENTIFICATION SYSTEMS (ref. NEC 110.22)

**Generally, every device or piece of equipment that is powered by, distributes or controls electricity shall be labeled with identification of where it can be turned on/off and what it controls.**

A PANELBOARD

1. A panel designation **nameplate** with one-half (1/2) inch engraved white letters on black (red for emergency) background Lamacoid shall be furnished and attached to the frame on the outside top of the panelboard. The panel designation shall be as on the contract drawing or as approved in advance by the UCHC Agent.
2. A black (red for emergency) nameplate with one-quarter (1/4) inch white letters shall indicate the **feeder** and circuit. This shall be mounted inside the door on the panel.
3. The **source** of the panelboard feeder shall be neatly typed on the index card.
4. The panelboards shall be labeled as follows:

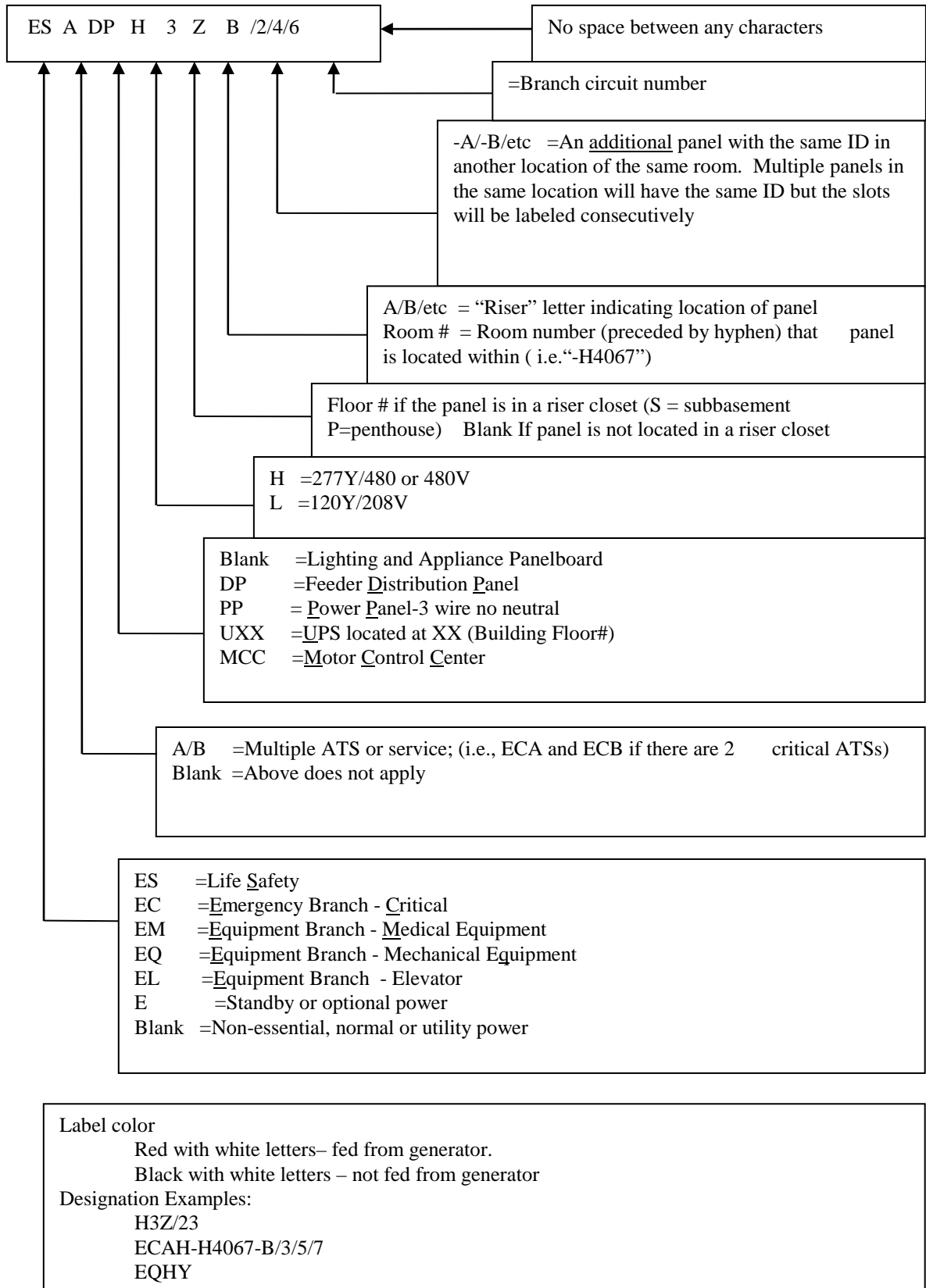
**B CONDUIT or JACKET**

Circuits will be identified with panel name and circuit number on junction box covers with black permanent magic marker for normal circuits and red permanent magic marker for emergency circuits. Conduit will be labeled with appropriate color code.

Conduit marking as below shall be every 50' in straight runs and at every wall or floor penetration.

- 120/208 volt normal black band of tape in non plenum ceilings, paint in plenum ceilings
- 120/208 volt emergency black and red band of paint in plenum ceilings, tape in non-plenum ceilings
- 277/480 volt normal yellow band of tape in non plenum ceilings, paint in plenum ceilings
- 277/480 volt emergency yellow and red band of paint in plenum ceilings, tape in non-plenum ceilings
- Fire Alarm - red band of tape in non plenum ceilings red band of paint in plenum rated ceilings, jacket shall be red
- Telecom - band of green tape in non plenum ceilings, band of green paint in plenum ceilings, jacket shall be green or orange
- Security - band of Pink tape in non plenum ceilings, band of pink paint in plenum ceilings cable jacket shall be pink
- 
- Pink= Security
- Green= Category 6 phone and network cabling
- Purple= Category 6A for Wireless Aps
- Blue= Neon coding mainly in the T-tower
- Black= Black Diamond mainly in the ORs T-tower
- Yellow= Single mode Fiber with armor jacket
- Orange= Multi-Mode Fiber moving away from using

## PANELBOARD DESIGNATION



B. CIRCUIT BREAKER

1. Panelboard indexes shall define the **room number** and device protected for each circuit breaker.
2. The indexes shall be neatly **typed**

C. LUMINAIRE AND RECEPTACLE

1. All luminaries, lighting switches and outlets shall be visibly **labeled** on their faceplates or frames with panelboard and breaker identification (R2A/21 indicates panel R2A breaker #21).
2. The labeling shall be done with black or blue Dymotape for Normal powered circuits and red for Emergency powered circuits or a **pre-approved** equivalent.
3. Calibration data on circuit breakers 100 amp and greater shall be submitted to the UCHC agent before installation.

D. CONDUCTOR

1. Plastic-coated wire markers of the wraparound, self-adhesive type with legible numbers, letters and symbols shall be used to identify **all conductors**.
2. The ungrounded and grounded conductors for each branch circuit shall have the same identification code.
3. All conductors shall be marked at the time wires are **pulled in** and tested; markers shall not be removed for any reason.
4. All wire and cables shall be labeled with wire markers in **all junction** boxes, panels, switchgear, etc.

E. EQUIPMENT IDENTIFICATION

1. Nameplates designating the **power source** and the equipment being controlled and its location shall be furnished and installed on all electrical or electrically powered equipment.
2. Nameplates shall consist of black (red for emergency) **Lamacoid**, or equal pre-approved by the UCHC Agent, with 3/8-inch white letters.
3. Nameplates shall be securely attached in place by **sheet metal screws**.

3.10 SAFETY SWITCHES

- A. Each motor, motor controller and other hardwired piece of electrical equipment shall have a safety switch which is within **sight** of the equipment and capable of disconnecting the equipment from the circuit. Controllers or starters which have an integral disconnect switch, as in the case of combination starter/disconnect units, are not required to have a separate disconnect means. Motors or other equipment, which have remote-mounted controllers, shall have a separate safety switch as close as possible and within sight of the motor or equipment served.

- B. Where more than one motor is connected to a single-branch feeder, **each motor** shall have a disconnect switch even if within sight of the feeder branch breaker.
- C. **Install** fuses in fusible disconnect switches. Install fuses with **label oriented** such that manufacturer, type and size are easily readable. Apply permanent **adhesive label** inside door indicating NEMA fuse class and size required.
- D. The Electrical Contractor shall furnish and install disconnect switches for motors and/or power equipment to meet applicable Code requirements. Disconnect switches, unfused or fusible, for motors **1/2 HP** and larger shall be as specified in this Section. Disconnect switches for motors under 1/2 HP shall be of the thermal trip, toggle switch type for the motor involved.
- E. Surface-mounted disconnect switches shall be vertically **mounted** on 3/4" fire-rated plywood painted with 2 coats of fire-retardant light gray paint.

### 3.11 PANELBOARDS

- A. Flush mounted panelboards shall have **1 empty 1 1/2"** conduit stub up above ceiling.
- B. Surface mount panelboards shall be vertically **mounted** on 3/4" fire-rated plywood painted with 2 coats of fire-retardant light gray paint.
- C. **Tighten** all bolts and screws in the panelboard, especially where there is current flow, to the manufacturers recommendations including those hidden by the breakers or other components

### 3.12 LOAD BALANCE

- A. The Electrical Subcontractor shall balance the loads **within 10%** on the three phases in all electrical switchgear and provide the panel loading data to the UCHC Agent in writing.

### 3.13 WARNING TAPES

- A. Warning tape shall be placed above all buried electrical and communication cables. Place warning tape **6 to 12 inches** below the surface.

### 3.14 WORKMANSHIP

- A. The Electrical Contractor shall at all times have someone on the project **authorized** to make decisions and receive instructions exactly as if the Contractor himself were present.
- B. All work shall be done and all equipment shall be installed in strict accordance with the requirements of all State, local and **UCHC**, the utility companies, the Underwriters' Laboratories, NFPA, National Electrical Code and/or similar Codes applied hereto. Where Code requirements exceed those shown on the Drawings and in the Specifications, Code requirements shall prevail.

### 3.15 INSPECTION AND ACCEPTANCE TESTS --- all testing shall be done with the UCHC agent present

- A. All installations shall be available for inspection by UCHC during installation and at completion.
  1. An **interim inspection** shall be done by the UCHC Agent before electrical wiring is covered by wallboard, ceiling, etc.
  2. An open **panelboard inspection** shall be done once all of the wiring is done and the index and labeling is completed.
  3. At the time of the **final inspection** all devices and equipment installed, labeled and properly operating ready for acceptance testing.



- B. **New panelboard** installations shall be thermally scanned with an infrared camera at least 1 week after all the loads on the panel are activated. Temperature gradients of 2°F above the ground buss shall be corrected at no charge to UCHC.
- C. The contractor shall test each **feeder circuit** for an insulation resistance of not less than 0.5 megohms when tested with a 500 VDC potential between conductors and between conductors and grounds at ambient temperature.
- D. Verify that the ground on any **isolated ground** receptacle the branch circuits only go to ground at the 120/208-transformer panelboard For each isolated ground receptacle, one at a time disconnect the isolated ground wire at the 120/208 transformer panelboard and check for greater than 1 Megohm to ground between the grounding pin and the receptacle box. Reconnect the wire.

END OF SECTION

## SECTION 16740 TELECOMMUNICATION OUTLETS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. It is the intent of this Section of the Specifications to define installation equipment, guidelines and performance characteristics of telephone and data communication outlets.

#### 1.02 GENERAL REQUIREMENTS

- A. Sections 16010 & 16050 are a part of this Section and are to be considered a part of this Contract
- B. There shall be no substitutions for the products specified without prior written approval of the UCHC Agent.

#### 1.03 STATEMENT OF WORK

- A. The Electrical Contractor shall be responsible for providing and installing all line items. UCHC shall provide and install all communications products.

### PART 2 - PRODUCTS

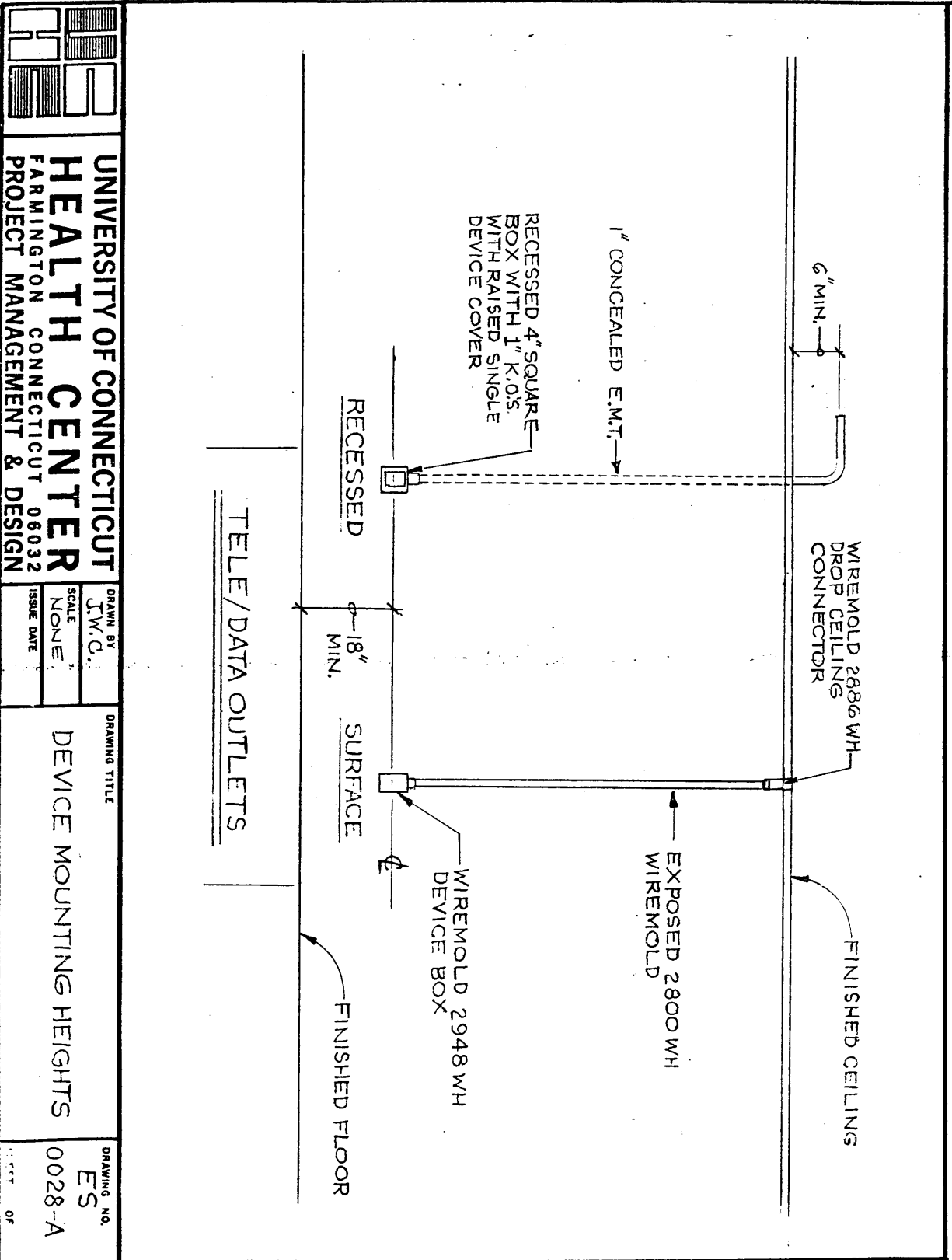
- A. All exposed wireway, boxes, faceplates shall be Wiremold office white.

### PART 3 EXECUTION

#### 3.01 INSTALLATION (ref. attached drawing ES0028):

- A. Each telecommunications outlet, except for the following exceptions, shall consist of a recessed 4" square box and a raised single device cover with 1" EMT stubbed above ceiling. The outlet shall be 18 inches off the finished floor.
- 1) If the contract drawing specifies a surface mounted telecommunications outlet, provide and install Wiremold per the attached drawing ES0028.
  - 2) If the contract drawing specifies telecommunications outlet in a divided wireway to be shared with electrical power a Wiremold V4046B-2/ Two Gang Duplex Cover is to be provided along with the wireway. This installation shall be configured as a horizontally mounted duplex electrical outlet under a horizontally mounted duplex telecommunications outlet. The electrical outlet shall be 18 inches above the finished floor.
  - 3) If the contract drawing specifies a wall telephone, provide and install a recessed single device box with ¾" EMT stubbed above ceiling. The box centerline shall be 46 inches above the finished floor (ref. attached drawing ES0028).
  - 4) In areas with Hauserman walls: The distance from the room side face of the metal clad sheetrock to the back of the opposite wall is 2 ¼"+ allowing installation of a 4"X 4" work box with MC cable and a pull string. (A 4" square box with plaster reducing ring cannot be installed in these walls due to the depth of the box and 2" space between the layers.) A 2 gang box cover which has 6 possible ports of which 2 will be blanked off shall be used. (The use of a single gang work box is physically possible but does not allow radius bends of the cable within category 5 specification.)

END OF SECTION 16740

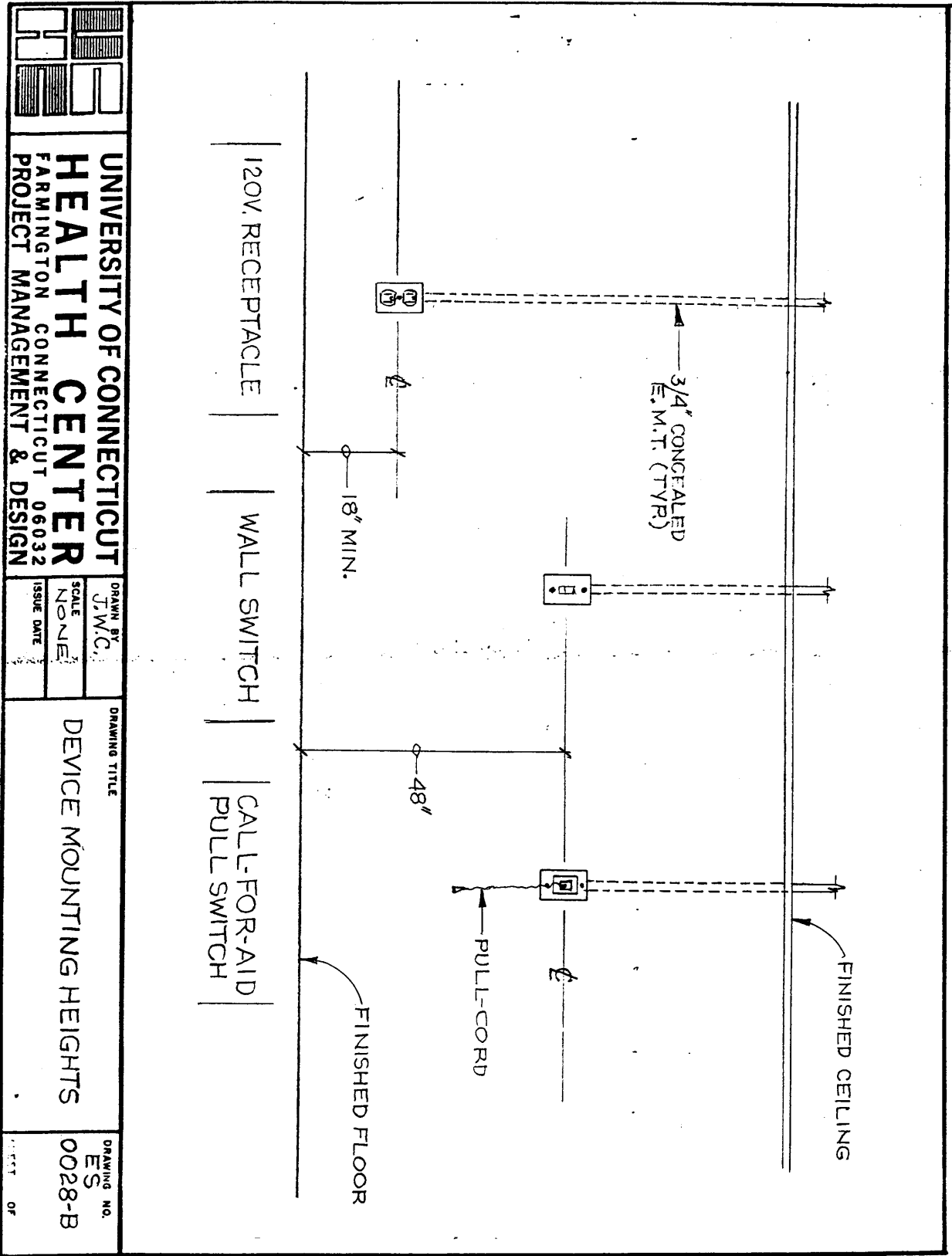


UNIVERSITY OF CONNECTICUT  
**HEALTH CENTER**  
 FARMINGTON CONNECTICUT 06032  
 PROJECT MANAGEMENT & DESIGN

DRAWN BY  
J.W.C.  
 SCALE  
NONE  
 ISSUE DATE

DRAWING TITLE  
 DEVICE MOUNTING HEIGHTS

DRAWING NO.  
 ES  
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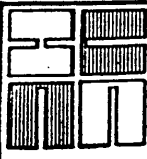
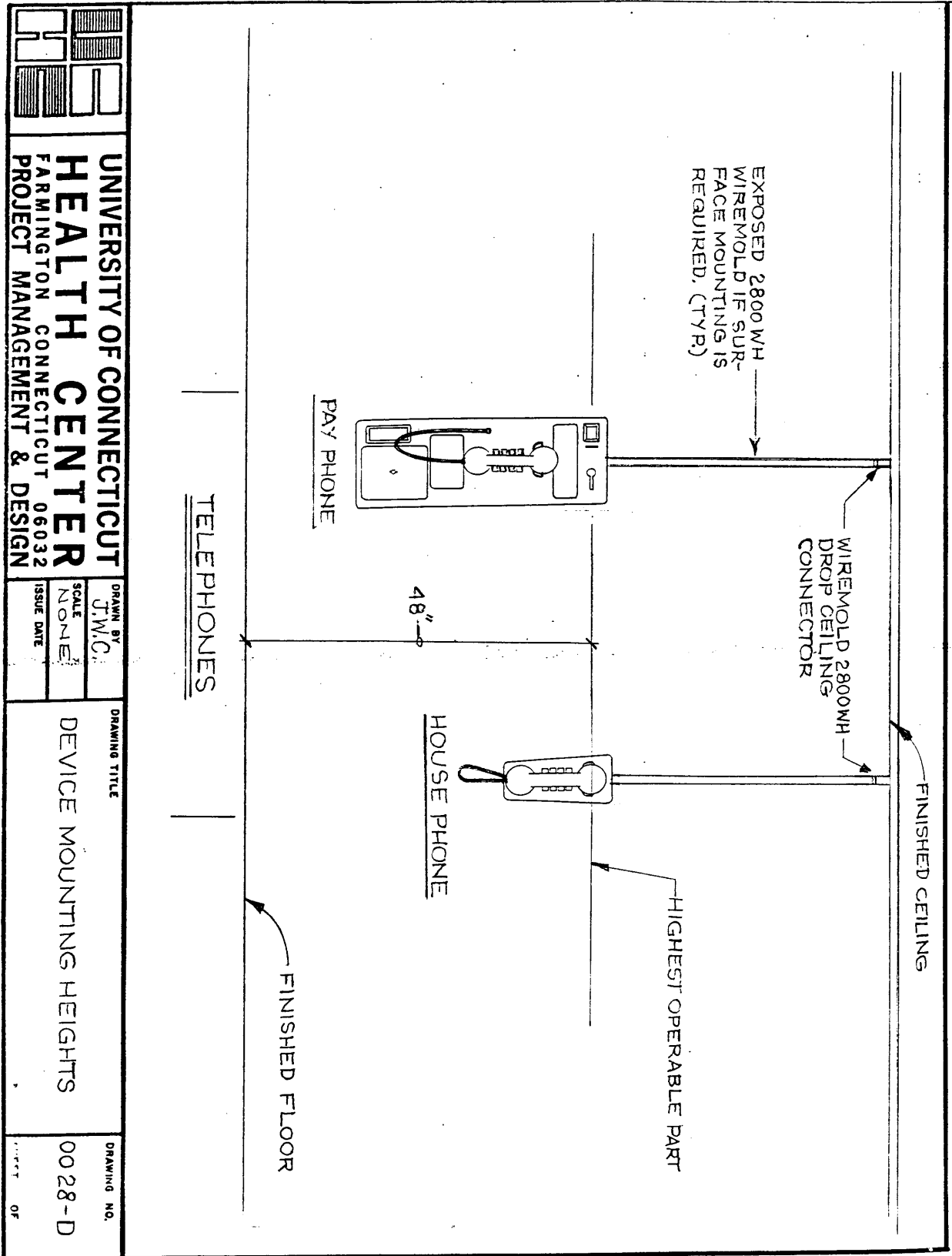


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SCALE  
NONE  
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DRAWING TITLE  
DEVICE MOUNTING HEIGHTS

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