

UConn

PROCUREMENT SERVICES

**CAPITAL PROJECTS AND
FACILITIES PROCUREMENT**

PROJECT MANUAL

FOR

NORTH DINING DISH ROOM RENOVATION

UNIVERSITY OF CONNECTICUT

**STORRS CAMPUS
Storrs, Connecticut**

PROJECT NUMBER: 300161

February 3, 2020

ARCHITECT/ENGINEER OF RECORD:

MAIER DESIGN GROUP, LLC

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
Project: #300161**

The following Bid Documents and all Bid Clarifications are to be obtained by accessing the following web link and clicking on the Project Number: 300161

<http://cpca.uconn.edu/construction-current-opportunities/>

Table of Contents

<u>Documents:</u>	<u># of Pages</u>
Table of Contents	1
Invitation to Bid	3
List of Prequalified Contractors	1
Instruction to Bidders	19
Form of Proposal/Bid Submission	26
Prevailing Wages (Wages to Come)	23
AIA 101 - Standard Form of Agreement – Draft	10
AIA 101 – Exhibit A – Insurance Requirements	3
AIA 101 – Exhibit F – State of Connecticut Terms and Conditions	6
AIA 201 - General Conditions	53
Project Manual	304
Drawings	25
Labor Rate Sheet (example form) – for information only and will be filled out if Contractor is low bidder. Form can be found at http://paes.uconn.edu/contractors-working-at-uconn/	2

INVITATION TO BID

February 3, 2020

DUE DATE: March 5, 2020
TIME: 2:00 p.m.
LOCATION: University of Connecticut
Capital Projects & Facilities Procurement
3 Discovery Drive, Unit 6076
Storrs, CT 06269
Attn: Walt Dalia

(Sealed Bids – Faxed Bids will not be accepted)

The University of Connecticut is accepting sealed bids for:

North Dining Dish Room Renovation

Project Number: 300161

University of Connecticut
Storrs, CT

Bids must be submitted on the forms supplied and in the manner specified within the Bid Documents. This invitation is **open to previously prequalified General Contractors only.**

PROJECT DESCRIPTION

The project consists of the removal and replacement of the dish washing machine and dish accumulator in the North Dining Dish Room. This equipment has performed to its life expectancy and breakdowns and repairs are more frequent. The room that this equipment is located in is also in need of finishes. Included in the Scope of Work is all the plumbing and electrical components as well as relocating the dish accumulator. New flooring, lighting, and new plumbing and electrical fixtures will also be completed.

PROJECT DURATION

The construction start date is May 15, 2020 and the Substantial Completion Date is August 7, 2020

PRE-BID CONFERENCE

There will be a job-site walkthrough on **Monday, February 10, 2020 at 1:30 p.m.** This walkthrough is **not mandatory** however; interested bidders are **strongly encouraged** to attend to view existing conditions. Meet at the **Purchasing Bid Room, 3 Discovery Drive, Storrs, Connecticut.** The Pre-Bid Conference will commence promptly at the time noted herein. There are limited short-term visitor parking spaces around the Purchasing Building. The North Parking

REQUEST FOR INFORMATION PROCEDURE:

All Requests for Information ("RFI") must be received in writing no later than **2:00 p.m. on Wednesday, February 19, 2020** and emailed to walter.dalia@uconn.edu using the RFI form included within the bid documents. Include in the subject line: RFI – North Dining Dish Room Renovation, #300161. **Questions received verbally will not be answered.** All answers will be published by written Bid Clarification. Extensions of RFI deadlines may only be revised via written Bid Clarification. It is the responsibility of all bidders to verify that they are current with all Bid Clarifications issued prior to bid submission.

Bids will be accepted at the Office of Capital Projects and Facilities Procurement, 3 Discovery Drive, Storrs, CT 06269 until 2:00 p.m. local time on Thursday, March 5, 2020 at which time they will be publicly opened and read.

The Bid shall be accompanied by a Bid Bond in the amount of ten percent (10%) of the amount bid. All bonds required for this Project shall be acceptable to the University 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".

The "Set-Aside" for this project is that (1) not less than thirty (30%) of the total Contract Price be awarded to subcontractors who are certified by the Connecticut Department of Administrative Services as "Small Business Enterprises" ("SBEs") and (2) not less than ten (10%) of the total Contract Price be awarded to subcontractors who are certified by the Connecticut Department of Administrative Services as "Minority Business Enterprises" ("MBEs") (the 10% set aside for MBEs may be included in the 30% set aside for SBEs). The general contractors are responsible for ensuring that they and the SBEs they have selected are eligible contractors, and that they meet State requirements.

The University of Connecticut is committed to increasing participation and enrollment of Small and Minority Businesses (S/MBE's) on our contracts. It is expected that those contracting with us will give thoughtful consideration both to the approach they use in their selection of the eligible Connecticut-certified S/MBE's that they will utilize and in the maximizing of contracting and work opportunities for S/MBE's. To ensure that you are exploring all possible ways to be inclusive, included below is a sample of specific possibilities for breakout of the schedule of values. We appreciate your partnering with us to ensure that S/MBE's are given an opportunity to work, contribute and grow their businesses on University projects.

Specific possibilities for Inclusion of S/MBE's in the Schedule of Values

*Bold indicates suggested categories (if applicable)

01 – General Conditions	Temporary Electric & Lighting Cleaning
02 – Existing Conditions	Demolition & Salvage Abatement
03 – Concrete	Sidewalks & Flatwork
05 - Metals	Metal Stairs & Railings Miscellaneous Metals Decorative Metal
06 – Woods Plastics & Composites	Rough Carpentry & Blocking
07 – Thermal & Moisture Protection	Insulation Sealers & Waterproofing
08 – Openings	Door Hardware
09 – Finishes	Tile Installations Acoustic Ceilings Flooring Installations Painting & Coatings Firestopping
10 – Specialties	Signage
12 – Furnishings	Window Treatments

14 – Conveying Equipment	Lifts
23 – HVAC (Heating, Ventilating, Air Conditioning)	HVAC Duct Insulation
27 – Communications	Low Voltage Cabling
28 – Electronic Safety & Security	Fire Alarm & Security Wiring
32 – Exterior Improvements	Retaining Walls Paving Fencing & Gates Landscaping
44 – Pollution & Waste Control Equipment	Trucking

The University reserves the right to reject any or all Bids, in whole or in part, to award any item, group of items, or total Bid, and to waive any informality or technical defects, if it is deemed to be in the best interests of the University.

No Bidder may withdraw its Bid within **ninety (90) days** of the date of the Bid opening. Should there be reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the University and the Bidder.

Walt Dalia
Purchasing Agent II
Capital Projects and Facilities Procurement

North Dining Dish Room Renovation

Project #300161

Prequalified Contractors

1	Connecticut Carpentry Rocky Hill, CT
2	Giordano Construction Co., Inc. Branford, CT
3	Kronenberger & Sons Restoration, Inc. Middletown, CT
4	LaRosa Building Group, LLC Meriden, CT
5	Mattern Construction, Inc. Baltic, CT
6	Sarazin General Contractors, Inc. North Windham, CT
7	Scope Construction Co., Inc. New Britain, CT
8	Zlotnick Construction, Inc. Mansfield Center, CT

INSTRUCTIONS TO PREQUALIFIED BIDDERS

ARTICLE 1 GENERAL PROVISIONS

1.1 Connecticut Sales and Use Tax

1.1.1 The University of Connecticut 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 Bid. A Sales Tax Certificate is available from the Purchasing Department upon written request.

1.2 Contractor's Qualifications

In the Pre-Qualification to Bid Documents for this project, the University has reserved the right to request additional information from prospective Bidders beyond what may have been submitted in any Application and Statement of Qualifications in response to the Invitation to Pre-Qualify. The University has also reserved the right to find any Bidder to be non-responsible with respect to a specific project notwithstanding the fact that the Bidder may have previously been pre-qualified pursuant to the pre-qualification process. The University reaffirms these reservations of rights. In finding that a Bidder is non-responsible, the University may rely upon any information obtained prior to or subsequent to a finding that Bidder is pre-qualified.

1.2.1 CGS 4b-91 requires each bid submitted shall include a copy of a prequalification certificate issued by the Commissioner of Administrative Services. The bid shall also be accompanied by an update bid statement in such form as the Commissioner of Administrative Services prescribes. The form for such update bid statement shall provide space for information regarding all projects completed by the bidder since the date the bidder's prequalification certificate was issued or renewed, all projects the bidder currently has under contract, including the percentage of work on such projects not completed, the names and qualifications of the personnel who will have supervisory responsibility for the performance of the contract, any significant changes in the bidder's financial position or corporate structure since the date the certificate was issued or renewed, any change in the contractor's qualification status as determined by the provisions of subdivision (6) of subsection (c) of section 4a-100 and such other relevant information as the Commissioner of Administrative Services prescribes. Any bid submitted without a copy of the prequalification certificate and an update bid statement shall be invalid and considered non-responsible.

1.3 Academic Schedule

1.3.1 It is important to the University, in order to maintain the integrity of its ongoing academic 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 academic schedule be maintained. Therefore, all Bidders shall familiarize themselves with and comply with the academic schedule of the University, and its regulations regarding noise, traffic, etc. which are available from Architectural and Engineering Services. No noise generating work shall be allowed during exam periods where the noise will impact classroom functions. Examples of noise generating work include, but are not limited to, sawing, drilling, and hammering/jackhammering. The Contractor shall keep the

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

University Representative informed as to the location of its operations to enable necessary precautions or co-ordination to be implemented.

1.4 Non-Discrimination and Affirmative Action Provisions

1.4.1 Non-discrimination. References in this section to "Contract" shall mean the execution of AIA 101 or Purchase Order Contract; and references to "Contractor" shall mean the person or entity who will be solely responsible for execution of the work.

(a) The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes:

(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, mental retardation, 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. 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, 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; (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 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 and 46a-68f; (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.

(b) 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 project.

(c) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent 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 section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "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.

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

- (d) 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 may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (e) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.
- (f) The Contractor shall include the provisions of sections (a) and (b) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. 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, 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 following subsections are set forth here as required by section 4a-60a of the Connecticut General Statutes:
 - (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 of 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.
- (h) The Contractor shall include the provisions of section (g) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. 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, 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.

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

- (i) For the purposes of this entire Non-Discrimination section, "Contract" or "contract" includes any extension or modification of the Contract or contract, "Contractor" or "contractor" includes any successors or assigns of the Contractor or contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "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. For the purposes of this section, "Contract" does not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

1.5 Union Labor

- 1.5.1 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.

1.6 Labor Market Area

- 1.6.1 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.

1.7 Wage Rates

- 1.7.1 If this 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 \$400,000.00 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 \$100,000.00 or more, then:

- .1 The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund as defined in Subsection (h) 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 project is being constructed. Any Contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each payday.

- 1.7.2 The State of Connecticut Labor Department Wage Rate Schedule, when required by the University, shall be provided with these documents or will be issued as part of the bid documents or by Bid Clarification/Addendum hereto and is deemed to reflect such customary

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

or prevailing wages for this project, and is hereby incorporated and made a part of the Contract Documents.

- 1.7.3 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".
- 1.7.4 Wage Rates will be posted each July 1st on the Department of Labor Website: www.ctdol.state.ct.us. Such prevailing wage adjustment will not be considered a matter for an annual contract amendment.
- 1.7.5 Wage rates shall be paid pursuant to Section 31-53 and 31-54 of the Connecticut General Statutes, and any regulations issued hereunder.
- 1.7.6 **Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions.** (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268. (b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance.

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, material and overhead 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. The University shall assign a University 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 states, 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

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

made in writing to the University Office of Capital Project & Contract Administration, and to be given consideration shall be received at the specified date outlined within the invitation to bid and/or adjusted by a bid clarification/addenda.

- 3.1.2 Any and all such interpretations and any supplemental instructions will be in the form of written bid clarification/addenda which, if issued, will be posted on the University's Capital Projects and Contract Administration's Department website; www.cpc.a.uconn.edu for all prospective Bidders to access or for those without access to a computer you can obtain them through Joseph Merritt, no later than five (5) days prior to the date fixed for the opening of Bids. 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 University of any ambiguity, inconsistency or error which they may discover upon examination of these Contract Documents.

ARTICLE 4 BIDDING PROCEDURES

4.1 Requests for Information

- 4.1.1 Enclosed with this Invitation to Submit Proposals Manual is a Request for Information Form (RFI). All questions/clarifications must be submitted in writing on this form and before the prescribed RFI Deadline. No verbal questions will be answered. All answers to RFI's will be issued in a Bid Clarification/Addenda. Form is at the end of this document.

4.2 Form of Proposal

- 4.2.1 Enclosed with this Invitation to Submit Proposals Manual is a Form of Proposal. 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. All documents required by these Bid Documents must be returned with your Bid.

4.3 Bids and Rejection of Bids

- 4.3.1 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 the Form of Proposal, and for each other class of work for which the University 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 the University pursuant to the Bid and the Contract Documents.

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

- 4.3.2 Bids shall be submitted only on the forms furnished for the specific project, which shall include a completed Form of Proposal 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 Venture. In no event will Bids or changes in Bids made by telephone, email or fax be considered. Any Form of Proposal omitting or adding items, altering the form, containing conditional or alternative Bids, or without the original signature of the Bidder or its authorized representative, may be rejected.
- 4.3.3 Any Bids received after the scheduled closing time for the receipt of Bids will be returned to the Bidders unopened.
- 4.3.4 Any Bid once deposited with the University of Connecticut may only be withdrawn by letter of request, signed by the depositing Bidder and presented to the Office of Capital Project and Contract Administration, prior to the time of opening of any Bid for the project designated or identified project.
- 4.4 Bid Security
- 4.4.1 Each Bid must be accompanied by a certified check payable to the order of the University of Connecticut, or the Bid may be accompanied by a Bid Bond in the form required by the University, having as surety thereto such surety company or companies acceptable to the University and as are authorized to do business in this State, for an amount not less than 10 per cent of the Bid. 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 \$50,000.00.
- 4.4.2 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.
- 4.5 Subcontractors
- 4.5.1 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://ctdol.state.ct.us> or the Federal List of Excluded Parties Listing System available through: <http://epls.arnet.gov>
- 4.5.2 The Bidder shall furnish, with his submitted Bid, as is set forth in the Proposal Form, in the space provided for such purpose, the names and prices of responsible and qualified Subcontractors who are actually to perform the following categories of work under the Base Bid, if their prices exceed \$25,000.00:
- .1 Masonry

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

- .2 Electrical
 - .3 Mechanical other than HVAC
 - .4 HVAC
 - .5 Any other class of work identified in the Proposal Form for which a blank space has been provided.
- 4.5.3 The Bidder further 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 the University.
- 4.5.4 The Bidder further 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 general statutes governing contract requirements.
- 4.5.5 Pursuant to Connecticut General Statutes Section 49-41a, for every contract with the University for the construction, alteration or repair of any building or work, (1) the Contractor, within 30 days after payment to the Contractor by the University, shall be required to pay any amounts due any Subcontractor, whether for labor performed or materials furnished, when the labor or materials have been included in a requisition submitted by the Contractor and paid by the University; (2) the Contractor shall include in each of its subcontracts a provision requiring each Subcontractor to pay any amounts due any of its Subcontractors, whether for labor performed or materials furnished, within 30 days after each Subcontractor receives a payment from the Contractor which encompasses labor or materials furnished by such Subcontractor.
- 4.5.6 Within five days after being notified of the award of a general Contract by the University, or, in the case of an approval of a substitute Subcontractor by the University, 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 and must be executed with all of your named subcontractors in your form of proposal.
 - .2 A 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 the University. When seeking approval for a substitute Subcontractor, the general Bidder shall provide the University 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. The University 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

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

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 the University a copy of each executed subcontract within ten days, Saturdays, Sundays and legal holidays excluded, of presentation of a subcontract to such Subcontractor.

- .3 In the event of any conflict or inconsistency between the University of Connecticut's Subcontract form and the Contractor's standard Subcontract form, the provisions of the University of Connecticut's Subcontract form shall prevail. Any standard Subcontract form used will be attached as a supplement to the University of Connecticut's Subcontract form.

4.6 LIQUIDATED DAMAGES

- 4.6.1 Liquidated Damages of Five Hundred and 00/100 Dollars (\$500.00) per calendar day shall be assessed if the Contractor fails to achieve Substantial Completion, or causes delay to the Substantial Completion of any portion of the Work within the Contract Time.

4.7 COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES CONTRACT COMPLIANCE REGULATIONS:

The contract to be awarded is subject to contract compliance requirements mandated by Sections 4a-60 and 4a-60a of the Connecticut General Statutes; and, when the awarding agency is the State, Sections 46a-71(d) and -81i(d) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at Section-68j-21 through 43 of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by Sections 4a-60 and 46a-71(d) of the Connecticut General Statutes. According to Section 46a-68j-30(9) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to "aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials." Minority business enterprise" is defined in Section 4a-60 of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: "(1) Who are active in 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 Section 32-9n." "Minority" groups are defined in Section 32-9n of the Connecticut General Statutes as "(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4) Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . ." An individual with a disability is also a minority business enterprise as provided by Section 4a-60g of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of Section 46a-68j-21(11) of the Contract Compliance Regulations. The awarding agency will consider the following factors when reviewing the bidder's qualifications under the contract compliance requirements: (a) the bidder's success in implementing an affirmative action plan; (b) the bidder's success in developing an apprenticeship program complying with Sections 46a-68-1 to 46a-68-17 of the Administrative Regulations of Connecticut State Agencies, inclusive; (c) the bidder's promise to develop and implement a successful affirmative action plan; (d) the bidder's submission of employment statistics contained in the "Employment Information Form", indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

of the workforce in the relevant labor market area; and(e) the bidder's promise to set aside a portion of the contract for legitimate minority business enterprises. See Section 46a-68j-30(10)(E) of the Contract Compliance Regulations.

4.7.1 The following BIDDER CONTRACT COMPLIANCE MONITORING REPORT must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to Sections 4a-60 and 4a-60a CONN. GEN. STAT., and Sections 46a-68j-23 of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder's good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) Definition of Small Contractor:

Section 4a-60g CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding ten million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision 4a-60g CONN. GEN. STAT.

2) Description of Job Categories (as used in Part IV Bidder Employment Information)

MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists

ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, payroll clerks, bill and account collectors, customer service representatives, files clerks, dispatchers, shipping clerks, secretaries and

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

administrative assistants, computer operators, mail clerks, and stock clerks.

BUILDING AND GROUNDS CLEANING AND MAINTENANCE:

This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

CONSTRUCTION AND EXTRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category.

INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and off bearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information):
White (not of Hispanic Origin) - All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Black (not of Hispanic Origin) - All persons having origins in any of the Black racial groups of Africa.

Hispanic- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Asian or Pacific Islander- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.

American Indian or Alaskan Native- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition

ARTICLE 5 CONSIDERATION OF BIDS

- 5.1 Every general bid which is conditional or obscure, or which contains any addition not called for shall be invalid; and the University shall reject every such general Bid. The University 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 the University 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 the University,

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

- 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 the University. The University 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 the University forthwith. The University may require in the Proposal Form that the General Contractor agree to perform a stated, minimum percentage of work with his own forces. The University may also require the General Contractor to set aside a portion of the contract for Subcontractors who are eligible for set aside contracts. The University 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.
- 5.3 The general Bid Price shall be the price set forth in the space provided on the general Proposal Form. No general Bid shall be rejected (1) because of error in setting forth the name of a Subcontractor as long as the Subcontractors designated are clearly identifiable, or (2) because the Drawings and specifications do not accompany the Bid or are not submitted with the Bid. **FAILURE TO CORRECTLY STATE A SUBCONTRACTOR'S PRICE MAY 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 The University 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 the University 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 The University 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 the University. The low Bid shall be determined by taking the Base Price set forth in the Proposal form as selected by the University, plus the Alternates and/or Options selected by the University.
- 5.8 The Bidder agrees that if selected as General Contractor, he shall, within ten (10) days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the University, execute a contract in accordance with the terms of the general Bid.

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

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. The University 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 The University 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 Section's 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

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

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.

6.2 Tax Identification

6.2.1 The Contractor shall furnish to the Owner, at the time of execution of the Contract, the following information

- .1 The identity and addresses of all subcontractors performing work on the project.
- .2 The Connecticut tax registration numbers of the Contractor and all subcontractors.
- .3 The Federal Social Security account numbers, or Federal Employer Identification numbers, or both, if applicable, for the Contractor and all subcontractors.

6.2.2 The aforementioned information shall be continuously updated by the Contractor to reflect any additions or changes to the previously identified subcontractors. Any final additions or changes to this information shall be submitted to the Owner with the Contractor's application for final payment.

ARTICLE 7 PERFORMANCE AND PAYMENT BONDS AND CERTIFICATE OF COMPLIANCE.

7.1 Performance Bond

7.1.1 N/A for this solicitation

7.2 Labor and Material Payment Bond

7.2.1 N/A for this solicitation

7.3 Nonresident Contractor Certificate of Compliance

7.3.1 Prior to execution of the Contract, the Bidder shall submit proof that ensures they and all subcontractors being contracted to perform work under the awarded bid; are State of Connecticut resident contractors. Such proof shall be in a form on the awarding Contractor's letter head signed by the owner or principle of the company having authority to ensure that all agreements entered into under this contract are in-state resident contractors. Should the awarding Contractor and/or subcontractors who will perform work under this contract, are nonresident of the State of Connecticut, the awarding Contractor must provide a Certificate of Compliance from the Department of Revenue Services (DRS) for those nonresident firms who

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

will be under contract. This Certificate of Compliance is pursuant to Statute 12-430 as amended by 2005 Connecticut Public Acts 260, 6; Connecticut Agencies Regulations 12-430 (7)-1.

7.4 General Provisions Regarding Bonds

- 7.4.1 The aforementioned Performance and Payment bonds shall be provided in the forms required by the University, samples of which are appended hereto. If the Contractor is a Joint Venture, all such bonds shall name all joint ventures 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 awards for which the total estimated cost of labor and materials under the Contract is at least \$100,000.00. The above bonds shall be acceptable to the University 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."

ARTICLE 8 AFFIDAVITS/ETHICS AFFIRMATIONS

- 8.1 Affidavits/Ethics Affirmations to be completed in accordance with the instructions provided on the OPM website for each Affidavits/Ethics Affirmations.

Form 1. Gift and Campaign Contribution Certification (for contract values >\$50,000)

Form 5. Consulting Agreement Affidavit (for contract values >\$50,000)

Form 6. Affirmation of Receipt of State Ethics Laws Summary (for contract values >\$500,000)

Form 7. Iran Certification (for contract values >\$500,000)

Nondiscrimination Certification:

Form B. Nondiscrimination Certification (for contract values <\$50,000)

Form C. Nondiscrimination Certification (for contract values >\$50,000)

- 8.2 With regard to a State contract as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination of series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this submission in response to the State's solicitation expressly state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See attached **SEEC Form 11.**

Obtain OPM has posted the approved Forms on the OPM Web site -

<http://www.opm.state.ct.us/secr/forms/ContractAffidavitRequirements.htm>

ARTICLE 9 CONTRACT

- 9.1 A draft of the contract has been provided with the bid documents. The University reserves the right to modify the contract or waive any informality as it deems to be in the best interest of the University. By submitting a bid the Contractor accepts the contract and any modifications that the University deems necessary to it without exception. Exceptions to the contract submitted by the Contractor at any time will not be considered.

UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161

REQUEST FOR INFORMATION FORM

PLEASE TYPE -OR- PRINT / SEE INVITATION AND ADDENDA'S FOR RFI DEADLINE

TO: The University of Connecticut
Fax (860) 486-1953

FROM: _____
(Name of Bidding Firm)

ATTN: Walt Dalia
walter.dalia@uconn.edu

Contact Name: _____

RFI Deadline: See Invitation/Bid Clarifications Phone #: _____ Fax #: _____

Specification Section: _____ **Drawing No. / Drawing Date:** _____

QUESTION (Please be specific): _____

RESPONSE: _____

Signature: _____

Date: _____

NOTE: All questions must be submitted in writing before the prescribed RFI Deadline. No verbal questions will be answered. All questions must be submitted in writing on this RFI Form. All answers to RFI's will be issued in a Bidder's Clarification.

UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161



STATE OF CONNECTICUT
STATE ELECTIONS ENFORCEMENT COMMISSION
20 Trinity Street Hartford, Connecticut 06106—1628

SEEC FORM 11

NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION AND SOLICITATION BAN

This notice is provided under the authority of Connecticut General Statutes 9-612(g)(2), as amended by P.A. 07-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined below):

Campaign Contribution and Solicitation Ban

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, or solicit contributions 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;

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (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.

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—\$2000 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 \$2000 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 \$5000 in fines, or both.

Contract Consequences

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

Contributions made or solicited in violation of the above prohibitions, in the case of a prospective state contractor, shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor,

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State will 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 and the entire text of P.A 07-1 may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to "State Contractor Contribution Ban."

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 or a loan to an individual for other than commercial purposes.

"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

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
PROJECT 300161**

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 fund-raising 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 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.

END OF INSTRUCTION TO BIDDERS



PROCUREMENT SERVICES

**CAPITAL PROJECTS AND
FACILITIES PROCUREMENT**

BID SUBMISSION

FOR

NORTH DINING DISH ROOM RENOVATION

PROJECT NUMBER: 300161

**UNIVERSITY OF CONNECTICUT
STORRS CAMPUS
Storrs, Connecticut**

March 5, 2020

NAME OF FIRM SUBMITTING:

Proposal Submission Checklist

The following documents and information shall be submitted and included as your bid proposal. All documents must be submitted in a sealed envelope reflecting the submitting firm's name and address; addressed to CPCA attention to the appropriate purchasing agent, clearly stating the project name and project number. All required documents are to be included and executed in their original condition as issued.

- Ethics Forms 5 (if contract value is > \$50,000) and 6 (if contract value is > \$500,000).
- Bid Bond
- Fully executed Form of Proposal
- Copies of prequalification certificate and an updated statement as prescribed by Commissioner of Administrative Services for the State of Connecticut.

Contractors Certification

By submitting a bid proposal, the bidder is attesting to the review, reading, understanding, and acceptance of the information and requirements of the project contained within the bid documents without exception. By submitting a bid proposal, the Bidder represents that they have examined the site, and accept the conditions under which the work will be performed and we have read, evaluated, understand, and accepted all the Contract Documents, including those documents provided and their content in their entirety and have included all provisions necessary to accomplish all work according to the information and requirements prescribed therein without exception.

SUBMITTED BY:

Firm: _____

Date: _____

Address: _____

SUBMITTED BY: _____

Print Name: _____

Title: _____

Email Address: _____

Phone Number: _____

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
#300161**

FORM OF PROPOSAL

University of Connecticut
Walt Dalia, Purchasing Agent II
Capital Project & Contract Administration
3 Discovery Drive, Unit 6047
Storrs, Connecticut 06269-6047

Dear Mr. Dalia:

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 FORM OF PROPOSAL 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 FORM OF PROPOSAL, hereof.
2. The Lump Sum Base Bid by me (us) on the FORM OF PROPOSAL includes all work indicated on the drawings and/or described in the specifications (including the furnishing and installing of all required materials, labor, equipment and allowances where applicable), except:
 - A. Work covered by Alternates as may be listed on the FORM OF PROPOSAL.
 - B. Contingent work covered by Unit Prices as may be listed on the FORM OF PROPOSAL.
 - C. Work covered by Options as may be listed on the FORM OF PROPOSAL.
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. CONTRACTORS INSURANCE REQUIRED:
 1. The limits of liability and coverages shall be those set forth in Article 11 of the General Conditions included with this bid package (or as previously executed with the on-call trade contract).

E. REQUIRED PERCENTAGES OF WORK AND SET-ASIDES

- .1 If awarded this contract, we (I) as the General Contractor on this Project shall be required to perform not less than 10% of the completed dollar value of the Work with its own forces.

- .2 We (I) as the General Contractor on this project shall award not less than 30% of the total Contract Price to subcontractors who are certified and eligible to participate under the State of Connecticut Small Business Set Aside Program, of which 10% (of the total Contract) must be awarded to Women Owned or Minority Businesses. This requirement must be met even if the General Contractor is certified and eligible to participate in the Small Business Set Aside Program. To facilitate compliance with this requirement for set aside subcontractors, submit a list of certified set aside contractors to be used on this project along with the dollar amounts to be paid to each, on the form provided, and a copy of their current certification must be attached. This information will be considered as part of your bid proposal and failure to comply with any portion of this requirement, including but not limited to failure to list or meet the necessary dollar amount of percentage of the bid price will be cause to reject your bid.

F. NONDISCRIMINATION & LABOR RECRUITMENT:

We (I) agree that the Contract awarded for this project shall be subject to the Executive Orders No. Three and Seventeen, promulgated June 16, 1971 and February 15, 1973 respectively and to the Guidelines and Rules of the State Labor Department implementing Executive Order No. Three and further agree to submit reports of Compliance Staffing on Labor Department Form E.O.3-1, when and as requested.

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 with the Bidders' Convenience Package, 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 . Such prevailing wage adjustment will not be considered a basis for an annual contract amendment.

FORM OF PROPOSAL

H. CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY & NON-SEGREGATED FACILITIES:

We (I) acknowledge that we (I) and our subcontractors are obligated to fill out the forms provided by the University of Connecticut Office of Capital Project and Contract Administration and to agree to certify to the compliance of non-segregated facilities.

I. NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OR CAMPAIGN CONTRIBUTION AND SOLICITATION BAN.

With regard to a State contract as defined in P.A. 07-1 having a value in a contract 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 submission in response to the State's solicitation expressly acknowledges receipt of the State Elections Enforcement Commission's notice advertising prospective principals of the contents of the notice. See Attachment SEEC Form 11.

4. ACCOMPANYING THIS PROPOSAL IS:

A. A CERTIFIED CHECK drawn to the order of the University of Connecticut in the amount of 10% of the Bid, i.e.:

_____ DOLLARS \$ _____

and drawn on the _____
(STATE BANK & TRUST COMPANY)

_____ located at _____
(A NATIONAL BANKING ASSOCIATION) (CITY & STATE)

which is understood shall be cashed and the proceeds thereof used so far as may be necessary to reimburse the State of Connecticut for losses and damages arising by virtue of my (our) failure to file the required Bonds and execute the required contract in this proposal as accepted by the University of Connecticut.

OR;

B. A BID BOND having as surety thereto a Surety Company for Companies authorized to transact business in the State of Connecticut and made out in the penal sum of 10% of the bid, (Bids \$50,000 and greater) i.e.:

_____ DOLLARS \$ _____

If the bidder is a joint venture, the Bid Bond shall specifically identify and include each joint venturer as a principal.

C. If the bidder is a joint venture, a copy of the executed Joint Venture Agreement shall be submitted along with the bid materials.

5. We (I), 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 therefrom. 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.

6. 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.
7. The undersigned agrees that, if selected as General Contractor, he shall, within ten (10) 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.
8. 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.
9. The undersigned acknowledges that should their submitted Form of Proposal fail to have included a copy of your firm's prequalification certificate and an updated statement accompany their bid submission, that their bid will be invalid and considered non-responsive. Per CGS 4b-91 amended.

A. 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 the Project Referenced above.

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

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

**NORTH DINING DISH ROOM RENOVATION
PROJECT NUMBER: 300161**

**University of Connecticut
Storrs, CT**

In accordance with the accompanying Drawings and Specifications prepared by:

Maier Design Group, LLC

The Contract Price specified below subject to additions and deductions according to the terms of the Contract Documents.

C. BID CLARIFICATIONS:

The undersigned acknowledges receipt of the following Bid Clarifications issued during the bidding period and has included all changes therein in the above base bid amount.

- Clarifications/Addenda # _____, Dated _____
- Clarifications/Addenda # _____, Dated _____
- Clarifications/Addenda # _____, Dated _____
- Clarifications/Addenda # _____, Dated _____

D. PROPOSED BASE CONTRACT PRICE:

Having carefully examined the Bid Documents for the above reference project, and having visited the project site and examined all conditions affecting the work, the undersigned, upon written notice of award of contract, agrees to provide all labor, supervision, materials, tools, construction equipment, services, safety, insurance, bonds, and to pay all applicable taxes, and other costs necessary or required to complete the Work of this Bid in full accordance with all Bid Documents and within the required timeframe as indicated by the proposed schedule for the Lump Sum Bid of:

_____ **US Dollars**

(\$ _____) (Which incorporates all allowances as may be listed in the plans and specifications)

(Show the amount in both words and figures. In case of discrepancy, amount shown in words will govern.)

The University 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 the University. The low Bid shall be determined by taking the Base Price set forth in the Proposal form as selected by the University, plus the Alternates and/or Options selected by the University.

E. SCHEDULE OF ALTERNATES: (Not Used)

Provide Alternate Prices which reflect the work of the bid package under which this bid proposal was submitted and shall remain ***valid for the life of the project*** and include **all costs** for a complete installation. All pricing is inclusive of all costs of wages, applicable taxes, benefits, and applicable insurance. The Prices herein shall remain valid for the life of the project and include all costs for a complete installation. Alternate prices are good for both adds and deducts.

END OF ALTERNATES

F. SCHEDULE OF UNIT PRICES: (NOT USED)

All rates are inclusive of all costs of wages, applicable taxes, benefits, applicable insurance. The rates provided will be negotiated and included as part of the contract and of your subcontracts. The Unit Prices herein shall remain valid for the life of the project and include all costs for a complete installation. Unit prices are good for both adds and deducts.

End of Unit Prices

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
#300161**

FORM OF PROPOSAL

G. 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 Stipulated Sum shown above. The Schedule of Values is an integral part of this proposal. Please indicate N/A for those divisions of work not applicable. The costs provided below include the complete cost for furnishing and installing of materials, labor, and equipment required to provide the complete scope of work for each specified division (includes the costs of applicable taxes, insurance, bonds, overhead, profit, small tools, travel, parking, supervision, etc.). The "TOTAL" price must equal your total lump sum bid proposal.

Division	Group	
01	General Conditions	\$
02	Existing Conditions	\$
03	Concrete	\$
04	Masonry	\$
05	Metals	\$
06	Wood, Plastics, Composites	\$
07	Thermal & Moisture Protection	\$
08	Openings	\$
09	Finishes	\$
10	Specialties	\$
11	Equipment	\$
12	Furnishings	\$
13	Special Construction	\$
14	Conveying Equipment	\$
*21	Fire Suppression	\$
22	Plumbing	\$
*23	HVAC Heating, Ventilating, Air Conditioning	\$
25	Integrated Automation	\$
26	Electrical	\$
27	Communications	\$
28	Electronic Safety and Security	\$
*31	Earthwork	\$
32	Exterior Improvements	\$
33	Utilities	\$
34	Transportation	\$
35	Waterway and Marine Construction	\$
*40	Process Integration	\$
41	Material Process & Handling Equipment	\$
42	Process Heating, Cooling & Drying Equipment	\$
43	Process Gas & Liquid Handling, Purification & Storage Eqmt.	\$
44	Pollution & Waste Control Equipment	\$
45	Industry Specific Manufacturing Equipment	\$
46	Water & Wastewater Equipment	\$
*48	Electrical Power Generation	\$
Insurance		\$
Bonds		\$
Allowances	(where applicable)	\$
TOTAL		\$

H. The subdivision of Work in the proposed Contract Price is as follows:

ITEM 1 WORK BY GENERAL CONTRACTOR:

For all work other than that to be done by subcontractors included in Item 2A and Item 2B.

\$ _____ **(ITEM 1)**

Note: In accordance with paragraph 3.E.1 this amount, together with work by the general contractor as listed in Item 2A below, must be at least 10% of the total bid price.

ITEM 2A WORK BY SUBCONTRACTORS NAMED:

Subcontractors and prices for the following trades must be listed (if such prices exceed \$25,000). 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				

A copy of the executed agreement between the successful bidder and the named subcontractors above must be presented to the Office of CPCA at time of contract signing. The contract may not be executed until copies of executed agreements are received by CPCA.

ITEM 2B WORK BY SUBCONTRACTORS NOT NAMED:

\$ _____
(INCLUDES ALL SUBCONTRACT WORK NOT LISTED IN ITEM 2A)

The undersigned agrees that each of the subcontractors listed on this FORM OF PROPOSAL will be used for the work indicated at the amount stated, unless a substitution is permitted by the University.

I. SET-ASIDE CONTRACTOR SCHEDULE

By submitting a bid for this project, the bidder represents that it has used good faith efforts to secure commitments from SBEs and MBEs in a value that is equal to, or greater than, the Set Aside (as defined in the Invitation to Bid). If, despite its good faith efforts, a bidder has not yet been able to secure commitments for the full value of the Set Aside, the bidder will nonetheless be expected to meet the Set Aside if it is awarded the contract for this project

Below, the bidder shall list those SBEs and MBEs from whom the bidder has secured commitments for the project as of the date hereof and the dollar amounts the bidder anticipates awarding to each such SBE/MBE. The amount is NOT LESS THAN 30% of the proposed base contract price as stated on the Form of Proposal, Section D.

<u>Name</u>	<u>Address</u>	<u>Amount</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

CERTIFICATE OF ELIGIBILIT HAS BEEN OBTAINED THROUGH THE FOLLOWING WEBSITE;
<https://www.biznet.ct.gov/SupplierDiversity/SDSearch.aspx>

FOR EACH OF THE NAMED CONTRACTORS AND IS BEING SUBMITTED WITH THIS FORM.

The Undersigned 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 the awarding authority.

Authorized Signature

Title

Company Name

J. BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART I - Bidder Information

Company Name Street Address City & State Chief Executive	Bidder Federal Employer Identification Number _____ Or Social Security Number _____
Major Business Activity (brief description)	Bidder Identification (response optional/definitions in Instruction to Bidders page 18) -Bidder is a small contractor. Yes__ No__ -Bidder is a minority business enterprise Yes__ No__ (If yes, check ownership category) Black__ Hispanic__ Asian American__ American Indian/Alaskan Native ____ Iberian Peninsula__ Individual(s) with a Physical Disability__ Female__
Bidder Parent Company(If any)	-Bidder is certified as above by State of CT Yes__ No__ -
Other Locations in Ct. (If any)	DAS Certification Number _____

PART II - Bidder Nondiscrimination Policies and Procedures

<p>1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes__ No__</p>	<p>7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes__ No__</p>
<p>2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes__ No__</p>	<p>8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes__ No__</p>
<p>3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes__ No__</p>	<p>9. Does your company have a mandatory retirement age for all employees? Yes__ No__</p>
<p>4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes__ No__</p>	<p>10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes__ No__ NA__</p>
<p>5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes__ No__</p>	<p>11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes__ No__ NA__</p>
<p>6. Does your company have a collective bargaining agreement with workers? Yes__ No__ 6a. If yes, do the collective bargaining agreements contain non-discrimination clauses covering all workers? Yes__ No__ 6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of Ct? Yes__ No__</p>	<p>12. Does your company have a written affirmative action Plan? If no, please explain. Yes__ No__ 13. Is there a person in your company who is responsible for equal employment opportunity? Yes__ No__ If yes, give name and phone number. _____ _____ _____</p>

**UNIVERSITY OF CONNECTICUT
NORTH DINING DISH ROOM RENOVATION
#300161**

FORM OF PROPOSAL

Part III - Bidder Subcontracting Practices

1. Will the work of this contract include subcontractors or suppliers? Yes__ No__
 1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise as defined on page 1 / use additional sheet if necessary)
 1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a? Yes__ No__

Part IV – Bidder Employment Information

Date: _____

JOB CATEGORY	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Management											
Business & Financial Ops											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation, Maintenance & Repair											
Material Moving Workers											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES		(ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)									
Apprentices											
Trainees											

PART V - Bidder Hiring and Recruitment Practices

1. Which of the following recruitment sources are used by you? (check yes or not and report percent used)				2. Check (x) any of the below listed requirements that you use as a hiring qualification		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination?
SOURCE	YES	NO	% of applicants provided by source	(x)		
State Employment Service					Work Experience	
Private Employment Agencies					Ability To Speak Or Write English	
Schools And Colleges					Written Tests	
Newspaper Advertisements					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendations	
Minority/Community Organizations					Height Or Weight	
Others Please Identify					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing).

I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. SAT.

(Signature) (Date Signed)

(Title) (Telephone)

K. PROPOSER'S QUALIFICATION/RESPONSIBILITY STATEMENT

The Proposer shall have already completed and submitted the Questionnaire and other submission required by the University in its Invitation to Pre-Qualify, regarding the Proposer's qualifications. If changed circumstances arising since the initial submission, or other facts have occurred which would result in a material change to any of the Proposer's initial responses or submissions, the Proposer shall provide any such supplementary, or revised information at this time, along with its Proposal.

1. State, identify any such changed circumstances or other facts and provide any such supplementary or revised information as described above, identifying specifically, by number and content, each prior question, response to the Questionnaire, or information changed, supplemented or revised. (Attach a separate sheet if necessary)

2. State "NONE" if there are no changes to be made. _____

Please note that if the end date of the time period covered by the information submitted during your pre-qualification is three or more months old, please provide current financial documentation demonstrating that your present financial position has remained the same, or showing and identifying any changes in any way, in relation to the audited financial statement you submitted with your pre-qualified application on this proposal.

Dated at	this	day of	20
Name of Organization:			
Signature:			
Print Name:			
Title:			
<u>Notary Statement:</u>			
Mr./Mrs./Ms.		being duly sworn deposes and says that he/she	
is the	of	and that the	
(Position or Title)		(Firm Name)	
answers to the foregoing questions and all statements therein contained are true and correct.			
Subscribed and sworn to before me this		day of	20
Notary Public:			
My Commission Expires:		20	



STATE OF CONNECTICUT GIFT AND CAMPAIGN CONTRIBUTION CERTIFICATION

Written or electronic certification to accompany a State contract with a value of \$50,000 or more, pursuant to C.G.S. §§ 4-250, 4-252(c) and 9-612(f)(2) and Governor Dannel P. Malloy's Executive Order 49.

INSTRUCTIONS:

Complete all sections of the form. Attach additional pages, if necessary, to provide full disclosure about any lawful campaign contributions made to campaigns of candidates for statewide public office or the General Assembly, as described herein. Sign and date the form, under oath, in the presence of a Commissioner of the Superior Court or Notary Public. Submit the completed form to the awarding State agency at the time of initial contract execution and if there is a change in the information contained in the most recently filed certification, such person shall submit an updated certification either (i) not later than thirty (30) days after the effective date of such change or (ii) upon the submittal of any new bid or proposal for a contract, whichever is earlier. Such person shall also submit an accurate, updated certification not later than fourteen days after the twelve-month anniversary of the most recently filed certification or updated certification.

- CHECK ONE:** Initial Certification 12 Month Anniversary Update (Multi-year contracts only.)
- Updated Certification because of change of information contained in the most recently filed certification or twelve-month anniversary update.

GIFT CERTIFICATION:

As used in this certification, the following terms have the meaning set forth below:

- 1) "Contract" means that contract between the State of Connecticut (and/or one or more of its agencies or instrumentalities) and the Contractor, attached hereto, or as otherwise described by the awarding State agency below;
- 2) If this is an Initial Certification, "Execution Date" means the date the Contract is fully executed by, and becomes effective between, the parties; if this is a twelve-month anniversary update, "Execution Date" means the date this certification is signed by the Contractor;
- 3) "Contractor" means the person, firm or corporation named as the contractor below;
- 4) "Applicable Public Official or State Employee" means any public official or state employee described in C.G.S. §4-252(c)(1)(i) or (ii);
- 5) "**Gift**" has the same meaning given that term in C.G.S. § 4-250(1);
- 6) "Principals or Key Personnel" means and refers to those principals and key personnel of the Contractor, and its or their agents, as described in C.G.S. §§ 4-250(5) and 4-252(c)(1)(B) and (C).

I, the undersigned, am a Principal or Key Personnel of the person, firm or corporation authorized to execute this certification on behalf of the Contractor. I hereby certify that, no gifts were made by (A) such person, firm, corporation, (B) any principals and key personnel of the person firm or corporation who participate substantially in preparing bids, proposals or negotiating state contracts or (C) any agent of such, firm, corporation, or principals or key personnel who participates substantially in preparing bids, proposals or negotiating state contracts, to (i) any public official or state employee of the state agency or quasi-public agency soliciting bids or proposals for state contracts who participates substantially in the preparation of bid solicitations or request for proposals for state contracts or the negotiation or award of state contracts or (ii) any public official or state employee of any other state agency, who has supervisory or appointing authority over such state agency or quasi-public agency.

I further certify that no Principals or Key Personnel know of any action by the Contractor to circumvent (or which would result in the circumvention of) the above certification regarding **Gifts** by providing for any other Principals, Key Personnel, officials, or employees of the Contractor, or its or their agents, to make a **Gift** to any Applicable Public Official or State Employee. I further certify that the Contractor made the bid or proposal for the Contract without fraud or collusion with any person.

CAMPAIGN CONTRIBUTION CERTIFICATION:

I further certify that, on or after January 1, 2011, neither the Contractor nor any of its principals, as defined in C.G.S. § 9-612(f)(1), has made any **campaign contributions** to, or solicited any contributions on behalf of, any exploratory committee, candidate committee, political committee, or party committee established by, or supporting or authorized to support, any candidate for statewide public office, in violation of C.G.S. § 9-612(f)(2)(A). I further certify that **all lawful campaign contributions** that have been made on or after January 1, 2011 by the Contractor or any of its principals, as defined in C.G.S. § 9-612(f)(1), to, or solicited on behalf of, any exploratory committee, candidate committee, political committee, or party committee established by, or supporting or authorized to support any candidates for statewide public office or the General Assembly, are listed below:

Lawful Campaign Contributions to Candidates for Statewide Public Office:

<u>Contribution Date</u>	<u>Name of Contributor</u>	<u>Recipient</u>	<u>Value</u>	<u>Description</u>

Lawful Campaign Contributions to Candidates for the General Assembly:

<u>Contribution Date</u>	<u>Name of Contributor</u>	<u>Recipient</u>	<u>Value</u>	<u>Description</u>

Sworn as true to the best of my knowledge and belief, subject to the penalties of false statement.

Printed Contractor Name

Printed Name of Authorized Official

Signature of Authorized Official

Subscribed and acknowledged before me this _____ day of _____, 20____.

Commissioner of the Superior Court (or Notary Public)

My Commission Expires





STATE OF CONNECTICUT

AFFIRMATION OF RECEIPT OF STATE ETHICS LAWS SUMMARY

Written or electronic affirmation to accompany a large State construction or procurement contract, having a cost of more than \$500,000, pursuant to Connecticut General Statutes §§ 1-101mm and 1-101qq

INSTRUCTIONS:

Complete all sections of the form. Submit completed form to the awarding State agency or contractor, as directed below.

CHECK ONE:

- I am a person seeking a large State construction or procurement contract. I am submitting this affirmation to the awarding State agency with my bid or proposal. [Check this box if the contract will be awarded through a competitive process.]
- I am a contractor who has been awarded a large State construction or procurement contract. I am submitting this affirmation to the awarding State agency at the time of contract execution. [Check this box if the contract was a sole source award.]
- I am a subcontractor or consultant of a contractor who has been awarded a large State construction or procurement contract. I am submitting this affirmation to the contractor.
- I am a contractor who has already filed an affirmation, but I am updating such affirmation either (i) no later than thirty (30) days after the effective date of any such change or (ii) upon the submittal of any new bid or proposal, whichever is earlier.

IMPORTANT NOTE:

Within fifteen (15) days after the request of such agency, institution or quasi-public agency for such affirmation contractors shall submit the affirmations of their subcontractors and consultants to the awarding State agency. Failure to submit such affirmations in a timely manner shall be cause for termination of the large State construction or procurement contract.

AFFIRMATION:

I, the undersigned person, contractor, subcontractor, consultant, or the duly authorized representative thereof, affirm (1) receipt of the summary of State ethics laws* developed by the Office of State Ethics pursuant to Connecticut General Statutes § 1-81b and (2) that key employees of such person, contractor, subcontractor, or consultant have read and understand the summary and agree to comply with its provisions.

* The summary of State ethics laws is available on the State of Connecticut's Office of State Ethics website.

Signature

Date

Printed Name

Title

Firm or Corporation (if applicable)

Street Address

City

State

Zip

Awarding State Agency



STATE OF CONNECTICUT

Written or electronic PDF copy of the written certification to accompany a large state contract pursuant to P.A. No. 13-162 (Prohibiting State Contracts With Entities Making Certain Investments In Iran)

Respondent Name: _____

INSTRUCTIONS:

- CHECK ONE: [] Initial Certification. [] Amendment or renewal.

A. Who must complete and submit this form. Effective October 1, 2013, this form must be submitted for any large state contract, as defined in section 4-250 of the Connecticut General Statutes. This form must always be submitted with the bid or proposal, or if there was no bid process, with the resulting contract, regardless of where the principal place of business is located.

Pursuant to P.A. No. 13-162, upon submission of a bid or prior to executing a large state contract, the certification portion of this form must be completed by any corporation, general partnership, limited partnership, limited liability partnership, joint venture, nonprofit organization or other business organization whose principal place of business is located outside of the United States. United States subsidiaries of foreign corporations are exempt. For purposes of this form, a "foreign corporation" is one that is organized and incorporated outside the United States of America.

Check applicable box:

- [] Respondent's principal place of business is within the United States or Respondent is a United States subsidiary of a foreign corporation. Respondents who check this box are not required to complete the certification portion of this form, but must submit this form with its Invitation to Bid ("ITB"), Request for Proposal ("RFP") or contract package if there was no bid process. [] Respondent's principal place of business is outside the United States and it is not a United States subsidiary of a foreign corporation. CERTIFICATION required. Please complete the certification portion of this form and submit it with the ITB or RFP response or contract package if there was no bid process.

B. Additional definitions.

- 1) "Large state contract" has the same meaning as defined in section 4-250 of the Connecticut General Statutes; 2) "Respondent" means the person whose name is set forth at the beginning of this form; and 3) "State agency" and "quasi-public agency" have the same meanings as provided in section 1-79 of the Connecticut General Statutes.

C. Certification requirements.

No state agency or quasi-public agency shall enter into any large state contract, or amend or renew any such contract with any Respondent whose principal place of business is located outside the United States and is not a United States subsidiary of a foreign corporation unless the Respondent has submitted this certification.

Complete all sections of this certification and sign and date it, under oath, in the presence of a Commissioner of the Superior Court, a Notary Public or a person authorized to take an oath in another state.

CERTIFICATION:

I, the undersigned, am the official authorized to execute contracts on behalf of the Respondent. I certify that:

- [] Respondent has made no direct investments of twenty million dollars or more in the energy sector of Iran on or after October 1, 2013, as described in Section 202 of the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010. [] Respondent has either made direct investments of twenty million dollars or more in the energy sector of Iran on or after October 1, 2013, as described in Section 202 of the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010, or Respondent made such an investment prior to October 1, 2013 and has now increased or renewed such an investment on or after said date, or both.

Sworn as true to the best of my knowledge and belief, subject to the penalties of false statement.

Printed Respondent Name

Printed Name of Authorized Official

Signature of Authorized Official

Subscribed and acknowledged before me this _____ day of _____, 20____.

Commissioner of the Superior Court (or Notary Public)

My Commission Expires

L. ETHICS FORMS - A duly authorized representative of the company must sign these forms

- √ **These forms must be notarized and clearly show notary seal or acknowledged by a Commissioner of the Superior Court.**
- √ ALL REQUIRED forms, **must be completed, signed and returned** by the bidder/proposer as part of the bid/proposal/RFQ response package.
- √ Failure to submit ALL REQUIRED forms constitutes grounds for rejection of your bid/proposal/RFQ.
- √ If it is determined by the University of Connecticut and/or State of Connecticut that **any information requested was not referenced and submitted** with this bid/proposal/RFQ/LOI, and then such determination **will be just cause for disqualification of the bid/proposal/RFQ.**

All pages within the Form of Proposal must be completed, signed by a duly authorized representative of the firm and returned as part of the bid/proposal/RFQ response package. NO FACSIMILE SIGNATURE PERMITTED

- √ **If the form of 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.**
- √ **Failure to submit ALL REQUIRED forms constitutes grounds for rejection of your bid/proposal/RFQ.**
- √ **If it is determined by the University of Connecticut and/or State of Connecticut that any information requested but not referenced and submitted with this bid/proposal; such determination will be just cause for disqualification of the bid/proposal.**

(TO BE FILLED IN AND SIGNED BY THE BIDDER)

Signed the _____ day of _____ 20_____.

Firm Name: _____
Street: _____
City/State/Zip Code: _____
Telephone Number: _____
Signature/Title: _____
Print Name/Title: _____

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

Firm Name: _____
Street: _____
City/State/Zip Code: _____
Telephone Number: _____
Signature/Title: _____
Print Name/Title: _____
Signature/Title: _____
Print Name/Title: _____

End of Form of Proposal



Opportunity * Guidance * Support



THIS IS A PUBLIC WORKS PROJECT

Covered by the

PREVAILING WAGE LAW

CT General Statutes Section 31-53

**If you have QUESTIONS regarding your wages
CALL (860) 263-6790**

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

Section 31-53b

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268. (b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section. (c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project. (d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in

accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE, PROGRAM OR TRAINING

(Applicable to public works contracts as described by Conn. Gen. Stat. § 31-53(g) entered into *on or after July 1, 2009*)

- (1) This requirement was created by Public Act No. 08-83, which is codified in Section 31-53b of the Connecticut General Statutes;
- (2) The course, program or training is required for public works contracts as described by Conn. Gen. Stat. § 31-53(g) entered into on or after July 1, 2009;
- (3) It is required of private workers (not state or municipal workers) and apprentices who perform the work of a mechanic, laborer or worker pursuant to the classifications of labor under Conn. Gen. Stat. § 31-53 on a public works project as described by Conn. Gen. Stat. § 31-53(g);
- (4) The ten-hour construction safety and health course, program or training pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, a new mining training program approved by the Federal Mine Safety and Health Administration in accordance with 30 C.F. R. 48, or, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Proof of course, program or training completion shall be demonstrated through the presentation of a “completion document” (card, document, certificate or other written record issued by federal OSHA or by the Federal Mine Safety and Health Administration) as defined by Conn. State Agencies Regs. § 31-53b-1(2).
- (8) Any completion document with an issuance date more than 5 years prior to the commencement date of the public works project shall not constitute proof of compliance with § 31-53b;
- (9) For each person who performs the duties of a mechanic, laborer or worker on a public works project, the contractor shall affix a copy of the completion document

to the certified payroll required to be submitted to the contracting agency for such project on which such worker's name first appears;

- (10) Any mechanic, laborer or worker on a public works project found to be in non-compliance shall be subject to removal from the project if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
- (11) Any such employee who is determined to be in noncompliance may continue to work on a public works project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (12) The statute provides the minimum standards required for the completion of a construction safety and health course, program or training by employees on public works contracts; any contractor can exceed these minimum requirements.;
- (13) Regulations pertaining to § 31-53b are located at Conn. State Agencies Regs. §31-53b-1 *et seq.*, and are effective May 5, 2009. The regulations are posted on the CTDOL website;
- (14) Any questions regarding this statute or the regulations may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

November 29, 2006

Notice

To All Mason Contractors and Interested Parties Regarding Construction Pursuant to Section 31-53 of the Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute. Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute. The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.

- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

STATUTE 31-55a

- SPECIAL NOTICE -

**To: All State and Political Subdivisions, Their Agents, and Contractors
Connecticut General Statute 31-55a - Annual adjustments to wage rates by
contractors doing state work.**

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the **contractor's** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

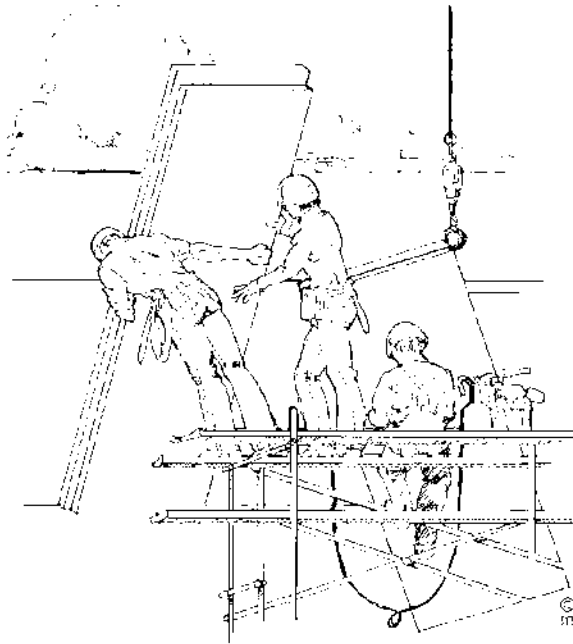
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached “Contracting Agency Certification Form” to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

 Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACT COMPLIANCE UNIT

CONTRACTING AGENCY CERTIFICATION FORM

I, _____, acting in my official capacity as _____,
authorized representative title

for _____, located at _____,
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with
_____, located at _____,
project name and number address

shall be \$_____, which includes all work, regardless of whether such project
consists of one or more contracts.

CONTRACTOR INFORMATION

Name: _____

Address: _____

Authorized Representative: _____

Approximate Starting Date: _____

Approximate Completion Date: _____

Signature

Date

Return To: Connecticut Department of Labor
Wage & Workplace Standards Division
Contract Compliance Unit
200 Folly Brook Blvd.
Wethersfield, CT 06109

Date Issued: _____

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM
Construction Manager at Risk/General Contractor/Prime Contractor

I, _____ of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

Street

City

and all of its subcontractors will pay all workers on the

Project Name and Number

Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

Signed

Subscribed and sworn to before me this _____ day of _____, _____.

Notary Public

Return to:
Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

Rate Schedule Issued (Date): _____

CERTIFIED PAYROLL FORM WWS - CPI

In accordance with [Connecticut General Statutes, 31-53](#) Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

Note: Once you have downloaded these forms and are ready to print them out, set the print function on your PC to the horizontal print orientation.

Note2: Please download both the Payroll Certification for Public Works Projects **and** the Certified Statement of Compliance for a complete package. The Certified Statement of Compliance appears on the same page as the Fringe Benefits Explanation page.

Announcement: The Certified Payroll Form WWS-CPI can now be completed on-line!

- [Certified Payroll Form WWS-CPI](#) (PDF, 727KB)
- [Sample Completed Form](#) (PDF, 101KB)

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker’s compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care _____ 4) Disability _____
- 2) Pension or retirement _____ 5) Vacation, holiday _____
- 3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____ of _____, (hereafter known as Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such person is covered by a worker’s compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

_____ Submitted on (Date)

(Signature) (Title)

OCCUPATIONAL CLASSIFICATION BULLETIN

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53.

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification.

Below are additional clarifications of specific job duties performed for certain classifications:

- **ASBESTOS WORKERS**
 - Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.
- **ASBESTOS INSULATOR**
 - Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.
- **BOILERMAKERS**
 - Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.
- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**
 - Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.
- **CARPENTERS, MILLWRIGHTS. PILEDIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**
 - Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation

of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **CLEANING LABORER**

- The clean up of any construction debris and the general cleaning, including sweeping, wash down, mopping, wiping of the construction facility, washing, polishing, dusting, etc., prior to the issuance of a certificate of occupancy falls under the *Labor classification*.

- **DELIVERY PERSONNEL**

- If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

- An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer/tradesman and not a delivery personnel.

- **ELECTRICIANS**

- Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ***License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.**

- **ELEVATOR CONSTRUCTORS**

- Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1,2,5,6.**

- **FORK LIFT OPERATOR**

- Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

- Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

- Glazing wood and metal sash, doors, partitions, and 2 story aluminum

storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce.

- **IRONWORKERS**

- Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce. Insulated metal and insulated composite panels are still installed by the Ironworker.

- **INSULATOR**

- Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings. Past practice using the applicable licensed trades, Plumber, Sheet Metal, Sprinkler Fitter, and Electrician, is not inconsistent with the Insulator classification and would be permitted.

- **LABORERS**

- Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

- Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hanging+ for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

- Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

- Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

- Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ****License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

- Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ****License required, crane operators only, per Connecticut General Statutes.***

- **ROOFERS**

- Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (tear-off and/or removal of any type of roofing and/or clean-up of any and all areas where a roof is to be relaid)

- **SHEETMETAL WORKERS**

- Fabricate, assemble, install and repair sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, fascia, louvers, partitions, wall panel siding, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Insulated metal and insulated composite panels are still installed by the Iron Worker. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal

and composite lockers and shelving, kitchen equipment, and walk-in coolers.

- **SPRINKLER FITTERS**

- Installation, alteration, maintenance and repair of fire protection sprinkler systems. ***License required per Connecticut General Statutes: F-1,2,3,4.**

- **TILE MARBLE AND TERRAZZO FINISHERS**

- Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

- **Definitions:**

- 1) “Site of the work” (29 Code of Federal Regulations (CFR) 5.2(l)(b) is the physical place or places where the building or work called for in the contract will remain and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contract or project;

- (a) Except as provided in paragraph (l) (3) of this section, job headquarters, tool yards, batch plants, borrow pits, etc. are part of the “site of the work”; provided they are dedicated exclusively, or nearly so, to the performance of the contract or project, and provided they are adjacent to “the site of work” as defined in paragraph (e)(1) of this section;

- (b) Not included in the “site of the work” are permanent home offices, branch plant establishments, fabrication plants, tool yards etc, of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular State or political subdivision contract or uncertain and indefinite periods of time involved of a few seconds or minutes duration and where the failure to count such time is due to consideration justified by industrial realities (29 CFR 785.47)

- 2) “Engaged to wait” is waiting time that belongs to and is controlled by the employer which is an integral part of the job and is therefore compensable as hours worked. (29 CFR 785.15)

- 3) “Waiting to be engaged” is waiting time that an employee can use effectively for their own purpose and is not compensable as hours worked. (29 CFR 785.16)

- 4) “De Minimus” is a rule that recognizes that unsubstantial or insignificant periods of time which cannot as a practical administrative matter be precisely recorded for payroll purposes, may be disregarded. This rule applies only where there are uncertain and indefinite periods of time involved of a short duration and where the failure to count such

time is due to consideration justified by worksite realities. For example, with respect to truck drivers on prevailing wage sites, this is typically less than 15 minutes at a time.

○ **Coverage of Truck Drivers on State or Political subdivision Prevailing Wage Projects**

- Truck drivers **are covered** for payroll purposes under the following conditions:
 - Truck Drivers for time spent working on the site of the work.
 - Truck Drivers for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimus
 - Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
 - Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract or project where a significant portion of such building or work is constructed and the physical places where the building or work outlined in the contract will remain.

For example: Truck drivers delivering asphalt are covered under prevailing wage while "engaged to wait" on the site and when directly involved in the paving operation, provided the total time is not "de minimus"

- Truck Drivers **are not** covered in the following instances:
 - Material delivery truck drivers while off "the site of the work"
 - Truck Drivers traveling between a prevailing wage job and a commercial supply facility while they are off the "site of the work"
 - Truck drivers whose time spent on the "site of the work" is de minimus, such as under 15 minutes at a time, merely to drop off materials or supplies, including asphalt.

These guidelines are similar to U.S. Labor Department policies. The application of these guidelines may be subject to review based on factual considerations on a case by case basis.

For example:

- Material men and deliverymen are not covered under

prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.

- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

Any questions regarding the proper classification should be directed to:

*Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543*

**Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES**

Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

- Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.
- If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and (Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

- a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

- a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.



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 ON-CALL TRADE (FOR CONTRACTS OF \$500,000 OR LESS)
Rev. 6-6-19

AGREEMENT made and effective as of the date that the Agreement is fully executed by the parties hereto.

(Paragraph deleted)

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:

The Contractor is a participant in the University of Connecticut's On-Call Trade Labor Program. This Contract has been issued under that program pursuant to the terms and

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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.

Init.

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User Notes:

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conditions of the Master Agreement for On-Call Trade Contractor Services between the Owner and the Contractor which was executed by the Owner on _____ (the "Master Agreement").



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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 the Master Agreement, 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.)

(Paragraphs deleted)

§ 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.)

Init.

[] 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
-----------------	-----------------------------

§ 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.

(Paragraph deleted)

§ 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.

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
------	-------	---------------------------

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
------	-------

§ 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.

Init.

Item

Units and Limitations

Price per Unit (\$0.00)

§ 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

(Paragraphs deleted)

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.

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§ 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:

(Paragraphs deleted)

§5.1.7.1 Upon determination by the Owner 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 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.

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§ 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 (including, without limitation, those set forth in Section 9.10.2 of the General Conditions) 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 conditions set forth in Section 5.2.1 have been met subject to the provisions of Article 9 of the General Conditions.

(Paragraphs deleted)

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) or, in the case of a project for UCONN Health ("UCH"), UCH's 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.

(Paragraphs deleted)

§ 6.2

(Paragraphs deleted)

Not Used.

Init.

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.

(Paragraphs deleted)

§ 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

(Paragraphs deleted)

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 Owner's designated representative and primary point of contact for the Contractor's day to day communications with the Owner. 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)

§ 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

(Paragraphs deleted)

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 address for the designated representative of the receiving party 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 or promotion; or
- (b) to express or to imply any endorsement by the Owner 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 or e-mailed with the same force and effect as if the originally executed Agreement had been delivered.

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§ 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 (a "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** The Master Agreement
- .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 the Bid Clarifications and Addenda.
- .6** Specifications prepared by _____ and dated _____, and which are listed in the Table of Contents attached as Exhibit C, as the same may have been modified or supplemented by the Bid Clarifications and Addenda.

(Paragraph deleted)

- .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

(Table deleted)

(Table deleted)

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

(Paragraph deleted)

- 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.

(Paragraph deleted)

- ii. The Owner's Contractor Environmental, Health & Safety Manual current as of the date of the execution of this Agreement by the Owner.

(Paragraphs deleted)

- iii. The Owner's Code of

(Table deleted)

- Conduct current as of the date of the execution of this Agreement by the Owner.

Signed and agreed by:

Init.

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

Date: _____

Date: _____



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**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, the following terms are defined as follows: 1) "Commission" means the Commission on Human Rights and Opportunities; 2) "Contract" and "contract" include any extension or modification of the Contract or contract; 3) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor; 4) "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; 5) "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations; 6) "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; 7) "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced; 8) "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; 9) "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 Conn. Gen. Stat. § 32-9n; and 10) "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.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, unless the contract is a municipal public works contract or quasi-public agency project contract, (2) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. § 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, state or government described in the immediately preceding enumerated items (1), (2), (3), or (4).

(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 the 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; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract

or understanding and each vendor with which the 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 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 Conn. Gen. Stat. §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Conn. Gen. Stat. §§ 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 Conn. Gen. Stat. § 46a-56. If the contract is a public works contract, municipal public works contract or contract for a quasi-public agency project, the Contractor agrees and warrants that he or she will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works or quasi-public agency projects.

(c) 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 may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

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

(e) The Contractor shall include the provisions of subsection (b) 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 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. 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 Conn. Gen. Stat. § 46a-56 as amended; 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.

(f) The Contractor agrees to comply with the regulations referred to in this Section 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.

(g) (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 Conn. Gen. Stat. § 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 Conn. Gen. Stat. § 46a-56.

(h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. 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 Conn. Gen. Stat. § 46a-56 as amended; 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.

3. 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.

4. 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 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 §1-101q, 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.

5. 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/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.

6. 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.

7. 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.

8. 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.

AIA[®] Document A201[™] – 2017

General Conditions of the Contract for Construction

AIA A201-2017 FOR ON-CALL TRADE (FOR CONTRACTS OF \$500,000 OR LESS)
Rev. 9-20-19

for the following **PROJECT:**
(Name and location or address)

THE OWNER:
(Name and address)

THE CONTRACTOR:
(Name and address)

THE ARCHITECT:
(Name and address)

TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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.

Int.

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User Notes:

(1633248366)

- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES



Init.

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

(Paragraphs deleted)

§ 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 Master Agreement (as defined in the Agreement), 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 intended 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 written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

(Paragraphs deleted)

§ 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.

Init.

§ 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, among, 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'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.

§ 1.2.1.2.1 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.

§ 1.2.1.2.2 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.

(Paragraphs deleted)

§ 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

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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 or notice of termination 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 designated representative and the Initial Decision Maker) by certified or registered mail, or by courier providing proof of delivery.

(Paragraphs deleted)

§ 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

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Init.

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 designated 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.

(Paragraphs deleted)

§ 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.

(Paragraph deleted)

§ 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 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.

(Paragraphs deleted)

§ 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.

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§ 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.

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

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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.

Int.

§ 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 and 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

Init.

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.

(Paragraphs deleted)

§ 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.

§ 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

Init.

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

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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.

(Paragraph deleted)

§ 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

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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.

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§ 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

Init.

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

Init.

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 of the Work; 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

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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

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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.

(Paragraphs deleted)

§ 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

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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 contract.

§ 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 as requested by the Owner. 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.

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§ 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.

Contractor/Subcontractor Combined Overhead and Profit Markup Table:	
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%

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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 reimbursement of 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 Order 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

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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.

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§ 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, the 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 or any operations on the Project site 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 of the Work within the Contract Time.

(Paragraph deleted)

§ 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

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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 Documents.

§ 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

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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 and in accordance with 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.

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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 in advance 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

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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, Sub-subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

(Paragraph deleted)

§ 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 Approval of payment for stored materials or equipment is subject to inspection by Architect and Owner of such stored materials or equipment.

§ 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, (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 or Sub-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 copies of all certified payrolls;
- .11 failure to provide copies of Subcontracts as required by statute and as otherwise requested by the Owner;
- .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

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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 the 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 the 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.

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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

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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 and will not be canceled or allowed to expire until at least thirty (30) days' prior written notice has been given to the Owner; (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) Contractor's certification that none of the material installed contains 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, any Subcontractor, Sub-subcontractor or any other party for whom any of them is responsible, 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

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Claims.

§ 9.10.4

(Paragraphs deleted)

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

Init.

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 Subcontractor and Sub-subcontractor 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, 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 performing any part of 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,

Init.

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 and the date of Substantial Completion of the Work established pursuant to Section 9.8.4.

§ 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.

§ 10.2.5.1 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.

§ 10.2.6 Not Used

§ 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.

(Paragraphs deleted)

§ 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

Int.

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 areas 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 for 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

Init.

(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.

(Paragraphs deleted)

§ 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 and 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 and in compliance with 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 form which has been adopted by the Owner as its required form of payment or performance bond, as applicable. 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

Init.

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.

(Paragraphs deleted)

§ 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 (if any) 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.

(Paragraphs deleted)

§ 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

init.

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.

Init.

§ 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 construed in accordance with and governed by the laws of the State of Connecticut without regard to its principles of conflicts of laws.

§ 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

Init.

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.

(Paragraph deleted)

§ 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

Int.

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") has been provided to the Contractor (where required) 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. 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 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.

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§ 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

(Paragraphs deleted)
stopped.

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§ 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
(Paragraphs deleted)

§ 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 Contractor 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 the sum of (i) the costs of finishing the Work, (ii) the compensation for the Architect's services and expenses made necessary thereby, and (iii) other damages incurred by the Owner and not expressly waived, such excess shall be retained by the Owner. If such costs and

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damages exceed the unpaid balance, the Contractor shall pay to the Owner an amount equal to such excess. The amount to be paid to the Owner shall be certified by the Architect and Initial Decision Maker, upon application, and the obligation of the Contractor to make payment to the Owner under this Section 14.2.4 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.

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§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.

(Paragraphs deleted)

§ 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.

(Paragraphs deleted)

**§ 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 the Owner is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the Owner within a reasonable time not exceeding twenty-one (21) days after discovery. The notice shall provide sufficient detail to enable the Owner 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

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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 Contractor has not provided substantiating evidence of its Claim; or (2) 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

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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, if any, 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.

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§ 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 these General Conditions may be faxed or 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__.

UNIVERSITY OF CONNECTICUT

OWNER (Signature)
Scott A. Jordan
Executive VP for Administration & CFO

Duly Authorized
(Printed name and title)
Date: _____

CONTRACTOR (Signature)

Duly Authorized
(Printed name and title)
Date: _____

(Paragraphs deleted)

PROJECT MANUAL

Project #300161

MCCONAUGHY DINING HALL DISH ROOM RENOVATIONS
North Dining Hall
Storrs, CT 06269

**Construction Documents
Volume 1 of 1**



State of Connecticut

University of Connecticut
Office of Planning, Design and Construction

Thomas Katsouleas
President

Prepared By:

MAIER DESIGN GROUP llc
34 SEQUASSEN STREET, HARTFORD CT

January 23, 2020

DIVISION 01 GENERAL REQUIREMENTS

<u>TAB</u>	<u>SECTION</u>	<u>DESCRIPTION</u>
01	01-1000	SUMMARY
02	01-2100	ALLOWANCES
03	01-2200	UNIT PRICES
04	01-2300	ALTERNATES
05	01-2500	SUBSTITUTION PROCEDURES
06	01-2600	CONTRACT MODIFICATION PROCEDURES
07	01-3100	PROJECT MANAGEMENT AND COORDINATION
08	01-3200	CONSTRUCTION PROGRESS DOCUMENTATION
09	01-3233	PHOTOGRAPHIC DOCUMENTATION
10	01-3300	SUBMITTAL PROCEDURES
11	01-4000	QUALITY REQUIREMENTS
12	01-5000	TEMPORARY FACILITIES AND CONTROLS
13	01-5640	TREE PROTECTION AND PRESERVATION
14	01-5719	TEMPORARY ENVIRONMENTAL CONTROLS
15	01-6000	PRODUCT REQUIREMENTS
16	01-7300	EXECUTION
17	01-7700	CLOSEOUT PROCEDURES
18	01-7823	OPERATION AND MAINTENANCE DATA
19	01-7839	PROJECT RECORD DOCUMENTS
20	01-7900	DEMONSTRATION AND TRAINING

TECHNICAL SPECIFICATIONS

<u>SECTION</u>	<u>DESCRIPTION</u>
01 72 29	CUTTING AND PATCHING
02 41 19	SELECTIVE DEMOLITION FOR REMODELING
04 22 23	UNIT MASONRY
07 84 00	FIRESTOPPING
09 21 16	GYPSUM BOARD ASSEMBLIES

09 51 00	ACOUSTICAL CEILINGS
09 91 13	PAINTING
11-4000	FOOD SERVICE EQUIPMENT

SECTION 01-1000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Related Documents
2. Summary
3. Project information.
4. Work covered by Contract Documents.
5. Work under separate contracts.
6. Definitions
7. Time of Completion.
8. Documents required before execution of the Contract.
9. Access to site and use of the Site.
10. Coordination with occupants.
11. Work restrictions.
12. Prohibited Items
13. Work Sequence.
14. Miscellaneous provisions.

B. Related Requirements:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
2. Division 01 Section "Temporary Tree and Planting Protection" for general protection and pruning of existing trees and plants that are affected by the execution of the Work.
3. Division 01 Section "Submittal Procedures" for submittal requirements prior to start of work.

1.3 PROJECT INFORMATION

A. Project Identification: McConaughy Dining Hall Dish Room Renovation #300161

1. Project Location: North Dining Hall, Storrs CT 06269.

B. Owner: University of Connecticut

1. Owner's Representative: Scott Gallo, Project Manager, University Planning Design and Construction (860) 208-2337
- C. Architect: Maier Design Group, 34 Sequassen Street, Hartford CT (860) 293-0093
 1. Architect's Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:
 2. MEP Engineer – RZ Design Associates, 750 Old Main Street #202, Rocky Hill, CT (860) 436-4336
 3. Food Service Consultant – Colburn & Guyette, 100 Ledgewood Place #104, Rockland, MA (781) 826-5522
- D. Other Owner Consultants: The Owner has retained the following design professionals who have prepared designated portions of the Contract Documents:

1.4 WORK COVERED BY CONTRACT DOCUMENTS

The Work of Project is defined by the Contract Documents and consists of the following:

1. Removal of existing dish machine and dish accumulator within the McConaughy Dining Hall Dish Room. Installation of new dish machine and dish accumulator with relocate accumulator opening to dining hall beyond. Additionally the existing suspended ceiling and lighting within the dish room will be removed and replaced with a new suspended ceiling and LED lighting.
2. Removal of all debris caused by this Contract.
3. Protection of the public, building, grounds from damage during this contract is the responsibility of the Contractor for this project at all times.
4. Repair or replace landscaping including trees, shrubs or other planting disturbed during the Work of the contract with new to match existing, unless otherwise noted. Regrade and reseed any grass area damaged as a result of the Work. Repair any walkways or paved areas damaged as a result of the Work.

1.5 WORK UNDER SEPARATE CONTRACTS

General: Cooperate fully with contractors that may have been issued separate contract(s) to perform certain construction operations at the site prior to construction activity under this contract so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.6 DEFINITIONS UNDER THE CONTRACT DOCUMENTS

- A. Architect/Engineer: The term used to designate the Professional Consultant who contracts with the Owner or Design Builder to provide Architectural, Engineering, Interior Design, Commissioning services for the Project. The Architect is a separate consultant and not an agent of the Owner. The term includes any associates or sub-consultants employed or contracted by the Architect/Engineer to assist in providing the overall services. Such position shall be implied that they are the Architect/Engineer of record.
- B. Contract Documents: The Contract between Owner and Contractor signed by the Owner and the Contractor and any documents expressly incorporated therein for the Project. Such incorporated documents customarily include the Contract and General Conditions, any Supplemental General Conditions, any Special Conditions, the plans and the specifications, and all modifications, including addenda and subsequent Change Orders.
- C. Contractor: The person or entity with whom the Owner has directly entered into a contractual agreement to do the Work. Applies to Construction Manager, General Contractor or Prime Contractor.

Companies that are owned or operated by the same individual or entity, close relations, parent company or subsidiary, who operate under the same address and/or building, has either directly or indirectly any degree of ownership, management or control of another corporation, company or partnership; has directly or indirectly close relations or family members, share the same or adjacent space addresses or share resources to perform work as a joint venture formally or informally; is viewed as a signatory employer and not as separate trade supplier or installers who subcontracts and/or supply to each other. Such entities are viewed as a single pooled resource and therefore not separate unto each other.

- D. Day: Means a calendar day, 24-hour period. All response times and schedules shall be based on a calendar day, unless specifically noted otherwise.
- E. Daily Construction Report: A written daily log recording the day's construction site activities conditions and progress.
- F. Daily Additional Work Tickets: Recording the day's trade labor work performed for a change in the work issued by a CCD.
- G. Drawing: A page or sheet of the Plan which presents a graphic representation, usually drawn to scale, showing the technical information, design, location, and dimensions of various elements of the Work. The graphic representations include, but are not limited to, plan views, elevations, transverse and longitudinal sections, large and small scale sections and details, isometrics, diagrams, schedules, tables and/or pictures.
- H. Like New Condition: The appearance of looking new having no marks, chips, or cracks.
- I. Notice to Proceed: A written notice given by the Owner to the Contractor (with a copy to A/E) fixing the date on which the Contract time will commence for the Contractor to begin the prosecution of the Work in accordance with the requirements of the Contract Documents. The Notice to Proceed will customarily identify a Contract Completion Date.
- J. Owner: Office of University Planning, Design and Construction.

- K. **Project:** The term used instead of the specific or proper assigned title of the entire undertaking which includes, but is not limited to, the “Work” described by the Contract Documents.
- L. **Project Manager:** The Project Manager as used herein shall be the Owner’s designated representative on the Project. The Project Manager shall be the person through whom the Owner generally conveys decisions. The Owner may change the Project Manager from time to time or may appoint an interim Project Manager.
- M. **Site:** Shall mean the location at which the Work is performed or is to be performed. Also referred to as Work Zone, Site Logistics Plan, and Construction Area.
- N. **Specifications:** That part of the Contract Documents containing the written administrative requirements and the technical descriptions of materials, equipment, construction systems, standards, and workmanship which describe the proposed Work in sufficient detail and provide sufficient information for the Contractor to perform the Work.
- O. **Subcontractor:** A person or entity having a direct or indirect contract with the Contractor for the performance of the Work. Subcontractor includes any person or entity who provides on-site labor but does not include any person or entity who only furnishes or supplies materials for the Project.

A person or entity that provides and installs product received from a wholesaler or distributor and not directly from the manufacturer/fabricator/producer, are viewed as a Dealer. Dealer entities are recognized as Subcontractors and shall follow the same requirements under the contractor documents. Dealers shall disclose their net costs for materials and equipment from where they purchase their materials.

A person or entity that has either directly or indirectly any degree of ownership, management or control of another corporation, company or partnership; directly or indirectly with family members, share the same or adjacent space addresses or share resources to perform work as a joint venture formally or informally; is viewed as a signatory employer. Such circumstances shall be viewed as a single entity and not as sub-tiers or separate supplier and installer. Where the contract documents refer to the “Contractor”, the requirements under the contract shall also apply to the Subcontractor.

- P. **Submittals:** All shop, fabrication, setting and installation drawings, diagrams, illustrations, schedules, samples, and other data required by the Contract Documents which are specifically prepared by or for the Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by the Contractor to illustrate material or equipment conformance of some portion of the Work with the requirements of the Contract Documents.
- Q. **Substantial Completion:** The entire work shall not be limited to physical construction. The Work for Substantial Completion shall include aspects of general conditions and general requirements.
- R. **Supplier:** A manufacturer, fabricator, wholesaler or distributor, who provides material for the Project but does not provide on-site labor. A subcontractor or sub-tier subcontractor cannot be also a material supplier. See definition of Subcontractor which addresses Dealers.

- S. Traffic Control: A person who is appropriately trained and certified to provide traffic control flagging services. On any State roads running through any University campus, traffic control shall be performed by University Police.
- T. Time for Completion: The number of consecutive calendar days following the issuance of the Notice to Proceed which the Contractor has to substantially complete all Work required by the Contract. When the Notice to Proceed is issued, it states a Contract Completion Date, which has been set by the Owner based on the Time for Completion.
- U. Work: The services performed under this Contract including, but not limited to, furnishing labor, and furnishing and incorporating materials and equipment into the construction. The Work also includes the entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents.

1.7 TIME OF COMPLETION

The established Substantial Completion Date or number of consecutive calendar days (if specifically outlined) following the issuance of the Notice to Proceed which the Contractor has to substantially complete all Work required by the Contract. Work required by the project shall commence immediately upon receipt of a Notice to Proceed. However, physical work on site may not commence sooner than **May 15th, 2019**.

1. The Contractor shall obtain the Certificate of Substantial Completion as defined in the Contract Documents within **94** calendar days of the Notice to Proceed.
2. Substantial Completion as defined in the Contract Documents must be achieved and evidenced by a Certificate of Substantial Completion no later than **August 7th, 2019**.

Due to the nature of this institution, it is required that the academic schedule must be maintained. Contractor shall cooperate and coordinate with the Owner to assure that the academic schedule will be maintained.

1.8 DOCUMENTS REQUIRED BEFORE EXECUTION OF A CONTRACT

Contractor shall provide the following documents for the scope review meeting or if there is no scope review meeting provide the list of required documents within the time period outlined within the Letter of Intent to award:

- A. Project Specific Milestone Construction Schedule in sufficient detail as required under Section 3200 Construction Progress Documentation.
- B. Labor Rates for trade labor work self-performed by the Contractor shall be submitted utilizing the most current labor rate form template provided by the Owner. Labor Rates shall be reviewed and accepted by the Owner and are established for the life of the project. See Section on Contract Modifications for more on Labor Rate requirements. Labor Rate template can be found at the following weblink: <https://updc.uconn.edu/contractors-working-at-uconn/>

1.9 ACCESS TO THE SITE AND USE OF THE SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas indicated; allow for Owner occupancy and use by the public. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to areas within the Project limits indicated in the contract documents. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
 - a. Changes to the location of the identified perimeter contract limits, including access to the project site shall not be assumed by the Contractor. Contractor must submit a detailed narrative to the Architect and Owner on impacts to constructability as to why the contracted Project limits cannot be maintained.
 - b. Restore all lawn, sidewalk, paved areas damaged by vehicles and or construction activities to their original or better condition. See Section on Temporary Facilities and Controls for more details.
 - c. All grounds including construction site within contract limit shall be kept neat and orderly at all times.
 - 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, other contractors and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - 3. Burial of Waste Materials: Do not dispose of organic and hazardous material on site, either by burial or by burning.
 - 4. Construction Entrances:
Contractor shall prevent sediment from being transported onto paved areas and roads by construction vehicles exiting the project site. Contractor shall be responsible for immediate clean-up of soils or sediments tracked onto paved off site areas including but not limited to sweeping with motorized sweepers and power washing paved areas as required.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - 5. Condition of Existing Building:
Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
 - 6. Condition of existing perimeter Buildings and Landscape:

Protect surrounding buildings from noise, dust/dirt and pollution caused by the construction of the project. Take all precaution necessary to protect the surrounding space and maintain controls.

7. Contractor Parking:

All Contractors working for the University of Connecticut at the Storrs and regional campuses will follow the University Policy on Contractor Parking. A modest quantity of campus parking spaces shall be made available within the contract limits. Such policy can be located utilizing the following link; <http://policy.uconn.edu/2016/02/04/contractor-parking-policy>.

8. Access to the Campus and Site:

As it relates to the Storrs Campus, Contractor shall restrict use of construction related trucks on local, secondary roads, such as Hillyndale, Eastwood and Westwood Road, Hunting Lodge, Separatist and North Eagleville Road (from Hunting Lodge to SR 32) by using SR 195, SR 275 and North Hillside Road (from SR44 to North Eagleville Road on campus) as primary travel routes to the campus. Contractor shall not authorize the use of these secondary roads by construction related trucks in support of the project without explicit pre-authorization from the Owner on a per project basis.

Road Restrictions Map can be found at the following web link:
<https://updc.uconn.edu/contractors-working-at-uconn/>

Refer to Section 01-3300 Part 2.1.L Safety Plan for submittal requirements prior to site access

Refer to Section 01-5000 Temporary Facilities and Controls for additional requirements

Refer to Section 01-5719 Temporary Environmental Controls for additional requirements

1.10 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

- B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building, 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 or infer that the Contractor has met Substantial Completion.
1. A Certificate of Substantial Completion will be executed for each specific portion of the Work to be occupied prior to Owner occupancy.
 2. This project has been identified as a Threshold Building subject to the requirements of Connecticut General Statutes Section 29-276b. Obtain a Certificate of Occupancy from Building Officials prior to Owner occupancy.
 3. Certifications. The Contractor at completion of construction shall provide to the University a "Certificate of Substantial Compliance with the State Building and Fire Safety Codes" bearing original signatures of an officer of the company stating: "This is the 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 University of Connecticut. Minor deviations and special stipulations are noted below (if any)".
 4. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon recognition of mechanical and electrical systems being fully functioning and successfully inspected and tested for completeness, the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.

1.11 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations, the use of public streets and with other requirements of authorities having jurisdiction.
1. Work off Campus or on the edge of any campus where town residence property back up to or in close proximity to the Work, shall adhere to the Owner's noise limits.
 - a. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 4:30 p.m., Monday through Friday, unless otherwise indicated. Permission must be requested and approved in writing prior to performance of the work outside the normal working hours or on a State Holiday.
 - b. Early Morning Hours for Dormitory Work: No noisy activities where the noise exceeds 55 dBA can take place prior to 8:00 am when working on or in the vicinity of a student dormitory.

Refer to Section 5719 Temporary Environmental Controls for other acceptable noise levels during working hours.

2. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

- a. Obtain Owner Representative written permission before proceeding with utility interruptions.
3. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - a. Notify Owner Representative not less than two days in advance of proposed disruptive operations.
 - b. Obtain Owner's written permission before proceeding with disruptive operations
 - c. Noise which exceeds 55 db at the site perimeter will not be permitted between the hours of 8:00 PM and 8:00 AM.
 - d. No Work may be conducted during University exam periods, commencement/graduation day, student move in/convocation days (includes Fridays), move out days (including Fridays) and Open House Fall and Spring without the written permission from the Owner. Exam periods which may affect this project are scheduled per attached link: <http://www.registrar.uconn.edu/calendar.htm>
4. Deviations: Contractor shall not assume deviations to the noise restrictions.
 - a. Deviation is dependent upon availability of University supervisory personnel.
 - b. Certain aspects of the project, may require work to be performed off hours outside of the requirements the Contractor or Owner determines that work on this project must be performed during a time other than normal working hours of the University, costs for any premium time must be included in the Base Bid.
- 1.12 Prohibited Items: Refer to the latest version of the University's Contractor Environmental Health and Safety Manual for products and substances which are prohibited on University property.

1.13 WORK SEQUENCE

The responsibility of phasing the Work falls entirely on the Contractor.

1.14 MISCELLANEOUS PROVISIONS

1. Certifications
 - a. The Contractor, at completion of construction, shall provide to the University 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 University of Connecticut. Minor deviations and special stipulations are noted below (if any)"
 - b. The Contractor shall provide licensed and/or specific certification(s) of subcontractors who self-perform the work. Contractor shall provide a list of suppliers and all subcontractors and sub-tier subcontractors that have performed work on the project under the contract. Refer to submittal and close out provisions for additional requirements.
2. Owner Supplied Documents

The majority of the Owner's buildings were constructed prior to 1978 and are likely to have painted surfaces contacting lead based paint. Any information the Owner provides on known location of lead base paint or other hazardous materials. Any information the Owner provides on known locations of lead based paint or other hazardous materials is offered, in good faith for information only, solely for the purpose of placing the Contractor in receipt of all information known to the University at this time. Unless otherwise provided, this data is not to be considered a part of the contract documents. The University does not warrant or represent that the information contained in these reports is complete or accurate but only that it constitutes a disclosure of the information known to the Owner at this time regarding these conditions.

Original construction drawings are provided for information and reference only and do not represent exact conditions existing in the buildings. The Contractor is responsible for all work described in the scope of work regardless of information provided in the reference drawings. This information is offered in good faith for information only, solely for the purpose of placing the Contractor in receipt of all information known to the University at this time. Unless otherwise provided, this data is not to be considered a part of the contract documents. The University does not warrant or represent that the information contained in these reports is complete or accurate but only that it constitutes a disclosure of the information known to the Owner at this time regarding these conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01-1000

SECTION 01-2100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Value Allowance
An amount established in the Contract Documents for inclusion in the Contract Sum to cover the cost of prescribed items not specified in detail, and as shown in the Allowance Schedule. Quantity Allowances.
An amount which is attributable to a discrete quantity to be carried. Unit costs applicable to a quantity allowance, shall be used for values associated.
- C. Related Requirements:
 - 1. Division 01 Section "Unit Prices" for procedures for using unit prices.
 - 2. Divisions 02 through 33 Sections for items of Work covered by allowances.

1.3 SELECTION AND PURCHASE

- A. Within the initial submitted CPM schedule, reflect the dates when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work. Such dates shall represent what the supplier's lead time for delivery of product through its installation and commissioning (where applicable).
- B. At Architect's request, obtain proposals for each allowance for use in making final selections, include recommendations that are relevant to performing the Work.
- C. Purchase products and systems specified by the Architect.

1.4 SUBMITTALS

- A. Labor hours shall have pre-approved hourly rates. Failure of the Contractor to obtain pre-approved hourly rates prior to use of the allowance, shall not relieve the Contractor from reconciliation of the allowance upon final receipt of approved labor rates. Adjustments to the previous use shall be made accordingly.
- B. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- C. Submit invoices or delivery/weigh slips to show actual quantities of materials delivered to or removed from the site for use in fulfillment of each allowance.
- D. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- E. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 UNUSED MATERIALS

- A. Return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.
- B. Where it is not economically feasible to return unused material for credit and when requested by the Owner, prepare unused material for the Owner's storage, and deliver to the Owner's storage space as directed. Otherwise, disposal of excess material is the Contractor's responsibility.

1.6 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as may be required to coordinate installation.

1.7 ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit and similar costs related to products and materials under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.8 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Proposed Change Order based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
5. Remaining balance values in an allowance cannot be used to compensate overages in another allowance without prior written change management document approval from the Owner.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.9 ALLOWANCE CLOSE OUT

A. Any unused portion of the allowance, whether it is value allowance or quantity allowance, shall be credited to the Owner. Any unused portion of the allowance shall be reviewed by the owner to determine the amount of credit, based on actual invoices, delivery slips, etc.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES (Not Used)

END OF SECTION 01-2100

SECTION 01-2200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
 - 1. A unit price is an amount stated on the Proposal Form or in the Specifications as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the quantities of Work required by the Contract Documents are increased or decreased. Should the number of units anticipated substantially increase by more than ten (10) percent, such unit price shall be renegotiated.
 - 2. Upon request, provide a complete breakdown of how the unit price was calculated. Unit Prices include all necessary material, delivery, equipment and manpower, overhead and profit, and applicable taxes.
 - 3. Refer to individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- B. Related Requirements:
 - 1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
 - 2. Division 01 Section "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. For adjustment of the Contract Sum, track and provide supporting documentation (delivery or removal/disposal tickets) as deemed necessary to confirm Unit quantities provided or removed. Such quantities shall be tracked against any specific "Allowance" line item which may be included within the base contract value. Contractor must report status of Unit Price Allowances regularly and not exceed such allowance value without prior authorization from the Owner. Unit Price that does not have an allowance applied to it shall be treated with a CCD until all quantities have been determined. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor. Should it be determined that the work measured by the independent surveyor is five (5) or more percent less than the Contractor's reported measurement, Contractor shall be responsible for the cost associated with the independent survey and adjustment to the measurement.
- C. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES (Not Used)

END OF SECTION 01-2200

SECTION 01-2300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum and Contract Time.
 - 3.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.

- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.
- E. Alternates shall be valid for the life of the contract. Alternates not selected at the time of award, but not identified as rejected may be selected within the time frame identified by the Contractor through the construction schedule where the selection will not impact the critical path and overall substantial completion of the contract. Should the Owner wish to exercise executing an Alternate after the last date reflected within the CPM Construction schedule for selection of an Alternate, the Alternate(s) may be negotiated as applicable, in accordance with the requirements associated with a Proposed Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES (Not Used)

END OF SECTION 01-2300

SECTION 01-2500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Division 01 Section "Allowances" for products selected under an allowance.
 - 2. Division 01 Section "Alternates" for products selected under an alternate.
 - 3. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
 - 4. Divisions 02 through 33 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor that are not required in order to meet other Project requirements but may offer advantages to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use CSI Form 13.1A or similar.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable. Provide documentation that supports such submission
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

- c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project name and contact names, current phone numbers and addresses of architects and owners who were directly involved with accepting the product substitution.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Safety Data Sheet that demonstrates that the product does not contain any hazardous material as defined in Section 01-7839 Project Record Documents.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Savings to the Owner, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify the Owner of their recommendation to accept or reject the submission. Upon Owner decision, Architect will notify Contractor of acceptance or rejection of proposed substitution within seven (7) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Forms of Acceptance: Executed substitution form and/or a Change Order.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. If applicable, engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.
- B. Architect/Engineer shall review the request for substitution in accordance with the conditions and requirements stated within. Once a determination has been made by the Architect/Engineer, the Architect/Engineer will summarize the request and provide their findings and recommendations in writing to the Owner. The Owner will review and make the final determination of acceptance of the substitution. Such acceptance must be obtained in writing from the Owner. Provide the summary findings and Owner acceptance of the substitution with the change management document if applicable.
- C.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than Thirty (30) days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect and Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with any of these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Requested substitution is fully documented and properly submitted.
 - d. Requested substitution does not contain any hazardous material.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. Requested substitution is fully compatible with other portions of the Work.
 - h. Requested substitution has been coordinated with other portions of the Work.
 - i. Requested substitution provides specified warranty.
 - j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
 - k. Requested substitution does not require additional design changes to be performed by the architect/engineer in order to incorporate the substitution into the work.
 - l. Request for substitution shall not be based on failure to adequately plan the review of a product submittal, obtain approval of the product submittal, properly schedule, and receive delivery of the specified product in sufficient time to install within the construction contract time without impacting other tasks. The Contractor is responsible for any costs associated in expediting delivery or upcharges to changes

in product in order to maintain adherence to the construction schedule as defined in the contract documents.

- B. Substitutions for Convenience: Such request shall be submitted by the Contractor ten (10) days prior to contract execution. Should an approval of any substitutions for convenience be submitted for consideration after contract execution, it shall be at the sole discretion of the Owner. If the substitution is not accepted the Contractor remains obligated to supply the originally specified product at no additional cost to the Owner. If the substitution is accepted all coordination and liability is the sole responsibility of the Contractor. Contractor shall follow all requirements as outlined for Substitution for Cause.
- a. Requested substitution is a gross credit to the Owner.
 - b. Requested substitution does not require more than one submission.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01-2500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 1. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on **AIA Document G710, "Architect's Supplemental Instructions" (ASI)**. The Contractor shall proceed with minor changes in the work shown on ASI's.

1.4 AE PROPOSAL REQUESTS OR BULLETINS

- A. Initiated Proposal Requests: Architect or Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
- B. Proposal Requests (PR) or Bulletins issued by the Architect or Engineer are not instructions either to stop work in progress or to execute the proposed change. The Contractor shall only proceed with the change work when a CCD or CO is counter-executed by the Owner.

1.5 ADMINISTRATION OF CHANGES IN THE WORK

- A. Changes to the work shall be submitted in accordance with all contract document requirements.
 1. Section 4b-24 of the Connecticut General Statutes, the public auditors of the State of Connecticut and the auditors or accountants of the Owner shall have the right to audit and make copies of the books of the Contractor employed by the Owner.
 2. All changes in the Work shall be subject to the written approval of the Owner. A change in the Contract Sum or the Contract Time shall be accomplished only by formal written change order signed by both parties. 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 any amounts due or a change in any time period extension owed under the contract documents.

B. Labor Rates:

Utilize the Owner's Labor Rate Sheet template which can be obtained through the Owner's website (<http://updc.uconn.edu>). No other format shall be utilized. Previously agreed upon labor rates shall not be utilized in establishment of labor rates for this project.

1. Prior to the submission of the first application for payment or within 21 days from the contract start date whichever comes first, the Contractor will obtain from their subcontractor's labor rates for all their self-performed trade labor work for review in the format provided by the Owner. The labor rates shall be inclusive of benefits, applicable taxes and worker compensation insurance. When calculating labor rates, rates shall not include those general and administrative overhead costs and profit. Labor rates shall be valid for the life of the project; no rate adjustment shall be allowed for any increases that occur with prevailing wage or union agreements while under this contract.
2. All labor rates are subject to thorough analysis and possible adjustment prior to their acceptance by the Owner. Analysis review shall include but not be limited to:
 - a. Labor Rates submitted are only for the Contractor identified on the rate sheet for review and approval. Rates are for the identified Contractor's self-performed trade labor work.
 - b. Compliance with prevailing wage
 - c. State and Federal wage taxes
 - d. Contractors current worker's compensation premium statement that includes modification ratings
 - e. Consideration of current union wage package.
 - f. Payroll of employees (non-owner/family member) if deemed necessary to confirm base wage and fringe of proposed trade labor category. Reasonable wage rate shall be based on a rate equal to the customary or prevailing for the same work in the same trade or occupation in the town in which such project is being constructed. Customary rate shall mean a labor rate no more than the standard journeyman, apprentice or foreman rate as established by the trade union agreement for the work and the location of the project.
 - g. Labor rates cannot be interchangeable from Contractor to subcontractor or from subcontractor to subcontractor.
 - h. Approved labor rates shall not be transferable from project to project. Or contract to contract.
 - i. Labor rates shall not include those items as considered part of overhead and profit outlined within the General Conditions of the contract documents or union agreement costs outside of the defined wage package of base wage and fringe above the line.
 - j. Failure to submit and receive approval of each sub and sub-tier worker's classification labor rates prior to work performed and payment made is at the Contractors risk. Such value paid will not impact the review and acceptance process.

C. Labor Representation: (Contractor's or Subcontractor's own self performed forces)

1. No Proposed Change Order shall be negotiated if the request is solely for the increased labor rate over those originally carried by the Contractor in its original bid.

2. Additional Foreman hours shall not be included unless additional crews are added. Additional Superintendent hours shall not be included unless a compensable time extension is granted. Project Executive and Project Manager time shall not be included as a direct cost as it is part of the overhead mark-up allowed.
3. Labor efforts shall be on the direct time performing the work, regardless of any union conditions. If a worker performs work under one particular trade category and then switches to perform work under another trade category in one work day, such work shall be represented as the worker's direct time performing each of the trade categories for that work day.
4. Overtime, increased manpower, and additional shifts:
 - a. The Contractor shall take necessary steps to maintain project schedule.
 - b. If the Contractor is not behind Schedule and the Owner requests an acceleration of the work, the Owner will pay the Contractor the actual additional premium portion of the wages for overtime or additional shift work not included in the Contract price.
 - c. If the Contractor, through its sole or partial fault or neglect is behind Schedule, the Contractor shall at its own expense, increase its manpower or to work any overtime or additional shifts or take other action necessary to expedite the Work to meet the Project Schedule.

D. Equipment Rates: Prior to the first application for payment, the Contractor shall submit for review and approval by the Owner an hourly, weekly and monthly rate for each self-owned piece of equipment. Such rates shall not exceed the rate reflected in Equipment Watch. The list of equipment shall provide the following information:

1. Type of Equipment
2. Year
3. Make
4. Model
5. Size / Capacity
6. Registration #

E. Proposed Cost: The Owner may rely on supporting documentation provided by the Contractor and/or Subcontractor in agreeing to a cost for the change. If the Owner believes that additional information is necessary to substantiate the accuracy of the cost, the Owner reserves the right to request and receive additional information from the Contractor. The proposed cost must be based upon those identified in support of a Proposed Change Order.

1. Proposed cost estimated by the Contractor on behalf of the subcontractor shall be prohibited.
2. General Conditions / General Requirements shall be calculated on the actual cost impact to the critical path schedule. If the time extension does not extend beyond the month identified within the contract documents, only on-site field labor costs shall be allowed.

F. Construction Change Directive (CCD): Where the lack of timely authorization would impact the critical path schedule of the work or where the entitlement to additional cost is not clear or is not in total agreement by the parties, the Owner may issue a Construction Change Directive on a modified AIA Document G714 form. The Contractor shall immediately proceed with the change in the Work as indicated and directed in the CCD. Issuance of a CCD to the Contractor shall also be considered an issuance of the directive to the subcontractor(s) to proceed with the work.

1. Contents: The CCD will contain a complete description of the change in the Work. It will also designate the method to be followed to determine the adjustment in the Contract Sum and/or the Contract Time, if any. The Contractor may be requested to provide an order of magnitude (not to exceed) cost estimate for the change in the work. However, an executed CCD shall not be the sole backup to a Proposed Change Order (PCO) nor shall the execution of a CCD as a "Lump Sum" be considered binding as such when transposing into a change order.
2. Documentation: Contractor's order of magnitude estimate of the work on Contractor letterhead or email reflecting at a minimum the following:
 - a. Breakdown of how the cost estimate was established
 - b. Inclusive of all work effort associated with the change. Inclusive of applicable supervision and any estimated extension of time.
3. Execution: If issued as a Time and Materials and/or Not to Exceed, the documentation and monitoring of the work shall be reflected on daily "Additional Work Tickets" received from subcontractors and/or documented by the Contractor and consists at a minimum, the following:
 - a. Filling out of daily additional work tickets documenting the additional work performed from beginning to completion of the work.
 - b. The date of the day the work is performed.
 - c. Project Name
 - d. Contracting Firm's name.
 - e. Person's full name clearly printed who is monitoring and tracking the work being performed.
 - f. Name of the company performing the work and what work is being performed.
 - g. Number of workers, by trade labor category.
 - h. Number of hours worked by each worker.
 - i. Signature of the person monitoring the work certifying that the information contained on the Daily Additional Work Tickets is true and accurate. An additional signature by the Owner verifying the work performed on the ticket is preferred.
 - j. Owner reserves the right to not accept rely on or accept information represented on the daily additional work tickets if Owner did not verify the tickets.

G. Proposed Change Orders (PCO): Contractor shall utilize the most current Owner PCO and Labor Rate Sheet templates which can be obtained through the Owner's website (<http://updc.uconn.edu>). No other format shall be utilized.

1. Submit to the Architect and Owner a complete itemized PCO within seven (7) working days from the date reflected on the Proposal Request or when response to an RFI has been received. If the PCO and backup is incomplete the Architect will notify the Contractor within seven (7) days to revise and resubmit. Contractor is to identify revisions to the submitted PCO document by enumerating as the PCO number -R1, -R2, R3 etc. and date of the revision being submitted.

If a Proposal Request was not issued for the change, submit a PCO within seven (7) days from the date the initial discovery for change was formally documented.

2. Include within the PCO template a list of quantities of labor and/or products required or eliminated and/or pre-approved unit costs, with total amount of purchases and credits that

- encompass the changes identified and affected by the proposal request. If requested, furnish survey data to substantiate quantities.
3. Forms must be drafted and signed by the authorized agent of the Contractor or their subcontractor represented on the PCO. Contractor shall not formulate, calculate or submit proposed costs for a change on behalf of the sub-tier subcontractors and suppliers. All sub-tier contractors and suppliers shall submit their costs on supporting company letterhead in the format outlined within.
 4. Electronic signatures from the submitting Company and its Representative identified on the PCO form is preferred. Failure of the Contractor or Subcontractor to sign the form, shall not relieve the Contractor of their obligations to represent true net costs for the change. Information misrepresented knowingly or unknowingly to receive financial gain, shall be a breach of their obligations to perform nor allow for a claim under the contract.
 5. Failure of the Contractor to timely submit complete itemized PCO's, such failure shall not relieve the Contractor of their obligations to perform nor to allow for a claim under the contract.
 6. Markup shall be calculated with combined overhead and profit in a single percentage as identified as allowed within the General Conditions of the contract for both the Prime Contractor and Sub-tier Contractors.
 7. Changing the distribution of the percentage of allowed markups identified within the contract shall be prohibited.

H. The basis for each PCO shall be identified and a copy of the following shall be provided:

1. Entitlement
 - a. On the format required by the Owner, summarize and describe the need for the change and the basis of the entitlement for an increase and/or extension to the contract sum or contract time;
 - b. Identify all pertinent project information, sequential tracking, and original issue date and revision dates (if any);
 - c. Classification of the PCO as being predominately due to Unforeseen Field Conditions or the actions or requests of the Contractor, the Owner or AE Firm; and
 - d. List the proposed change value for each effected Prime Subcontractor and lower tier Subcontractor(s).
2. Supporting Documentation for Entitlement
Include a copy of the document that initiated the PCO, which may include one or more of the following:
 - a. A copy of an executed Proposal Request (PR) from the AE Firm or Owner with all attachments;
 - b. A copy of a Bulletin from the Architect or Engineer of Record;
 - c. A copy of a Sketch(s) issued by the AE Firm clearly outlining the change;
 - d. A copy of an inspection report or notes by an official having jurisdiction's that identifies a directive for a change;
 - e. A copy of any pertinent Field Directives, RFI's, e-mails or other correspondence regarding the change, if applicable; and
 - f. A copy of the executed CCD form, (where applicable).
 - g. Where a request for an extensions of time is included, a copy of the CPM project schedule reflecting the direct impact to the critical path and any other documents required by the Owner shall be provided.

3. Supporting Documentation for Costs
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Copies of all supporting quotes from the material suppliers and sub tier work (detailed below). The PCO supporting documentation should identify the companies submitting the information and the individuals who prepared the quotations.
 - c. Calculate the labor required to complete the work utilizing the contractually approved hourly rates of the submitting Contractor and their subcontractor's self-performed trade labor category as established in the contract. Where there are not preapproved labor rates for the Contractor or subcontractor's self-performed trade labor category of work, submit labor rates in the format required by the Owner for review and approval.
 1. Hourly labor rates shall not include Overhead and Profit (O&P), small tools, or any other general conditions costs as identified in the contract under Sec. 7.2.2.8 of the AIA 201 between the Owner and Contractor.
 - a) Note that the definition of "small tools" includes equipment utilized in the normal course of work including items such as shovels, picks, rakes, ladders, and power tools which are expected to be utilized on a project. Trade related equipment, hand tools, and power tools normally supplied with the labor or that are normally expected to be owned in the performance of the typical work for a trade are not compensable. These costs shall not be approved as part of the Direct Cost of a Change Order as they are included in the Contractor's overhead mark-up percentage.
 - b) Additional Supervisory or Foreman hours shall not be included in the cost calculation for the change unless additional crews are necessary and added and/or a compensable time extension is granted.
 - c) General, Area or Lead Foreman and Project Management support is considered as part of overhead and profit.
 - d) Labor Rates shall not be limited to trade labor categories as defined within the prevailing wage schedule applicable to the project. Include labor costs for offsite sheet metal fabrication, air balancing, engineering and programming services in support of the project,
 - e) Approved Labor Rates are for the life of the contract term and therefore not adjustable unless the contract completion date is extended beyond the month of June within the year the contract was to be completed. Adjustment to pre-approved labor rates shall only be considered for change order work issued after receipt of Final Completion.
 - f) Forms must be drafted and signed by the authorized agent of the Contractor or subcontractor who is self-performing the trade work represented on the labor rate sheet. Contractor shall not misrepresent proposed labor rates from the sub-tier contractors.
 - d. Provide a detailed and itemized break-down of all anticipated material and equipment costs, with the unit cost per item multiplied by the number of units. Additional documentation is required as follows:

1. Supporting quote from a material supplier reflecting the units and unit cost(s) for each item type;
 2. Supporting quote from the equipment supplier, with the hourly rental rate multiplied by the number of hours. One of the following shall be submitted in support of the equipment costs:
 - a) When equipment is rented from a third-party, supporting rental quote from the supplier reflecting daily/weekly/monthly equipment costs (whichever applies) for equipment.
 - b) When equipment is owned and used directly on the change work by the Contractor or subcontractor, the daily rate shall not exceed the rate calculated by taking the monthly rental rate as identified by a nationally recognized construction cost estimating guide or service and divided by 20 days. The weekly or monthly rate (respectively) shall not exceed the weekly/monthly rate calculated by a nationally recognized construction cost estimating guide or service. Year, make and model of the equipment must be provided and used as the basis for establishing the rental rate.
 - e. If the PCO is made on a "unit cost" basis as part of the established contract, provide a copy of approved unit costs reflected in the contract, or if the unit cost was not identified in the contract, provide a complete breakdown of how the unit cost was arrived at with supporting documentation as prescribed above.
 - f. If the work was previously performed based on issuance of a CCD on a Time & Material and/or Not to Exceed basis, provide:
 1. Daily Additional Work Tickets as outlined above.
 2. Actual material and rental supplier invoicing.
 3. Subcontractor billings with actual material and rental supplier invoicing.
 - g. To the extent that work is subcontracted to Lower Tier Subcontractors, anticipated labor, materials and equipment of sub-subcontractor costs shall be substantiated and consistent with the guidelines prescribed above.
 - h. Costs calculated and represented are not to be rounded up or down.
4. Supporting Documentation for Time Extension
- a. If the change is believed to impact the current critical path of construction, the Contractor must demonstrate the impact via the current critical path construction schedule of the project.
 - b. The current critical path schedule shall show all early and late starts, all early and late completions to disclose any residual float.
 - c. The change must clearly show the impact associated to the critical path of construction, where resequencing of activities does not provide work to be performed concurrently.
 - d. Failure to maintain the project's critical path construction schedule, shall not relieve the Contractor of demonstrating true impact of the change.
 - e. Also refer to the General Conditions of the contract document for further conditions associated with a request for time extension.
- I. Allowance Adjustment: See Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

- J. Unit-Price Adjustment: See Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work as recognized within the contract.

1.6 CHANGE ORDER PROCEDURES

- A. On Owner's acceptance of the information contained in a Proposed Change Order, Architect will issue a Change Order for signatures of Owner, Architect and Contractor on AIA Document G701.
1. Follow requirements for PCO's as outlined above.
 2. Each Change Order shall list and reflect the following:
 - a. Each PCO # included within the change order;
 - b. Each CCD# (when applicable to an identified PCO);
 - c. Brief description of the work included within the PCO;
 - d. Dollar value of the PCO
 - e. Total of all PCO's represented
 - f. Date of contractual Substantial Completion
 - g. Extensions of time being granted (if any) and the new date of Substantial Completion.
 3. Contractor's failure to submit PCO's or complete CO's within the time frame outlined in the contract documents and/or failure to comply with the adherence of all portions of the change management requirements and/or Contractor's payment to a Prime or Sub-tier Subcontractor prior to submitting and/or receiving formal approval of a Change Order shall not be grounds for acceptance or commitment of represented costs. Change costs shall be reviewed and accepted as outlined.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 01-3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Informational Submittals
 - 2. General coordination procedures.
 - 3. Coordination drawings.
 - 4. Requests for Information (RFIs).
 - 5. Project Meetings.
 - a. Pre-construction conference
 - b. Pre-installation conference
 - c. Progress meetings
 - d. Coordination meetings
 - e. Landscape Status Updates
 - 6. General Administration
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's CPM construction schedule.
 - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Owner, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Key Personnel: Provide at the pre-construction meeting a list of key personnel assignments, including project manager, superintendent, safety engineer and other personnel in attendance at

Project site. Identify individuals and their duties and responsibilities; list business addresses and telephone numbers, including office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Keep list current and available at all times.
 2. The Owner requires as a minimum, the following Key Personnel be assigned to this project. Each position shall be with an individual knowledgeable in the work that they will be providing under this contract and who is employed full-time under the Contractor, dedicated to the position listed.
 - a. Project Manager (on site a minimum of once a week for duration of the project through closeout)
 - b. Project Superintendent (on-site full time for duration of the project through closeout)
 - c. Safety Engineer shall be responsible for all work safety on the site throughout the duration of the work. The Contractor has sole responsibility for maintaining a safe and secure work site, how they achieve the security and safety of the workers and property is at their discretion. However, at a minimum the Owner expects the Safety Engineer to visit the site once a week and during high risk activities and at intervals as identified in the contract documents. Safety Engineer shall document his/her visits and reflect any issues or findings within such report. Reports shall be available within 24 hours of the inspection. Project Engineer (Project specific)
 3. Each individual listed above shall have not less than five (5) years' experience performing work of a similar nature to this project and in a comparable position to the position assigned on this project. Resumes will be required on all key personnel prior to acceptance by the Owner. Any Contractor personnel denoted as Key Personnel that were previously accepted by the Owner, shall not be removed from the project without Owner's prior approval.
 4. Each individual listed or identified at a later date shall have a background check performed as outlined in the University's Contractor Background Checks Policy that can be viewed at the following weblink: <http://updc.uconn.edu>.
- B. Contractor's Background Screenings: Provide at the pre-construction meeting the Contractor's Background Screening Control Plan on how the Background Screenings will be performed and how the workers will be tracked to ensure that Background screenings are to be performed and reviewed prior to allowing any worker to access the project site. See Section 01 3300 Submittal Procedures and Section 01 5000 Project Management and Coordination for additional requirements on Contractor background screening.
1. A summary report of background screenings on each individual performing any type of work on the project that will be coming to the project site for any length of time. This excludes delivery and teamster trucking only.
- C. Subcontract Information: Using the Owner's template format, prepare a schedule identifying individuals or firms contracted for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.

- D. See section on submittals for more required submittals for approval.

1.5 GENERAL COORDINATION PROCEDURES

- A. Permits: The Owner shall provide the initial building permit for the project. The local Public Safety shall have jurisdiction with non-threshold buildings, for inspection work. However, in cases where a building is a threshold building or is being demolished, the Contractor is responsible for coordinating, obtaining and paying for required permits.
- B. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. At a minimum, weekly inspections of project by the safety officer are required. Safety inspector reports shall be made available at the Owner's request within 24 hours.
 3. Inspections of the project by the official(s) having jurisdiction at intervals required by the respective general permit requirements. Regardless as to who applied for a permit, the Contractor is responsible to comply and perform all requirements associated with any permit issued against the Project.
 - a. <http://publicsafety.uconn.edu/fmbio/>
 - b. Operating permit
 - c. Health and Safety permit
 - d. Environmental permit(s)
 4. The Contractor is responsible to abide by the terms of all Environmental Permit requirements including but not limited to:
 - a. Flood Management Permit (when applicable)
 - b. Construction Stormwater General Permit (when applicable)
 - c. Inland Wetlands and Water Resource Permit (when applicable)
 - i. Turbidity testing and reporting
 - d. New Source Review permit (when applicable)
 - e. Waste Water Discharge permit (when applicable)
 - f. Environmental Title V Air permit (when applicable)
 5. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 6. Coordinate demolition of different components to ensure maximum performance and safety.
 - a. Upon immediate demolition, cap the ends of the pipes to contain the off gases coming from within the pipe to eliminate potential false gas leak reports and ensure safety to other areas not being impacted.
 7. Make adequate provisions to accommodate items scheduled for later installation.
- C. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities required by the Contractor include, but are not limited to, the following:
1. Submission of Contractor's CPM construction schedule
 2. Preparation of the schedule of values
 3. Approval of required submittals
 4. Purchase of equipment and material, long lead items
 5. Installation and removal of temporary facilities and controls
 6. Listing, delivery and processing of submittals.
 7. Documentation, circulation and acceptance of all Project meetings
 8. Documentation, circulation and acceptance of all Progress meetings
 9. Project closeout activities
 10. Startup and adjustment of systems
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: **PRIOR TO START OF WORK ACTIVITY:** Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data or Architects or Engineers electronic data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.

- e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
 7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 8. Fire-Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
 9. Coordination Drawings Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are

Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make changes as directed and resubmit.

- a. Contractor shall not rely on the availability of BIM for use in Contractor's coordination.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified and sent directly to the Architect.
 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
 3. Habitual submissions of RFI's not having any serious purpose and/or having no sound basis and/or is consistently incomplete and/or is already answered within the Contract documents, the Contractor shall reimburse the Owner for the Architect's additional time reviewing and answering such RFIs.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Project number.
 3. Date.
 4. Name of the Contractor.
 5. Name of the person requesting clarification.
 6. Name of Architect.
 7. Name of the person responding to the RFI
 8. RFI number, numbered sequentially.
 9. RFI subject.
 10. Specification Section number and title and related paragraphs, as appropriate.
 11. Drawing number and detail references, as appropriate.
 12. Field dimensions and conditions, as appropriate.
 13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 14. Contractor's signature.
 15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716 or similar and in a form acceptable to the Owner and Architect
 1. Attachments shall be electronic files in Adobe Pro PDF format.

- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven (7) days for Architect's response for each RFI. RFIs received by Architect after 3:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs is not intended to change the Contract Time or the Contract Sum.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Owner in writing within seven (7) days of receipt of the RFI response with a proposed order of magnitude cost.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly or as directed in a format **acceptable to the Architect and Owner**. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven (7) days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work.
 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.8 PROJECT MEETINGS

- A. Preconstruction Conference: The successful bidder shall attend a preconstruction conference and organizational meeting at the Owner's Office of Planning, Architectural and Engineering Services, with the Owner prior to any field work to review responsibilities and personnel assignments and to insure that Specifications, drawings and all conditions are understood to properly complete this Contract.

1. The meeting will be scheduled by the Owner's Representative.
2. Attendees: The Owner, authorities having jurisdiction, Environmental Health and Safety Representative, Parking Services Representative, Environmental Compliance representative, Commissioning Agent, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties may attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect progress, including but not limited to the following where applicable:
 - a. List of Submittals initially required, see 3300 submittal procedures.
 - i. Review each to ensure that they have been submitted for review and acceptance.
 - b. Items for discussion or review not limited to:
 - i. Contractor's CPM Construction schedule.
 - ii. Phasing.
 - iii. Logistics Plan review.
 - iv. Critical work sequencing and long-lead items.
 - v. Labor Market Regulations.
 - vi. Designation of key personnel and their duties.
 - vii. Lines of communications and emergency phone numbers.
 - viii. Background Check Plan review, where applicable.
 - ix. Procedures for processing field decisions and potential Change Orders.
 - x. Procedures for RFIs.
 - xi. Procedures for testing and inspecting.
 - xii. Procedures for processing Applications for Payment.
 - xiii. Distribution of the Contract Documents and correspondence.
 - xiv. Submittal procedures.
 - xv. Sustainable design requirements.
 - xvi. Preparation of record documents.
 - xvii. Use of the premises, including dust and noise control.
 - xviii. Parking and parking permits, see contractor parking policy <http://policy.uconn.edu/2016/02/04/contractor-parking-policy/>
 - xix. Work restrictions including working hours.
 - xx. Owner's occupancy requirements.
 - xxi. Responsibility for temporary facilities and controls.
 - xxii. Procedures for disruptions and shutdowns.
 - xxiii. Construction waste management and recycling.
 - xxiv. Office, work, and storage areas.
 - xxv. Equipment deliveries and priorities.
 - xxvi. Owner's Vendor Code of Conduct Policy: <http://policy.uconn.edu/2013/02/12/vendor-code-of-conduct/>
 - xxvii. Security.
 - xxviii. Progress cleaning.
 - xxix. Owner's Contractor Environmental Health and Safety Manual, Safety procedures, including the Owner's Hazard Communication Program and policies on pest control, asbestos, lead-based paints, lockout/tagout procedures, excavation and trenching, disposal of PCB containing light ballasts, use of solvents, solvent or epoxy based paints, confined space entries and use of open flames.

4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- B. Project Meeting: The Contractor shall schedule and conduct meetings and conferences at Project site unless otherwise indicated. Project Meetings shall at a minimum be performed bi-weekly.
1. Attendees: Coordinate with the Owner and Architect a set day and time for the project meetings. Identify in collaboration with the Owner and Architect any other key individuals whose presence is required. This meeting is not intended to be inclusive with any Pre-installation Conference or Progress Meeting requirements. List all required attendees.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees at least two working days prior to the scheduled meeting. Discuss items of significance that could affect progress, including but not limited to the following:
 - a. Review of the previous meeting minutes. Record corrections and any agreements/disagreements
 - b. Progress of the work.
 - c. Compare construction progress with the Project's approved CPM Construction Schedule.
 - i. Review progress since the last meeting.
 - ii. Identify activities on the critical path that are ahead of schedule, or behind schedule, in relation to the contractually accepted construction schedule.
 - iii. Provide recovery steps on how construction behind schedule will be brought back into schedule.
 - iv. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - d. Review Contractor's site safety reports.
 - e. Review any critical work sequencing and long-lead items.
 - f. Review sustainable design/LEED requirements.
 - g. Review of any management or supervisory responsibilities:
 - i. Contractor conduct
 - ii. Unacceptable behavior of any worker
 - iii. Background screening log.
 - iv. Staffing / Man Power.
 - v. Protection of construction personnel and adjacent sites.
 - vi. Dust and noise control.
 - vii. Progress cleaning.
 - viii. Temporary facilities and controls.
 - ix. Moisture and mold control.
 - x. Construction waste management and recycling.
 - xi. Security
 - xii. Hazard Communication Program
 - h. Review of Submittal log.
 - i. Review of RFI log.
 - j. Review of proposed change order (PCO) log.
 - k. Review of Change Order log.
 - l. Review any labor or wage issues.
 - m. Review any Payment issues.
 - n. Review the next two weeks look ahead schedule.
 - i. Identify any testing and inspections to be performed.
 - ii. Any work restrictions including working hours.

- iii. Scheduling of disruptions and shutdowns
 - iv. Equipment deliveries and priorities.
 - o. Review any other critical issues.
 3. Minutes: Entity responsible for conducting meeting will clearly identify themselves as the author of the minutes, record and distribute meeting minutes. The meeting will record significant discussions and agreements achieved. With each meeting held, minutes shall reflect the author, all invited attendees, any additional attendees who attended the meeting and those invited attendees that did not attend the meeting. Distribute the meeting minutes to everyone concerned for review, including but not limited to Owner and Architect, within three (3) days of the meeting.
 4. Minutes from the previous meeting shall be reviewed at the start of each subsequent meeting. Document any clarifications, corrections, or exceptions to the contents of the minutes and identify the attendee requesting the adjustments. Resolve any disagreements that may arise with the contents and document accordingly and document within the minutes. Minutes shall not require acceptance prior to the next scheduled meeting, unless the project has reached final completion and final payment is in process.
- C. Pre-installation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, and Owner of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including but not limited to requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals, shop drawings, product data, and quality control samples.
 - h. Sustainable design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Safety.
 - u. Regulations of authorities having jurisdiction.

- v. Testing and inspecting requirements.
 - w. Commissioning
 - x. Installation procedures.
 - y. Coordination with other work.
 - z. Required performance results.
 - aa. Protection of adjacent work.
 - bb. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Entity responsible for conducting meeting will record and distribute meeting minutes. Meeting minutes shall identify who the author is and date the meeting was held. Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings with Contractor's subcontractors at the Project Site at regularly (minimum bi-weekly) scheduled intervals. Contractor shall:
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or accept minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's CPM Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction activities behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - i. Review schedule for next period.
 - b. Review present and future needs of each entity present, including but not limited to the following:
 - i. Interface requirements.
 - ii. Sequence of operations.
 - iii. Status of submittals.
 - iv. Status of stainable design documentation, if required.
 - v. Deliveries.
 - vi. Off-site fabrication problems.
 - vii. Access.
 - viii. Site utilization.

- ix. Temporary facilities and controls.
 - x. Progress cleaning.
 - xi. Quality and work standards.
 - xii. Status of correction of deficient items.
 - xiii. Field observations.
 - xiv. Status of RFIs.
 - xv. Status of proposal requests.
 - xvi. Pending changes.
 - xvii. Status of Change Orders.
 - xviii. Pending claims and disputes.
 - xix. Documentation of information for payment requests.
 - xx. Safety and Subcontractor Conduct on the site.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information. Meeting minutes shall identify who the author is and the date the meeting was held. Contractor shall distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report. Submit report no later than 3 days after each progress meeting date.
- a. Schedule Updating: Revise Contractor's CPM Construction Schedule after each progress meeting where revisions to the schedule to recover have been discussed. Issue revised schedule concurrently with the report of each meeting.
- E. Coordination Meetings: Conduct Project coordination meetings at regular intervals convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: Every party currently involved in coordination or planning for the construction activities involved. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting. Meeting minutes shall identify who the author is and the date the meeting was held.
- F. Landscape Status Updates: Contractor shall require and receive regular written status updates from his landscape sub-contractor(s) on portions of the work the subcontractor is performing. Contractor shall distribute status updates to the Owner.
- 1.9 GENERAL ADMINISTRATION
- A. Call Before You Dig (CBYD): Contractor is responsible to monitor the conditions of the markings and maintain their appearance throughout the duration necessary to complete the work associated with the markings. At the time of Substantial Completion, the Contractor is responsible for the complete removal of all CBYD markings required for the project that is applied to any hard surface.

- B. GIS Surveying: Contractor is responsible for documenting field conditions and new installation using coordinates mapping, In cases of subsurface material installation, such mapping shall include depth to the top of the material, size and characteristics of the material and distance adjacencies to other subsurface identified material, active or inactive that is exposed. Contractor is responsible for ensuring that any flags or markings used in establishing the mapping are removed at the completion of the survey work for the day. Contractor shall immediately have removed any flags or markings that are no longer needed.
- C. Contractor shall comply to the requirements outlined within CGS Sec. 4e-70 relating to confidential information,
- D. Contractor and Subcontractor Information:
1. Before the first application for payment, provide a list of all known Contractors, Subcontractors and Suppliers who are intended to be working on or supplying material and equipment to the project for review and acceptance by the Owner.
 2. List shall include key information about the Contractor and subcontracts assigned under this Project in a format acceptable to the Owner. Please refer to the format template located at the following weblink. <http://updc.uconn.edu/>
 - a. Identify if the business is a nonresident business, are they verified or unverified by the State of Connecticut Department of Revenue Services pursuant to Conn. Gen. Stat. §12-430 and follow all requirements associated.
 - b. Such list shall be updated and resubmitted with each month's application for payment pencil draft.
- E. Application for Payment Procedures:
1. Contractor shall submit for review within 30 days of contract signing, a project specific schedule of values for payment. Schedule of values are to represent at a minimum the following (as applicable) and shall have a value associated with each element:
 - a. General Conditions:
 - i. Bond Costs (actual)
 - ii. Project and Administrative Management
 - iii. Supervisory and Daily Site Record keeping
 - iv. Safety Management
 - v. Site Trailer and associated general site operational expenses
 - vi. Temporary Fencing – Site Logistics
 - vii. Security Management
 - viii. Coordination Documents – assigned value shall be no less than 25 % of total general conditions value. Payment shall be made based on full complete coordination of systems within the documents.
 - ix. Closeout Documents – assigned value shall be no less than 30 % of total general conditions value.
 - b. List of CSI Division sections identified within the contract documents, broken down by:
 - i. Labor
 - ii. Material
 - iii. Equipment (large value pieces and/or systems
 - iv. If the project requires work to be performed in phases, breakdown by phase and then by General Conditions and by CSI Divisions.
 - v. If the project work entails multiple floors/stories, breakdown by floor and then by CSI Divisions.
 - c. List only those Change Orders that have been fully executed by all parties.

- i. Include with the CO listing within the Schedule of Values, any CCD that was issued in support of the Change Order. Example: CO 3 / CCD 2 Insulation of water line Gample.
 - d. Do not list alone PCO's or CCD's within the schedule of values.
 - e. Only those change orders that have been fully executed by all parties shall be listed and allowed to be a part of the month's billing. Should the Contractor list a change order prior to full execution and receipt back, regardless if the application has been certified by the Architect, the Owner shall not be responsible for any delays in payment and shall have the right to reject the application and ask for a resubmission with removal of any change orders as deemed warranted.
2. Attachments to the Application for Payment for processing:
 - a. Pencil Draft
 - i. Copy of email sent to designated UPDC email address submitting report and payroll in support of previous months' work.
 - ii. Copy of certified summary cover sheet Worker Distribution Report.
 - iii. Copy of transmittal to CHRO in support of submitting updates to the Contractor's affirmative action plan.
 - iv. Subcontractor list updated in the format required by the Owner.
 - b. First Application for payment
 - i. List of all Subcontractors and Suppliers who will be providing or performing work under the contract in the format outlined by the Owner. Format is available at:
<https://updc.uconn.edu/contractors-working-at-uconn/>
 - ii. Formal submission to the Owner for review and approval, Contractor and subcontractors (where applicable) list of company owned equipment in the format outlined in Section 2600 Contract Modifications.
 - iii. Formal submission to the Owner for review and approval, Contractor, subcontractor and sub-tiers Labor Rates.
 - iv. Equipment Rates: Contractor shall submit for review and approval by the Owner an hourly, weekly and monthly rate for each self-owned piece of equipment. Such rates shall not exceed the rate reflected in Equipment Watch. The list of equipment shall provide the following information:
 - a) Type of Equipment
 - b) Year
 - c) Make
 - d) Model
 - e) Size / Capacity
 - f) Registration #
- F. Certified Payroll: Pursuant to CGS Sec. 31-53, original certified payrolls with a statement of compliance shall be submitted.
 1. On a monthly basis, all certified payrolls for the project shall be received from their subcontractors by the Contractor. The Contractor is responsible to track, monitor and report for compliance with the Department of Labor and Owner requirements.
 - a. Documents are to be submitted in the format acceptable to the Connecticut Department of Labor.

- b. Verify all certified payrolls are being received from all subcontractors and sub-tier subcontractors performing work on the project for the period of time being reported.
 - c. Confirm payroll information has been included not limited to paycheck number.
 - d. Ensure each payroll reporting is filled out completely even if the worker is the “owner” of the company performing the work. Reporting as “Owner” performance with no payment information is not in conformance with CTDOL requirements.
 - e. Verify that the Subcontractor has a current compliant Connecticut Worker’s Compensation policy.
 - i. Obtain the subcontractor’s workers compensation policy premium sheet.
 - ii. Policies that state “Interstate” do not meet the statutory requirements.
 - f. Verify the appropriate Agent for the Subcontractor submitting the payroll has certified each reporting week.
 - g. Obtain and verify current OSHA 10 certifications for any all workers who performed on the project. Include a copy of each workers OSHA 10 certification, when first reporting them on certified payrolls.
 - h. Ensure all certified payrolls for the month have been received for work performed by the various subcontractors and sub-tiers, inclusive of all weeks within the month worked and not worked.
 - i. Ensure that the last required submission of certified payrolls are identified as the “Final” submission.
 - j. Utilize the Worker Geographic Report data template and record each weekly Certified Payroll submission from each subcontractor for work performed or not under the project for that particular week. Record alphabetically.
 - k. Refer to the following weblink for the most current acceptable format template: <https://updc.uconn.edu/contractors-working-at-uconn/>
2. Contractor shall submit all certified payrolls (including their own) and supporting documents to the Owner in the following manner:
- a. Submit electronically to: UPDCcertifiedpayroll@uconn.edu
 - b. Submit monthly at the same time as when the pencil draft of the application for payment is submitted for approval.
 - c. Provide in the Subject line of the email the following information in the order represented:
 - i. Project #
 - ii. Contractor Name
 - iii. Period Reporting On

Example: 901211 Turner April 2016 Certified Payrolls
 - d. Organize the documents in the following manner prior to uploading the document into the email:
 - i. Contractor’s Worker Geographic Distribution Report
 - ii. Contractor’s certified payrolls with each week of the month in sequential order;
 - iii. Subcontractors certified payrolls organized alphabetically by subcontractor and then within each subcontractor submission, by each sequential week of the month being reported;
 - iv. Ensure that each side of a payroll page (if double sided) has been scanned to include their certification for that payroll reporting;
 - v. In the body of the email, identify any non-compliance issues relating to the payrolls being reported on to the Owner.

3. Failure to consistently submit complete complying certified payrolls to the Owner in the format outlined, any costs incurred by the Owner to perform the requirements, shall be a reimbursement from the Contractor to the Owner.
4. Worker Geographic Distribution Report (Report): Following the close of each consecutive month's certified payrolls and in conjunction with the certified payroll submission, the Contractor who is directly contracted with the Owner shall submit a project specific Worker Geographic Distribution Report on all workers who performed work on the project for the period of time represented on the report.
 - a. For the purposes of this reporting, the following terms shall have the meaning as assigned.
 - i. "Covered Project" is a project that is subject to Section 31-53(a) of the Connecticut General Statutes.
 - ii. "Monthly" means a calendar month of each calendar year.
 - iii. "Residence" is the state in which a Worker resides, as reflected in the payroll records of such Worker's employer.
 - iv. "Subcontractor" is any subcontractor or sub-subcontractor of the Contractor, which subcontractor or sub-subcontractor employs Workers on the Project.
 - v. "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).
 - vi. "Worker" is an employee of the Contractor or a Subcontractor (as defined hereinabove), which employee is working on the Project and whose wages for such work is subject to Section 31-53(a) of the Connecticut General Statutes.
 - b. The monthly Worker Geographic Distribution Report shall summarize and include all Contractor and subcontractors' worker data information provided in a format required by the Owner.
 - i. The numbers of hours of Project work for which such Worker was paid during such month reporting.
 - ii. The Wages (as defined hereinafter) paid to such Worker during such month's reporting.
 - iii. The State of residence for such Workers being reported as of the close of such month's reporting.
 - iv. The reporting shall not contain any personally identifiable information about a worker.
 - v. Certified payrolls applicable shall accompany the monthly reporting.
 - vi. Owner format shall be used and not altered in any way without explicit approval from the Owner. Refer to the following weblink for the most current acceptable format template:
<https://updc.uconn.edu/contractors-working-at-uconn/>
 - vii. Failure to submit Worker Geographic Distribution Report in the format required, any costs the Owner incurs to perform the requirements outlined shall be reimbursed by the Contractor.
 - c. Such report shall be updated and resubmitted monthly with the submission of each month's application for payment as a condition of release of payment.
 - d. Such report uncertified by the Contractor does not relieve the Contractor of the accuracy or completeness of information that is or should be represented within the report.

- G. CHRO Reporting: Submit to the Commission on Human Rights and Opportunities (CHRO) on a monthly basis their Small Contractor/Minority Business Enterprise Utilization, Payment Status and Materials Consumption Reports (i.e., Form CHRO cc-257, cc-257a, cc-257b, cc-258a and cc-259). ORIGINAL reports shall be sent by the 25th day following the end of each calendar month to:
1. Commission on Human Rights and Opportunities (CHRO)
25 Sigourney Street, 7th Floor
Hartford, CT 06106

Provide a copy of the transmittal sent to CHRO to the following Owner contact:

veronica.cook@uconn.edu.

Do not send any CHRO reports with the certified payroll or to anyone else other than those identified, unless otherwise directed by the Owner. Upon request, the Contractor shall provide documentation to the Owner of compliance with small business and minority business enterprise contracting goals.

- H. Contractor's Background Screenings
1. Prior to, and as a condition of mobilization on site, the Contractor shall submit a Background Screening Control Plan process on each worker for each project regardless of past screenings and shall be consistent with the requirements of the University's Capital Project's Background Screening Guidelines. The University's Capital Project's Background Screening Guidelines can be found: <http://updc.uconn.edu>
 - a. Identify the background screening company who will be conducting the screenings for all workers under this project. And the process they will be using to perform the screenings.
 - b. Identify how the Contractor will control access to the Construction Site to restrict non-screened or non-approved workers from entering the work site and performing work.
 2. Provide a report monthly listing all workers who have been approved for work, disqualified for work and who are pending review. Compare list of workers from certified payroll against the list of background screenings performed. Report those subcontractors and the worker(s) who performed work on the project site but did not go through a background check.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01-3100

SECTION 01-3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's Project Milestone Construction schedule.
 - 2. Contractor's CPM schedule
 - 3. Construction CPM schedule updating reports.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Site condition reports.
 - 7. Special reports.
 - 8. GIS Mapping of existing and new conditions
- B. Related Requirements:
 - 1. Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.
 - 2. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 - 3. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Owner.
- C. Milestone: An action or event marking a significant stage or stages in the life of a construction project. Significant milestones may include but not limited to (where applicable):

1. Projected start date. Provide sufficient time for the Owner and Contractor to execute the contract.
 2. Pre-Construction Meeting
 3. Critical and non-critical Submittal submissions and approvals (provide sufficient time for reviews as outlined in the contract)
 - a. Pre-functional checklist of equipment submittals, as a part of commissioning
 4. Mobilization with temporary fencing system and project signage installation.
 5. Construction start date
 6. Site work start date
 7. Demolition start date
 8. Demolition completion date
 9. Site work completion date
 10. Utilities upgrades start date (each)
 11. Utilities shutdown / tie-ins (each)
 12. Utilities upgrades completion date (each)
 13. Structural Foundations start date
 14. Structural Foundations completion date
 15. Elevator Shaft start date
 16. Elevator Shaft completion date
 17. Building Core start date
 18. Building Core completion date
 19. Skeleton Framing completion date
 20. Façade installation start date
 21. Façade installation completion date
 22. Roof framing completion date
 23. Window installation start date
 24. Window installation completion date
 25. Water Tight Building date
 26. Mechanical infrastructure start date
 27. Plumbing infrastructure start date
 28. Electrical infrastructure start date
 29. Interior framing start date
 30. Interior wall enclosure start date
 31. Interior wall enclosure completion date
 32. Ceiling installation start date
 33. Ceiling installation completion date
 34. Finish installation start date
 35. Field completion of functional equipment / Submission of Statement of preparedness
 36. Substantial Completion
 37. Final Completion
- D. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- E. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- F. Event: The starting or ending point of an activity.

1. Float: The measure of leeway in starting and completing an activity. The excess time included in a construction schedule to accommodate such items as severe unusual inclement weather and associated delays, equipment failures, and other such unscheduled events. It is the contingency time associated with a path or chain of activities and represents the amount of time by which the early finish date of an activity may be delayed without impacting the critical path and delaying the overall completion of the Project. Any difference in time between the Contractors' approved early completion date and the Contract Completion Date shall be considered a part of the Project float. Float time belongs to the Owner. Free Float: The time (in days) by which an activity may be delayed or lengthened without adversely impacting upon the early start day of any activity following in the chain.
2. Total Float: The difference (in days) between the maximum time available within which to perform an activity and the duration of an activity. It represents the time by which an activity may be delayed or lengthened without impacting the Time for Completion or the Contract Completion Date.
3. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

- A. Contractor's CPM Construction Schedule shall be submitted within 14 days of contract execution and notice to proceed or at the time of the pre-construction meeting whichever comes first. Should Contractor fail to submit a project specific CPM construction schedule within time table outlined, costs associated for an independent third party scheduler hired by the Architect to establish and maintain for the duration of the project will be borne by the Contractor. Contractor shall provide input and adhere to the established CPM construction schedule.
- B. Format for Submittals: Submit required schedule submittals in the following format:
 1. Working electronic copy of construction schedule file, as indicated.
 2. Acceptable software:
 - a. Microsoft office for small uncomplicated projects as determined by the Owner.
 - b. Primavera 6 for large more complicated projects as determined by the Owner
 3. Format submission
 - a. In the format detail as required of the particular schedule requirements
 - b. Software as determined by the Owner.
 - c. PDF (ADOBE PRO) electronic file.
 - d. Three (3) paper copies.
- C. Contractor's Project Milestone Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 1. Milestone schedule shall be submitted upon receipt of Letter of Intent as a condition to award and shall be in a size required to display a readable schedule for entire construction period. Document page size shall not exceed 8.5x11 and is not limited to a single page.
 2. Submit an electronic copy of schedule, using software acceptable to the Owner, and labeled to comply with requirements for submittals.
 3. Contractually accepted Contractor's Project Milestone Construction schedule shall not be altered from what was initially accepted. Contractor's Project Milestone Construction schedule can only be adjusted by fully executed change order.

- D. Contractor's CPM Schedule: Subsequent schedule that details all activities associated with the work. The Contractor's CPM schedule represents the Contractor's plan for achieving the contractual completion of the project. Updates to and the submission of the Contractor's CPM schedule shall not represent acceptance by the Owner and/or Architect.
- E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.
 - 4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
 - 5. Resource Loading Report: List all activities initial resource loadings as compared to actual for the month.
- F. CPM Construction Schedule Updating Reports: Submit with each Applications for Payment.
- G. Daily Construction Reports: Submit at monthly application for payment intervals.
- H. Material Location Reports: Submit at monthly application for payment intervals.
- I. Geographic Distribution Reports: Submit at monthly application for payment intervals.
- J. Site Condition Reports: Submit at time of discovery of differing conditions.
- K. Special Reports: Submit at time of unusual event.

1.5 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate Owner's contractors and/or Contractor's subcontractors.
- B. Coordinate Contractor's construction schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to the date required for Substantial Completion.
1. Anticipated Notice to Proceed date: For purposes in establishing the start date of the project schedule, represent the start date as an additional seven (7) days beyond the time allotted within the letter of intent for required documents to be submitted by the Contractor to the Owner for contract execution. Should the time anticipated for the project start date be exceeded due to Contractor's failure to provide accurate timely documents and/or availability to fully execute the contract, Contractor shall not be entitled to an extension to the date outlined for Substantial Completion. Should the time anticipated for the project start date be exceeded due to Owner's failure to provide accurate timely documents and/or availability to fully execute the contract, the Contractor shall be entitled to an extension to the date outlined for Substantial Completion equal to the days taken by the Owner to issue a Notice to Proceed. Such extension shall not be compensable.
 2. Substantial Completion date shall not be changed for reasons not caused by the Owner. Should the time allotted within the letter of intent for contract required documents to be submitted by the Contractor, be exceeded due to Contractor's failure to provide such accurate timely documents within the time frame identified the Contractor shall not be entitled to an extension to the date outlined for Substantial Completion.
 3. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
1. Revise "Activity Duration" Subparagraph below to suit Project. Long activity durations provide less detail and, therefore, less information with which to manage a project. As an alternative to specifying activity duration, indicate minimum and maximum number of activities, which will result in a similar effect.
 2. Activity Duration: Define activities so no activity is longer than twenty (20) days, unless specifically allowed by the Owner.
 3. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than sixty (60) days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 4. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 5. Startup and Testing Time: Include no fewer than fifteen (15) days for startup and testing.
 6. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow a minimum of fifteen (15) days for Architect's administrative procedures necessary for Punch List and certification of Substantial Completion.
 7. Punch List and Final Completion: Include not more than thirty (30) days for completion of punch list items and final completion.

- C. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Utility interruptions, Substantial Completion, and Final Completion.
- D. Two Week Look ahead schedule: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 - 1. Unresolved issues.
 - 2. Unanswered Requests for Information.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
 - 5. Pending modifications affecting the Work and Contract Time.
- E. Recovery Schedule: When periodic update indicates the Work is behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
- F. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. CPM Schedule: Prepare Contractor's construction schedule of sufficient detail to indicate all significant construction activities. The level of detail should be such that no activity should exceed twenty (20) days. Where similar activities continue beyond the twenty (20) day limit, these activities should be broken into subgroups, specific areas, or phases so that the twenty (20) day maximum duration is maintained.
 - 1. Develop network diagram in sufficient time to submit CPM schedule for review no later than fourteen (14) days after date established of contract execution.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Owner's approval of the schedule.
 - 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 - 3. Subparagraph below coordinates between working days of time and calendar days. Under AIA Document A201, the Contract Time is in calendar days.
 - 4. Use "one calendar day" as the unit of time for individual activities. Indicate nonworking days, restricted days as outlined in Section 01-1000 Summary and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- B. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
 - 1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Date of Notice to Proceed

- b. Preparation and processing of submittals.
 - c. Mobilization and demobilization.
 - d. Purchase of materials.
 - e. Delivery.
 - f. Fabrication.
 - g. Utility interruptions.
 - h. Installation.
 - i. Special Equipment
 - j. Testing.
 - k. Commissioning
 - l. Telecommunications installations
 - m. Furniture installations (where applicable) and Owner installations
 - n. Punch list and final completion.
 - o. Activities occurring following final completion.
2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
 - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 1. Day of the week, date and the time of day the report is filled out.
 2. List of subcontractors at Project site.
 3. List of separate contractors at Project site.
 4. Approximate count of personnel by subcontractor and trade labor work being performed at Project site.
 5. Separately document any and all change order work being performed, the subcontractor/contractor performing and number of personnel. Obtain and confirm work performed, manpower trade category and hours worked against additional work tickets of the subcontractor or Contractor.
 6. Construction equipment at Project site.
 7. Material deliveries and confirmation receipts of quantities delivered.
 8. Materials and Equipment not yet incorporated into the work yet stored at the Project site.
 9. High and low temperatures and general weather conditions, including presence of rain or snow.
 10. Accidents.
 11. Meetings and significant decisions.
 12. Unusual events (see special reports).
 13. Stoppages, delays, shortages, and losses.
 14. Meter readings and similar recordings.
 15. Emergency procedures.

16. Orders and requests of authorities having jurisdiction.
 17. Daily additional work tickets
 18. Photographs taken
 19. Services connected and disconnected.
 20. Equipment or system tests and startups.
 21. Partial completions and occupancies.
 22. Substantial Completions authorized.
- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:
1. Material stored prior to previous report and remaining in storage.
 2. Material stored prior to previous report and since removed from storage and installed.
 3. Material stored following previous report and remaining in storage.
- C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- D. Daily Additional Work Tickets: Prepare daily additional work tickets recording the following information for a change in the work issued by a CCD. Tickets shall be documented separately for each trade labor category being performed that day and shall reflect at a minimum the following:
1. Date and day of the week
 2. Change work being performed and percentage progress
 3. Number of workers working on the change consistently and their respective work labor category.
 4. Number of hours worked working on the change consistently per trade labor category.
 5. Materials delivered and used specifically for the change work.
 6. Equipment delivered and/or used specifically and consistently for the change work. If equipment already exists on site and is used to perform the change work, number of hours the equipment is used shall be documented.

2.4 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one (1) day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
- 2.5 GIS Mapping: When the subsurface is open and there are existing and new utilities and any abandon piping/ductbanks conditions exposed, Contractor is responsible for subcontracting with

a surveyor proficient in GIS mapping to collect the metadata as outlined by the Owner of the utilities or abandon piping/ductbanks before back filling. Should Contractor fail to properly survey the conditions, at the Contractors cost, they shall open up the subsurface so that such conditions can be properly documented as outlined.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's CPM Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled project and progress meetings.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated two week look ahead schedule concurrently with the report of each such meeting. In the event the updated Schedule exceeds the Construction Completion date recognized in the contract, the Contractor must accompany the update with a recovery schedule.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of the updated schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules 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 performance of construction activities.

END OF SECTION 01-3200

SECTION 01-3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final completion construction photographs.
- B. Related Requirements:
 - 1. Division 01 Section "Submittal Procedures" for submitting photographic documentation.
 - 2. Division 01 Section "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
 - 3. Division 02 Section "Selective Demolition" for photographic documentation before selective demolition operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
 - 1. Digital Photographs: Submit image files within three days of taking photographs.
 - 2. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 3. Format: JPG2 with a minimum 3200 by 2400 pixels, uncompressed or layered in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped with key plan location number, in a folder named by date of photograph, accompanied by key plan file.
 - 4. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information of the photographer.
 - c. Name of Contractor.
 - d. Date photograph was taken.
 - e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - f. Unique sequential identifier keyed to accompanying key plan.

- B. Construction Photographs: Submit digital images in JPG2 format of photos taken within the month with the pencil draft of invoice being submitted for review.
- C. Aerial Photographs: If requested by the Owner, submit digital images in JPG2 format as outlined for digital cameras. If it is intended to use drones, Contractor must notify the Owner prior to use.

1.4 USAGE RIGHTS

- A. Provide or transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to the Owner.
- D. Web Cameras: Are required / are not required for this project. System shall provide for time lapse videography with web view access at a minimum.
- E. Preconstruction Photographs: Before commencement of demolition for renovation projects or starting new construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take not less than 20 photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take not less than 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
 - 5. Contractor has the option of video-taping as opposed to digital photos.

- F. Periodic Construction Photographs: Take no less than 20 photographs daily or at significant start and finish points of construction phases with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
 - 1. Significant Critical activities include but not limited to:
 - a. Commencement of the Work
 - b. Depth and connections of all utilities of subgrade construction.
 - c. Above-grade structural framing.
 - d. Exterior building enclosure.
 - e. Interior Work, through date of Substantial Completion.
- G. Owner-Directed Construction Photographs: From time to time, Owner may instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- H. Time-Lapse Sequence Construction Photographs: Take photographs as indicated, to show status of construction and progress since last photographs were taken.
 - 1. Frequency: Take photographs hourly or as required by industry standards, coinciding with the cutoff date associated with each Application for Payment.
- I. Vantage Points: As identified in the Key Plan and accepted by the Owner, follow select vantage points. During each of the following construction phases, Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as project record documents. Key plan will inform photographer of desired vantage points or as directed by the Owner.
 - 1. Do not include date stamp.
- J. Additional Photographs: Owner may request photographs in addition to periodic photographs specified.
 - 1. Three days' notice will be given, where feasible.
 - 2. In emergency situations, take additional photographs within 24 hours of request.
 - 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
 - d. Substantial Completion of a major phase or component of the Work.
 - e. Extra record photographs at time of final acceptance.
 - f. Owner's request for special publicity photographs.

END OF SECTION 01-3233

SECTION 01-3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals, including;

1. Contractor's construction schedule
2. Submittal schedule
3. Shop Drawings
4. Coordination Drawings and Layout
5. Daily Construction Reports
6. Product Data
7. Samples
8. Site Mobilization Plan
9. Safety Plan
10. Background Screenings

- B. Related Requirements:

1. AIA Document A101 Contract Article 5 "Payments" for submitting Applications for Payment and the schedule of values.
2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with

requirements contract. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

- C. Portable Document Format (PDF-Adobe Pro): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 30-60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's CPM construction schedule which is due within twenty (20) days from contract execution.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Project Name and Project Number
 - b. Scheduled date for first submittal.
 - c. Specification Section number and title.
 - d. Submittal category: Action; informational.
 - e. Name of subcontractor.
 - f. Scheduled date for Architect's final release or approval.
- B. Submittals Initially Required: Contractor shall initially submit for review prior to or at the pre-construction meeting the following submittals not limited to:
 - 1. Emergency / Point of Contact Information: Point of contact shall be persons whom are directly employed by the Contractor who are designated to be available 24/7 for the duration of the project. Such person(s) shall be accessible and responsive as required within the University's Contractors Environmental Health and Safety Manual. Such responsiveness shall also include but not be limited to remedies to the perimeter construction fence and security breaches to the project site.
 - 2. Contractor's Health and Safety Plan specific to the project: Prior to, and as a condition of mobilization on site, the Contractor shall submit a Safety Plan consisting of no less than the following information:
 - a. Safety Data Sheets for all potentially harmful substances.

- b. A list of Contractor, Subcontractor, and Owner personnel to be notified in the event of an emergency.
 - c. A list of Contractor's personnel to be notified by the Owner in the event of an emergency during "off" hours.
 - d. Evacuation Plans.
 - e. Emergency medical procedures.
 - f. Locations of emergency medical equipment.
 - g. Completed Contractor Receipt Acknowledgement Form from the last page of the University of Connecticut, Contractor EHS Manual
http://www.ehs.uconn.edu/ppp/Contractor_EHS_Manual.pdf
 - h. Executed Confined Space as required by the Owner's EHS manual. Utilize provided forms.
3. Contractor's Quality control plan specific to the project.
 - a. Outline responsibilities within the Contractor's project team.
 - b. Responsibility with review of submittals being received from their subcontractors before passing them along to the Architect. What are the mechanisms within your process of review of your various trade submittals to ensure proper coordination has been performed prior to forwarding the submittals to the Architect?
 4. Copy of the transmittal letter of the project specific Affirmative Action Plan submission to CHRO and Owner. Transmittal must reflect the project name and number and date transmitted.
 5. Detailed CPM Construction Schedule specific to the project detailed in a format required within the contract documents.
 - a. Breakdown complete Submittal Schedule.
 6. List of all Subcontractors and Suppliers in a format required by the Owner. Utilize Owner's template that can be found at the following web link under "working with us / Contractor and Consultants": <http://updc.uconn.edu>.
 7. Background Screening Control Plan (where applicable)
 8. Labor Rate Submissions for all sub and sub-tier subcontractor's self-performed trade labor work and each classification. Follow the requirements outlined within other sections of Division One.
 9. Specific Trade Certification Submittals, not limited to:
 - a. Telecommunication technician certifications (where applicable)
 - b. Millwork certification (where applicable)
 - c. Millwork installer certification (if different from the millwork fabricator)
 - d. Contract Arborist (where applicable)
 - e. ACI certification for flatwork concrete installations
 - f. AWI certification for fabrication and installation of millwork product
 10. Erosion Control Plan
 11. Any proposed Changes to the Site Logistics Plan and a justification for why it is being proposed.
 - 12.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow time for any submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt, Commissioning Agent's receipt and Official having jurisdiction receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow fourteen (14) days from receipt for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow fourteen (14) days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow twenty-one (21) days for initial review of each submittal.
 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow fourteen (14) days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- C. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Name of subcontractor.
 - f. Name of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01).

Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

- i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
 4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Owner.
 5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.
 - a. Transmittal Form for Paper Submittals: Use AIA Document G810 or similar format.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating paper submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.R1).
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Contractor.
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Specification Section number and title.
 - h. Related physical samples submitted directly.
 - i. Indication of full or partial submittal.

- j. Transmittal number.
 - k. Submittal and transmittal distribution record.
 - l. Remarks.
- E. Options: Identify options requiring selection by Architect.
- F. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections. Transmit each submittal from Contractor to Owner using a transmittal form.
1. Submit electronic submittals as PDF-Adobe Pro electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 2. Action Submittals: Submit five (5) paper copies of each submittal unless otherwise indicated. Architect will coordinate reviews and incorporate comments received from officials having jurisdiction and return four (4) copies, one to Owner, two to Contractor and one to the official having jurisdiction.
 3. Informational Submittals: Submit five (5) paper copies of each submittal unless otherwise indicated. Architect will not return copies.
 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be

signed by an officer or other individual authorized to sign documents on behalf of that entity.

- a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
- b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Notation of coordination requirements.
4. For equipment, include the following in addition to the above, as applicable:
 - a. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:
 - a. Four (4) paper copies of Product Data unless otherwise indicated. Owner will retain one (1) copy and Architect will retain one (1) copy; remainder will be returned.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
3. Submit Shop Drawings in the following format:

If five (5) opaque copies of each submittal. Owner will retain one (1) copy, official having

jurisdiction will retain one (1) copy and Architect will retain two (2) copies; remainder will be returned.

- D. Samples: Submit physical Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal in addition to physical Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; mock-ups, swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three (3) sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.

- 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.
- E. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- G. Application for Payment and Schedule of Values: Comply with requirements specified in Division 00 Section "Payment Procedures."
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
- J. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- K. Site Mobilization / Logistics Plan
1. Prior to the start of operations on the site, the Contractor shall submit to the Owner, a Site Mobilization Logistics Plan which shall indicate pertinent dates and times, logistics, construction fence, laydown area, traffic flow and compliance with the General Requirements to a level of detail commensurate with the complexity of the construction and the sensitivity of the Owner's ongoing activities on site.
- L. Safety Plan
1. Prior to, and as a condition of mobilization on site, the Contractor shall submit a Safety Plan consisting of no less that the following information:
 - a. Material Safety Data Sheets for all potentially harmful substances.
 - b. A list of Contractor, Subcontractor, and Owner personnel to be notified in the event of an emergency.
 - c. A list of Contractor's personnel to be notified by the Owner in the event of an emergency during "off" hours.
 - d. Evacuation Plans.
 - e. Emergency medical procedures.
 - f. Locations of emergency medical equipment.
 - g. Completed Contactor Receipt Acknowledgement Form from the last page of the University of Connecticut, Contractor EHS Manual (http://www.ehs.uconn.edu/ppp/Contractor_EHS_Manual.pdf)
- M. Contractor's Background Screenings

1. Prior to, and as a condition of mobilization on site, the Contractor shall submit a Background Screening Control Plan process on each worker for each project regardless of past screenings and shall be consistent with the requirements of the University's Capital Project's Background Screening Guidelines. The University's Capital Project's Background Screening Guidelines can be found: <http://paes.uconn.edu/Contractors.html>
 - a. Identify the background screening company who will be conducting the screenings for all workers under this project. And the process they will be using to perform the screenings.
 - b. Identify how the Contractor will control access to the Construction Site to restrict non-screened or non-approved workers from entering the work site and performing work.
2. Provide a report monthly listing all workers who have been approved for work, disqualified for work and who are pending review.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three (3) paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, design loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."

Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review. Any re-review of any one submittal beyond two reviews by the Architect or Engineer (not a direct cause by the Architect or Engineer), costs associated for their continued review(s) shall be at the Contractor's expense.

- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return the submittal to contractor, Owner will receive final approved submittal from the Architect. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 01-3300

SECTION 01-4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Requirements:
 - 1. Division 01 Section "Allowances" for testing and inspecting allowances.
 - 2. Divisions 01 section Close out
 - 3. Divisions 02 through 33 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits.

To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.
 - 3. Any other delegated design work required within the contract documents.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit project specific quality-control plan within ten (10) days of Notice to Proceed, and not less than five (5) days prior to preconstruction conference. Submit in format acceptable to Owner. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent.

- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
 - 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and re-inspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Certification that conditions, products, and installation will satisfy all aspects of the warranty.
7. Other required items indicated in individual Specification Sections.

C. **Factory-Authorized Service Representative's Reports:** Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Certification that conditions, products, and installation will satisfy all aspects of the warranty
5. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

- A. **General:** Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Installer Qualifications:** A firm or individual experienced and certified in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. **Specialists:** Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- H. **Manufacturer's Technical Representative** Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven (7) days in advance of dates and times when mockups will be constructed.
 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven (7) days for initial review and each re-review of each mockup.
 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 7. Demolish and remove mockups when directed unless otherwise indicated.
- K. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

1.9 QUALITY CONTROL

- A. Owner Responsibilities: The Owner will provide independent inspections, tests, and similar quality control services specified to be performed by independent agencies and not by the contractor, except where they are specifically indicated as the contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.

1. The Owner will employ and pay for services of an independent agency and furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents, cancellation of a scheduled test short of the required time the testing agency has mandated or in instances where the work is not prepared for testing within a reasonable amount of time from arrival of the testing agent, will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify the Owner and testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Owner, Architect, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owners Representative, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in Statement of Special Inspections attached to this Section.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Owner and Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01-4000

SECTION 01-5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary services and facilities, including:

1. Utilities
2. Temporary construction
3. Construction aids
4. Barriers and enclosures
5. Security
6. Access roads
7. Temporary controls
8. Traffic control
9. Project identification signs and banners
10. Site Logistics
11. Field offices and sheds
12. Temporary use of Roads and Campus grounds
13. Maintenance of temporary services and facilities

- B. Related Requirements:

1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.
2. Divisions 01 Section "Temporary Tree and Plant Protection" for protection and pruning of existing trees and plants that are affected by execution of the Work.
3. Division 31 Section "Dewatering" for disposal of ground water at Project site.
4. Division 32 Section "Asphalt Paving" for construction and maintenance of asphalt pavement for temporary roads and paved areas.
5. Division 32 Section "Concrete Paving" for construction and maintenance of cement concrete pavement for temporary roads and paved areas.

- C. Temporary utilities may include but are not limited to:

1. Temporary electric power and light.
2. Temporary heating, cooling and ventilating.
3. Telephone service.
4. Water services and distribution.
5. Temporary sanitary facilities, including drinking water.

6. Temporary sewers and drainage
 7. Temporary fire protection.
- D. Security may include but is not limited to:
1. On-Site -24hour security
 2. Security enclosures, fences and lockups
 3. Gate attendants and gate house
- E. Temporary use of access roads and parking include but are not limited to:
1. Temporary roads and paving
 2. Temporary use of grounds for parking, access and laydown space
 3. Use of public and private roads to the project site.
- F. Temporary controls may include but are not limited to:
1. Dewatering facilities and drains
 2. Waste disposal
 3. Rodent and pest control
 4. Environmental protection
 5. Nuisance dust control
 6. Noise control.
 7. Site area fencing
 8. Safety controls
 9. Covered walkways at entrances and other locations
 10. Protection of grounds including protection of existing hard and soft scape surfaces.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and Owner's contractor and authorities having jurisdiction.
1. Contractor shall furnish and install all necessary temporary switches, wiring, fixtures, bulbs, piping and other devices as may be required to connect to existing systems.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use for the temporary facility without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. The Owner reserves the right to require the Contractor to install meters and, if obvious excessive use is observed, to pay for these utilities. Should water restrictions be issues, the use of surface water on Owner's properties or water system of any kind shall be prohibited. Periodic water restrictions have been experienced within the months of July, August and September. And during periods of water restrictions, contractor shall be responsible for providing water to support the project at no cost to the Owner.

1. When water restrictions are in place, Contractor shall provide clean filtered water to the project at no additional cost.
 2. The use of water course water is prohibited.
 3. The use of water from any fire hydrant without prior permission from the authority having jurisdiction is strictly prohibited.
 4. Contractors who violate these provisions shall be billed at a cost to the contractor at a rate triple the cost if the water had been purchased and supplied by a reputable source. In addition, if it is found that water was supplied from a watercourse, the Contractor shall be responsible for all testing costs associated on the materials the water was used for and the water itself, for any contaminates or organic matter not suitable for the applied use. Contractor shall be responsible for cost of removal of the impacted materials and their replacement.
- C. Electric Power Service from Existing System: A moderate quantity of electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. The Owner reserves the right to require the Contractor to install meters and, if obvious and excessive use is observed, to pay for these utilities.
- D. Telecommunications from Existing Systems: A moderate quantity of telecommunications and data connections from Owner's existing system is available for use for a monthly charge. Owner reserves the right to shut down or terminate connections at their discretion.
1. The installation and cost of all data and telecommunications infrastructure required to connect to Owner's identified demarcation for temporary services shall be the responsibility of the Contractor.
 2. The use of CAT6 cable is required and shall have lightning protection installed on both the connection and termination ends.
 3. Contractor is responsible to supply their own router and operate the device in a routed mode using RFC1918 private addresses as needed for Contractor's LAN segment.
 4. Remove all conduit and cabling infrastructure previously installed in support of the temporary service when it is no longer required.
 5. There is a cost for Network connections \$65/month per each connection. Cost for Voice connection, one-time installation charge \$75. And a \$35.50/month (plus toll) charge per line. Cost of Voice Mail is an additional \$7/month per mailbox.
 6. Contractor is responsible for contacting and discontinuing service.
 7. To arrange for services, contact UConn Help Center: 860-486-4357
- E. Contractor Parking: A moderate quantity of campus parking spaces shall be made available within the contract limits. And remaining contractor parking shall be at a remote location to be identified for each campus. Refer to the Contractor Parking requirements located utilizing the following web link: <http://updc.uconn.edu>
- F. Traffic Control: Contractor is responsible for all traffic control requirements and costs. Any state or local road work must have a traffic control police officer present. Any off road work must have a certified flagman. See further details on Safety and Traffic Controls within this section.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Mobilization Logistics Plan:

1. Prior to and as a condition of mobilization on site, the Contractor shall submit to the Owner, a Site Mobilization Logistics Plan which shall indicate pertinent dates and times, logistics, construction fence, laydown area, traffic flow and compliance with the General Requirements to a level of detail commensurate with the complexity of the construction and the sensitivity of the Owner's ongoing activities on site.
2. Contractor's Site Mobilization Logistics Plan shall be within the limits reflected on the contract documents and in a form consistent with the contract documents, specifically the Site Logistics Guidance Plan established by the Owner and Architect. The Contractor Site Logistics Plan, shall be sized the same as the plan sheets in the contract documents and address the following, including but not limited to:
 - a. Site Access from SRs 195, 32, 44 and North Hill Side Road for any deliveries and Contractor and site vehicles for all Storr's campus projects are to be utilized.
 - b. Phases of work, each phase and all work should be documented
 - c. Pedestrian Circulation/Detours, ADA Access
 - d. Site lines within the construction fence and outside the construction fence.
 - e. Safety within the construction fence and outside the construction fence.
 - f. Emergency vehicle circulation, 18' minimum width
 - g. Vehicular Circulation/Detours
 - h. Tracking pads
 - i. Construction Circulation
 - j. Site perimeter fencing system location
 - k. Signs including vehicular and pedestrian detours, project sign and project banners, including their anticipated respective locations.
 - l. Staging Area / Stockpile Area
 - m. Trailer with allowable parking spaces
 - n. Portable Restrooms
 - o. Temporary Utilities hookups
 - p. Transit Disruptions not limited to road shut downs or Bus/Emergency vehicle access
3. Provide the following for discussion regarding the Site Logistics Plan:
 - a. Submittal of the perimeter area Construction Site fencing system: Type (driven/temporary), fence height, fence construction and installation details taking into account the necessary durability during the seasons, and (i.e. snow plowing).
 - b. Submittal of the scrim that connects to the fence system.
 - c. Regular maintenance controls of the temporary facilities, fencing and grounds within the fenced in area and accesses to the Construction Site area.
 - d. Construction Equipment and Vehicle parking requirements anticipated.
 - e. Proposed safety and security measures for the Construction Site.
 - f. Heavy equipment special needs
 - g. Identify where existing parking spaces are impacted by the project limits reflected on the contract documents Site Logistics Plan. Should the project limits change from what is included on the contract documents through no fault by the Owner, and the area needs impact additional parking spaces from what was previously anticipated or additional temporary fencing is required than what was anticipated on the Site Logistics Plan, the Contractor shall bear all costs associated without additional compensation.

- B. Erosion and Sedimentation Control Plan: Show compliance with requirements of DEEP General Permit for the discharge of stormwater and dewatering wastewaters from construction activities or authorities having jurisdiction, whichever is more stringent.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
- E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust and HVAC control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
 - 1. Locations of dust-control partitions at each phase of work.
 - 2. HVAC system isolation schematic drawing.
 - 3. Location of proposed air-filtration system discharge Waste handling procedures.
 - 4. Other dust-control measures.

1.5 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations and authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements
 - 2. Occupational Health and Safety regulations
 - 3. Utilities regulations and requirements
 - 4. Police, Fire Department and Rescue Squad requirements.
 - 5. Environmental protection regulations.
- B. Standards: Comply with NFPA Code 241, “Standard for Safeguarding Construction, Alteration, and Demolition Operations”, ANSI-A10 Series standards for “Safety Requirements for Construction and Demolition”, and NECA Electrical Design Library “Temporary Electrical Facilities.”
- C. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with National Electric Code (NFPA 70) and local provider requirements and officials having jurisdiction. Permit is required.
- D. Tests and Inspections: Arrange for authorities having jurisdiction and service providers to observe installation, testing and inspection for each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates of implementation and termination of each temporary utility. At the earliest feasible time and when acceptable to the Owner, change over from use of temporary services to use of the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire preventative measures. Do not overload facilities, or permit them to interfere with progress of work. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.
- C. Construction Site Area: Keep area within and around the perimeter construction fence clean and neat in appearance.
 - 1. Fence system installation and appearance shall be regularly maintained including but not limited to grommets and ties associated with connecting and maintaining toughness of the scrim, fence fabric and/or rails, cleaning scrim, weed whacked,
 - 2. Roads and pathways are to be regularly swept clean of dirt and construction debris. Debris must be properly disposed of in a manner acceptable to the Owner.
 - 3. Completely remove from campus snow and ice on roads and pathways leading from and to the construction site. Stock piling of snow and ice or pushing snow outside the construction fence is not permitted.
 - 4. As growing seasons demand, lawn areas to be kept mowed, planting beds to be kept free of weeds and any tree or scrub trimming is to be performed by plant maintenance personnel.

Maintaining outside the perimeter fence, mowing and plowing shall be maintained up to the transition area between the fence and area limit line where the Owner has mowed or plowed to.

Always operate and conduct construction activity in a safe and efficient manner. Maintain emergency access and circulation to the facility(s) at all times.

- D. Construction Fencing System: The temporary fencing system consists of the fence fabric, rails, poles, and scrim.
 - 1. The system shall be installed immediately as the first step for on-site mobilization. As each section of the fence installation is complete, immediate installation of the scrim shall follow. Fencing system installation shall not commence until all products that make up the system have been delivered to the site and confirmed as meeting the specification requirements. Fencing system shall not be left incomplete over a weekend or holiday. Leave fence system complete with associated scrim and/or banners for the portion of fencing system that has been installed. The Contractor shall not proceed with any other mobilization work until the entire perimeter construction fencing system is complete and in place including the project sign.
 - 2. Fence system shall not be moved or removed without prior authorization from the Owner.
 - 3. In cases where there are safety or environmental conditions, Owner shall direct the Contractor to relocate portions of the fence system at no additional cost to the Owner.
 - 4. Prior to fence system removal, the following conditions are required to be complete:
 - a. All excess material and equipment shall be removed from the grounds.
 - b. All vehicle parking immediately within the immediate grounds ceases.
 - c. All hardscape work has been completed (where feasible).
 - d. Complete washing of Owner supplied printed graphical scrim and/or banners.

5. Upon authorization from the Owner to remove the fence system, the Contractor shall perform the following not limited to:
 - a. Careful removal, package neatly and secure Owner provide back to the Owner printed scrim and banners. Contractor shall deliver to Owner's designated facility for storage.
 - b. Where work was impeded by the fencing system, immediate commence with required planting and grading work.
- E. Project Signage: Project signage consist of the Project Construction Sign, the Project Banners and any safety and/or directional signage. All project signage shall be installed and complete within 24 hours of the fence system completion and before work can commence within the site fenced area. Any signage beyond those listed must be preapproved by the Owner prior to posting or installing.
- F. Any other signage shall be prohibited on the fence system, site or temporarily attached to equipment or cranes.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. Undamaged previously used materials in serviceable condition may be allowed but only at the Owner's acceptance. Costs borne by the Contractor to obtain acceptance from the Owner of used material is at the Contractor's expense. Provide materials suitable for the use intended.
- A. Chain-Link Fencing: All fence components shall be new or in like new condition, deviations from those requirements must be preapproved by the Owner. No bent or deformed fence components will be acceptable and shall be replaced immediately upon request. All fence posts shall be driven, set plumb and cut off so that they do not protrude beyond top of fence.

Construction fencing system shall be engineered.

1. Fence Height: 8' Height; Fence Material and components: Galvanized Steel
 2. Fence Fabric: 2 inch opening, 9 gauge, salvage knuckle
 3. Line Posts: 2-3/8 inch OD minimum, however will be dependent on height of fence required.
 4. Corner Posts: 2-7/8 inch OD, however will be dependent on height of fence required
 5. Top and Bottom Rails: 1-5/8 inch OD, with boulevards.
 6. Supporting Posts: Driven and reinforced as required
 7. Post Caps: Acorn or loop, all post shall receive caps
 8. Installation: All components shall be square, level, taught and properly secured.
- B. Portable Panel Chain Link Fencing: All fence components shall be new or in like new condition. All panels shall be installed plumb horizontal (not perpendicular) and no bent or deformed fence components will be acceptable and will be replaced immediately upon request. Panels shall be attached to each other via heavy duty couplers to aid in support
 1. Fence Height: 8' Height
 2. Fence Material and components: Galvanized Steel

3. Fence Fabric: 4" x 2" opening, 11 gauge welded mesh,
 4. Panel Frame: 1-5/8 inch OD
 5. Portable Panel Fence Feet: Plastic or rubber black coated concrete filled feet suitable for proper security and safety of the fence system during any type of weather and/or vandalism events Contractor shall not rely on or assume the use of sand bags. If sand bags will be allowed, they can only be used behind the fence within the construction area and shall be all black in color. Support Stays: Shall be installed every 3 panels or as required by fence manufacturer at a minimum to provide extra stability and maximum strength, support shall have a weight of a minimum of 210 pounds. Contractor shall be responsible to obtain engineered support stays necessary to ensure fence stability in cases of any type weather event.
 6. Installation: All components shall be square, level, taught and properly secured.
- C. Scrim: If conditions allow for plan scrim, scrim shall be in new or like new condition. Torn scrim will not be acceptable and will be replaced immediately upon request.
1. Plain Woven Scrim
 - a. Color: Dark Green
 - b. Size: One piece, full height 8'
 - c. Opacity: 75% minimum
 - d. Edge Treatment: Reinforced sewn edges with grommets every 12" o.c
 - e. Attachment: Zip ties color black at 12" o.c. along perimeter, Scrim shall be installed with consistent equal spacing on top and bottom of the fence height. Shall be taught with no ripples. For portable chain link fencing systems, the scrim shall be installed to cover the fence fabric and posts per portable panel.
 2. Printed Graphical Scrim
 - a. Attachment: Zip ties color black at 12" o.c. along perimeter, scrim must be continuously taught against each chain link panel.
- D. Live Screening: If live screening is required, plantings are to be maintained and kept healthy throughout the course of the project including watering, mulch and trimming as needed.
- E. Concrete Barricades: Barricades shall be in new or like new condition. Like new conditions shall be defined as having no paint, markings, cracks or gauges on the expose surface. Barricades shall meet CTDOT and Owner standards.
1. Height: 32 inches' minimum
 2. Length: 6-foot minimum
 3. Width: 24 inches at the base and 6 inches at the top
 4. Barricade shall be wrapped with scrim and be able to accept fencing.
- F. Green Safety/Snow Fence: Green safety/snow fence may be utilized for work areas as approved by the Owner. Safety/Snow fence shall not be utilized to protect newly installed landscape areas.
1. Color: Dark Green
 2. Size: 4' Height
 3. Openings: 3.5" x 1.75"
 4. Posts: Steel Green 1" Min
- G. Newly Landscape Area Controls: Stakes and rope shall be utilized for protecting newly seeded/sodded areas to restrict access to and to protect from pedestrian and vehicular traffic.

Once area has been determined to be accessible to pedestrian traffic, Contractor shall remove stakes and rope, wash clean and turn over to the Owner.

1. Stake: Eco-Step Stake or approved equal
2. Size: 32" height
3. Color: Green
4. Rope: 1/4" diameter polypropylene braided rope, color green

H. Safety Controls: Safety or Traffic Cones shall be in new or like new condition. Like new conditions shall be defined as having no paint, markings, cracks or gauges on the expose surface. Cones shall meet the following standards:

1. Road traffic control cones or tubes shall be florescent orange or florescent yellow in color for CTDOT / MUTCD requirements.
2. Grounds Safety Cones shall be lime green in color per Owner requirements.

I. Dust-Control

1. Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.
2. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
3. Gypsum or Plywood Wallboard: Provide gypsum wallboard complying with requirements of ASTM C 36 on interior walls of temporary partitions.
4. The use of calcium chloride or other chemicals for dust control shall be submitted for approval to the Owner prior to its use.

J. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

K. Water: Provide potable water approved by local health authorities.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of a minimum ten (10) individuals. Provide electrical power service and 120-V ac duplex receptacles, with no less than one (1) receptacle on each wall. Furnish room with conference table, chairs, and four (4) foot square tack and marker boards.
3. Drinking water and private toilet.
4. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 75 deg F.
5. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.

- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

- 1. Store combustible materials apart from building.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

- 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
 - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction.

- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

- D. 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.

- E. Electrical Power Cords: Power cords shall never be subject to physical damage. 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.

- F. Lamps and Light Fixtures: Provide general service LED lighting with wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior LED fixtures where exposed to moisture.

- G. First Aid Supplies: Comply with governing regulations.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Use qualified personnel for design and installation of temporary facilities. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Owner and shall be built with labor and materials furnished by the Contractor without expense to the Owner. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed at its expense upon completion of the Work. With the advanced written consent of the Owner, the temporary buildings and utilities may be abandoned and need not be removed.
- D. Noise Control: The Contractor shall make every effort to minimize noise disruption to occupants of buildings and adjacent buildings. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site. No noise generating work that interferes with classroom operation shall be tolerated. No noise generating work shall be allowed during exam periods where the noise will impact classroom functions. Examples of noise generating work include, but are not limited to sawing, drilling and hammering and/or jackhammering.
 1. Avoid use of tools and equipment, which produce harmful noise. No gasoline-powered equipment shall be used during times that the buildings are occupied. No gasoline-powered equipment may be used in the interior of buildings at any time.
 2. Refer to 01-1000 Summary as well as 01-5719 Temporary Environmental Controls for more requirements on Noise, Vibration and Odors.
- E. Collection and Disposal of Waste: Collect 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.
 1. All removed materials that are salvageable are the property of the Contractor unless otherwise noted in the specifications.
 2. All debris resulting from the performance of this contract will be the property of the Contractor and will be completely removed from the campus and disposed of in a legal manner.
 3. Chutes shall be black in color and dumpster type containers designed to keep dust and spillage to a minimum will be used by the Contractor. Dumpsters will be completely covered with a waterproof covering at all times when not in use. Remove from the site daily of all dumpsters that are full or overflowing.
- F. Nuisance Dust Control: The following provisions shall apply during demolition or construction phases of work:
 1. It is the intent of this specification to insure that nuisance dusts resulting from demolition or construction activities do not impact occupied areas of the building and surrounding the site. The Contractor shall take all measures necessary to accomplish this goal. These

measures will include as minimum polyethylene sheeting or wet methods of fugitive dust control. Keep all adjacent roads free and clear of dust and debris.

2. The Contractor shall submit a plan prior to commencement of work that will detail all methods of dust control. This plan shall be approved by the Owner prior to commencement of work. Failure to comply shall result in immediate stoppage of work until effective dust control measures are employed.

3.2 TEMPORARY UTILITY INSTALLATION AND CONTROLS

A. General: Installation of temporary service or connecting to existing service.

1. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
2. Arrange with appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
3. Obtain easements to bring temporary utilities to the site, where the Owner's easements cannot be used for that purpose.
4. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
5. For temporary service or connection to existing or new service: The Owner must be notified at least four (4) weeks in advance of any proposed interruption in order that all affected departments may be advised and have time to adjust their schedules accordingly. For new service, there are limited times within a year that the services can be impacted for a total shut down. Arrange adequate time with the Owner in preparation for the shutdown connections. Construction schedule must allow for advanced notification. Failure to plan ahead and notify the Owner of a pending shut down shall not relieve the Contractor from lost time. Owner reserves the right to limit the down time to a specified number of net hours and to set the date for each occasion of complete shutdown.
6. Any service (steam, water, electricity, etc.) shutdown which will interrupt the continuity of an experiment or be detrimental to a research project or which, in the opinion of the Owner, is required for other valid reasons, shall be maintained by safe and adequate temporary means and such temporary piping, wiring and associated devices shall be removed when no longer required.
7. Sewers and Drainage: If sewers are available, provide temporary connection to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.
8. Connect temporary sewers to the municipal system as directed by the sewer department officials.
9. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.

10. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction. Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 11. Sterilization: Sterilize temporary water piping in accordance with AWWA requirements prior to use.
- B. General: Installation of any Utilities
1. Soils: Filter out soil of construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
 - a. Existing soils shall be handled in the manner outlined within the University's Contractor Environmental Health and Safety Manual.
 - b. Residual soils shall be tested for contaminants prior to its removal from Owner's contiguous property.
 - c. Testing shall be in compliance with the residential direct exposure criteria and/or the applicable pollutant mobility criteria.
 - d. Soils cannot be transported from one Owner property to another without testing and acceptance of the test results by the Owner.
 - e. Residual soils shall not be saved and stock piled on any Owner property, without prior written approval from the Owner.
 2. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - a. Use of Owner's existing sanitary facilities will not be permitted.
 - b. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 - c. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used materials.
 3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
 4. Provide safety showers, eyewash fountains and similar facilities for convenience, safety and sanitation of personnel
 5. Drinking Water Facilities: Provide drinking water including paper supply.
 6. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 7. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
 8. Steam from the Owner's steam lines shall be provided at no cost to the Contractor. Contractor shall supply, install and maintain all temporary piping, radiators or unit

heaters, reducing valves, steam traps and other necessary fittings and accessories. Traps shall be provided to prevent steam from entering main returns. The temporary heating plan shall meet the approval of the Architect/Engineer, Fire Marshall and Owner. Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperature or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.

9. The Contractor shall provide temporary heat during construction for interior areas included in the Contract, and any adjacent or nearby occupied areas, to counteract low temperatures or excessive dampness and in any event, between October 15th and May 15th, maintain during said period or periods until final completion of the Contract, unless otherwise approved by the Owner in writing. Provide heat and ventilation to maintain specified conditions for construction operations and to protect materials and finishes from damage by temperature or humidity. All installation and operating costs shall be paid by the Contractor. Unless otherwise specified in the Contract Documents, the temporary heating shall be sized to maintain the following conditions on a 24-hour-per-day basis:

Occupied Dormitory or Living Areas: 68 degrees F

Office Spaces/Laboratories/Classrooms: 68 degrees F

Warehouses/Storage: 55 degrees F

The areas listed above are for example only. The Owner shall have sole discretion to assign minimum heating criteria.

10. Electrical Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
11. Except where overhead service must be used, install electric power service underground.
12. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 volts, AC 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance
13. Lighting: Provide weatherproof, grounded LED lighting
14. Whenever overhead floor or roof deck has been installed, provide temporary lighting with local switching.
15. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction and traffic and safety conditions.
16. Install exterior yard and sign lights so that signs are visible when Work is being performed.

17. Security: Provide temporary security of the construction site to fulfill safety and security requirements. Protect all workers, stored and installed materials, equipment and property during and after working hours.
 18. Telephones: Provide temporary or cellular telephone service for all personnel engaged in construction activities, throughout the construction period. Contractor shall arrange and pay for his own telephone service.
 19. Distribute to the project Team and Post for public viewing a list of important telephone numbers.
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Contractor's emergency after-hours telephone number.
 - e. Architect's office.
 - f. Engineers' offices.
 - g. Owner's office.
 - h. Principal subcontractors' field and home offices.
- C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 3. Perform daily construction cleanup and final cleanup using approved, filter-equipped vacuum equipment.
- D. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
 2. Provide dehumidification as required to mitigate mold growth.
- E. Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably

predictable and controllable fire losses. Comply with NFPA 10 “Standard for Portable Fire Extinguishers,” and NFPA 241 “Standard for Safeguarding Construction, Alterations and Demolition Operations.”

1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
4. Provide supervision of all welding operations, combustion type temporary heating units, and similar sources of fire ignition.
5. No gasoline shall be stored in or close to the building at any time.
6. Facilitate fire department access and review.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Maintain support facilities until Architect Schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
3. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
4. Ensure that any existing walkways, egress paths, exterior lighting or emergency phones impacted by the construction area are relocated.

B. Field Offices and Sheds: A field office **is (not) required** for this project, however should the Contractor choose to provide a field office, see requirements below:

1. Provide non-combustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. Comply with requirements of NFPA 241.
2. Field Offices: Provide insulate, weather tight temporary offices with electric lighting, air conditioning and heat and of sufficient size to accommodate required office personnel at the Project Site. The Field Office shall have two rooms, each approximately 150 square feet in size. The offices shall have ample natural light, a heater of sufficient capacity to maintain 70 degrees F in winter and an air conditioner of sufficient capacity to maintain 75 degrees F in summer. No trailer will be allowed on Owner property unless permanent markings indicating the name of the company are clearly visible. Keep the office clean and orderly of use for small progress meetings. Furnish and equip offices with a minimum of the following:
 - a. Furnish with desks and chairs, file cabinets, plan tables, plan racks, waste receptacles, conference room table and at least eight chairs.

- b. Equip with a water cooler and private toilet complete with water closet, lavatory and mirror-medicine cabinet unit.
- c. Equip with a 5 lb ABC fire extinguisher and an OSHA-approved first aid kit.
Equip with a facsimile machine and copier for use by the Contractor, Owner e and Architect/Engineer.

C. Temporary Roads and Paved Areas: Comply with the following:

- 1. The Contractor shall, under regulation prescribed by the Owner, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Owner. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage and provide appropriate traffic markings and cross walks. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.
- 2. Provide dust-control treatment that is non-polluting and non-tracking. Reapply treatment as required to minimize dust. The use of calcium chloride or other chemicals for dust control shall be submitted for approval to the Owner prior to its use.
- 3. Construct and maintain temporary roads and paving to adequately support the indicated loading and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas and parking where the same permanent facilities will be located. Review proposed modifications to permanent paving with the Architect.
 - a. Paving: Comply with Division-2 Section "Asphalt Concrete Paving" for construction and maintenance of temporary paving.
 - b. Coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.
 - c. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas that are without damage or deterioration when occupied by the Owner
 - d. Delay installation of the final course of permanent asphalt concrete paving until immediately before Substantial Completion, unless it adversely effects the site and access road. Coordinate with weather conditions to avoid unsatisfactory results.
 - e. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration and supervision.
 - f. Contractor shall sweep and remove all construction debris from all roads outside of construction zone daily or more frequently as is required by weather conditions and/or to the satisfaction of the Owner.
 - g.

D. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving."
 3. Recondition base after temporary use, including removing contaminated material, regrading, proof rolling, compacting, and testing.
 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."
 5. Maintain access for fire-fighting equipment and access to fire hydrants.
 6. Contractor shall sweep and remove all construction debris from all roads outside of construction zone daily to the satisfaction of the Owner and those having jurisdiction at the Contractor's expense.
- E. Use of Existing Roads: Contractor shall comply with Owner's requirements for use of existing roads within Owner's property and outside Owner's property. For details refer to the following weblink: <http://updc.uconn.edu/>
- F. Temporary Use of Owner's Property: Use of the Owner's grounds for access and laydown shall be as outlined in the Site Logistics Guidance Plan. The protection of trees, planting beds, lawns and soil structure shall be the primary focus.
1. Install tree and plant protection prior to the installation of other site fencing
 2. Limit vehicle traffic and staging to designated areas to prevent soil compaction. Employ surfaces that protect the underlying soil structure during construction
 3. Maintain trees, lawn areas and planting beds during construction so green material is thriving at the conclusion of the project.
 4. Submit restoration plan for these areas including decompaction, pruning, mowing, fertilizing, etc. prior to returning the campus grounds to the campus open space fabric.
- G. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice to minimize accumulations within the construction site and shall not impact safe travel of University grounds outside the construction site.
 - a. Remove from the construction site, haul and dispose outside of Owner property. Contractor shall not dispose on any Owner property under any condition.
 - b. Approved de-icing products for all Owner campuses include:
 - 1) Rock salt treated with a pre-wetting agent containing a corrosion inhibitor with a minimum 30% magnesium chloride.
 - 2) Calcium chloride
 - 3) Magnesium chloride
 - c. Sand is not permitted
- H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
 - I. Temporary Elevator Use: In an existing building with a freight elevator, the Contractor will be permitted to use the elevator for freight service and transportation of construction personnel during the construction period with prior approval from the Owner. This elevator must also be available to the Owner at all times; coordinate usage with the Owner. Reliance on the existing elevators by the Contractor is solely at the Contractor's own risk. At the end of construction, restore the elevator to its original condition; replace worn cables, guide shoes and similar items of limited life. Use of other elevators by the Contractor will not be permitted.
 1. Do not load elevators beyond their rated weight capacity.
 2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
 - J. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
 - K. Existing Stair Usage: Use of Owner's existing emergency stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
 - L. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities systems and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities at no cost to the Owner
 - B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 1. Comply with work restrictions specified in Division 01 Section "Summary."
 - C. Temporary Erosion and Sedimentation Control: Comply with the latest requirements of DEEP General Permit for the discharge of stormwater and dewatering wastewaters from construction activities or authorities having jurisdiction, whichever is more stringent and requirements specified in Division 31 Section "Site Clearing."

- D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of the latest DEEP General Permit for the discharge of stormwater and dewatering wastewaters from construction activities or authorities having jurisdiction, whichever is more stringent.
1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 2. Inspect, repair, and maintain erosion and sedimentation-control measures during construction until permanent vegetation has been established.
 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- F. Tree and Plant Protection: Comply with requirements specified in Division 01 Section "Temporary Tree and Plant Protection."
1. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials. With the exception of stinging insects.
- H. Site Enclosure Fence: Prior to commencing any work or mobilization, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering the site except by entrance gates. All fencing to have dark green reinforced scrim sheeting.
1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations or as indicated on Drawings and noted in the approved Site Logistics Plan.
 - a. Prior to fence installation, a fence system submittal shall be submitted and approved by the Owner. A pre-installation conference shall be held with all sub-contractors and workers responsible for supplying and installing the fence to go over the plan and the expectations.
 - b. All fence material, fence fabric, posts, panels, feet, scrim and banners shall all be on site prior to commencing installation.
 - c. Site fence shall be installed in accordance with the following
 - 1) Fence Posts and the top and bottom rail shall be installed and cut to appropriate height/length.
 - 2) Chain link fence shall be installed. Fence posts shall not exceed the fabric installation by more than 50 feet.

- 3) Reinforced scrim shall be installed. Chain link fence shall not exceed the scrim installation by more than 50 feet. Scrim shall be installed flush with the top of the fence so that the top salvage knuckle is not visible. Scrim shall then be stretched tight to cover the entire height of the fence. Horizontal joints shall not be permitted. The scrim shall be taught and free of wrinkles. Vertical scrim joints shall be overlapped to give the appearance of continuous piece of scrim.
 - 4) Contractor to install owner provided decorative banners on the exterior side of the site enclosure fencing as directed by Owner.
2. Phasing of work: As the work progresses, depending on safety and limitation conditions, the Contractor shall relocate or reduce the site fencing as required at no additional cost to the Owner.
 - I. Security Enclosure and Lockup: Install enclosure around partially completed areas of construction. Coordinate with Owner's Fire Marshall and install Owner provided lockable pad locks for entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Construction gates shall be closed at all times during the day to prohibit the general public from entering the site. Ensure no safety cones are left outside of the fence enclosure after deliveries. Lock entrances at end of each work day.
 - J. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction and the Owner for erecting structurally adequate barricades, including warning signs and lighting.
 - K. Temporary Egress: Maintain temporary egress from existing occupied facilities at all times and as required by authorities having jurisdiction.
 - L. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.
 1. Construct covered walkways using scaffold or shoring framing.
 2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
 3. Where required by OSHA regulations provide temporary lighting under covered walkways to satisfy requirements.
 4. Covered walkways shall maintain a minimum clear height of 8ft above walking surface, and shall be designed to support all imposed loads and a minimum live load of 150 psf.
 - M. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
 - N. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 2. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
 - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
 3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 4. Insulate partitions to control noise transmission to occupied areas.
 5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
 6. Protect air-handling equipment.
 7. Provide walk-off mats at each entrance through temporary partition.
- O. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas.
 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with Owner's fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
- P. Temporary Lighting and Security Phones: Installation of temporary fencing, temporary egresses, temporary enclosures, covered walkways and the like shall take into consideration the affects to existing lighting, cameras and emergency code blue phones. Relocate any existing lights and/or code blue phones in order to maintain sufficient lighting and line of site of blue phones.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction. Remove any materials that appear to have been affected by moisture as determined by testing and the Owner.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.

2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard, replace, or clean stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use permanent HVAC system to control humidity.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
 - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
 - c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.6 TRAFFIC CONTROL

- A. Due to the large volume of pedestrian and vehicular traffic within the campuses, it shall be the responsibility of the Contractor to provide traffic and pedestrian accessibility to all areas of the campus as applicable.
- B. The Contractor shall comply with Connecticut Regulation 13b-17-28, Safety to Traffic, which requires that "When portions of the traveled way are made dangerous for the movement of vehicles or pedestrians, a sufficient number of uniformed police officers, flagmen, or traffic men, shall be employed by the permittee to direct traffic safely through the area."

- C. The requirement to maintain pedestrian and vehicular traffic is further defined in the Connecticut Department of Transportation Specifications Section 9.71, Form 814, which requirements are incorporated herein by reference.
- D. The Contractor is required to contact the Owner's Police Department to determine jurisdiction. Thereafter Contractor may contact the Town of Mansfield Police Department or other state or private sources directly to obtain the necessary manpower to comply with these regulations. The Owner shall be informed by the Contractor of his traffic control procedures prior to the commencement of construction. Any traffic control performed other than by Contractor self-performance shall be considered subcontracted.
- E. At all entrance gates a flag person shall be employed to coordinate project deliveries and manage pedestrian as well as vehicular traffic. This person shall also be responsible for closing the site access gates after each delivery.

3.7 PROJECT IDENTIFICATION AND SIGNS

- A. Project Identification Signs:
 - 1. Decorative banners for the site enclosure fencing shall be provided by the Owner and installed by the Contractor. Such banners shall be installed immediately following scrim installation. Utilize ties used for scrim.
 - 2. Decorative scrim for the site enclosure fencing shall be provided by the Owner and installed by the Contractor. Non-decorative scrim shall be supplied and installed by the Contractor.
 - 3. Construction Project Sign shall be provided and installed by the Contractor and shall simultaneously be installed with the installation of the temporary fencing. See details on the size and typical design layout of the sign and installation requirements located on the Owner's website: <http://updc.uconn.edu>.
- B. Temporary Signs: Prepare signs to provide directional and safety information to construction personnel and visitors. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs, except those required by law.
 - 1. All detour signs required by CTDOT shall be submitted to and approved by the Owner. The Owner reserves the right to adjust size, color and placement of signs.
- C. Other directional and detour Signs: Other directional and/or detour signs not required by the CTDOT shall adhere to project specific specification requirements and be submitted to the Owner for approval.

3.8 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses directly related to the project.
- B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Prevent water filled piping from freezing.
 3. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion has been formally recognized.
- D. Termination and Removal: Unless the Owner requests that it be maintained longer, remove immediately each temporary facility when need for its service has ended, when it has been 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 temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction immediately when such temporary surface is no longer required.
 3. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that do not meet the material component requirements specified. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 4. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
 - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.
 - d. Restore all existing facilities and grounds used during construction to specified requirement or to original condition. Restoration shall include but not limited to:
 - 1) Removal of compacted grounds area due to equipment and vehicular access and movement to and within the site work area. Adding of compost and other nutrients to the soil to meet the Project standards for lawn/turf establishment.
 - 2) Pruning and mulching of existing planting beds that are within the construction fence area. Restore grass areas immediately surrounding and within the Construction fence area to blend with other surrounding plantings and grass areas maintained by the Owner. Should there be no Project standards for lawn/turf establishment, Contractor shall follow the Owner's requirements for turf restoration.

- e. Remove completely from ground surfaces all “call before you dig” and other pavement markings made in support of the project. Covering over of markings is not acceptable.

END OF SECTION 01-5000

SECTION 01-5640 – TREE PROTECTION AND PRESERVATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the protection and stress reduction of existing trees and vegetation that interfere with, or are affected by, execution of the Work, whether temporary or permanent. Work is to be coordinated with the contract documents which shall include a tree preservation plan authored by a certified arborist.
- B. The following specifications apply to work of the related to protection and stress reduction measures and coordination and oversight of the tree preservation Plan by the Owner. This work includes but is not limited to the following:
 - 1. Coordination of Temporary Tree and Plant Protection
 - 2. Selective tree removals for “Removal By Arborist” (RBA) (Contract Arborist) within Tree Protection Areas (TPAs)
 - 3. Root Pruning
 - 4. Temporary Site and Tree Protection Fencing and temporary sign installation referenced in Section 01-5000 Temporary Facilities and Controls
 - 5. Composted Mulching
 - 6. Liquid subsurface fertilization
 - 7. Temporary Limb Guying or Clearance Pruning for construction access
 - 8. Seasonal Supplemental Watering
 - 9. Monitoring and Treatment of Tree Health
 - 10. Supersonic Air Tool (SSAT) and Hand Excavation within the Critical Root Zones (CRZs)

1.3 DEFINITIONS

- A. Certified Arborist: Credential of an individual arborist issued and administered by the International Society of Arboriculture. This credential must be current and valid to qualify to use the copyrighted designation of “Certified Arborist”. Refer to www.isa-arbor.com for additional information.
- B. Contract Arborist: Arboricultural firm contracted to implement the approved tree preservation plans on site. All crews’ conduction arboricultural operations on site shall consist of at least one Certified Arborist who directly oversees all work by that crew. Arboricultural operations include, but are not limited to, pruning, tree protection device installation and maintenance (fence, matting, etc.), root pruning, air tool root excavation/exploration (SSAT), soil care activities, soil testing, mulch application, tree inspections, pesticide/chemical applications and

tree removal. Special qualifications submittal is required for review and approval below. Contract Arborist will be sub-contracted by the general contractor.

- C. Tree Protection Area (TPA): Area indicated on Drawings surrounding individual trees or groups of trees to be protected during construction.
- D. Supersonic Airtool (SSAT): Hand held tool designed to focus highly compressed air (90-125 psi) provided from a large air compressor (185-375 cfm) at speeds close to 1400 mph at the tip of the tool. Widely used by arboricultural firms and consultants for multiple purposes including but not limited to: root collar investigation, CRZ investigation, root pruning (especially large roots > 1.5" diameter or where existing underground cables or conduits are located, radial mulching and restoration of compacted soils, excavation for utilities within protected CRZs to minimize root damage from constriction.
- E. Tree Removal by Arborist: Action whereby the Contract Arborist removes trees designated for "Removal by Arborist" selected from inside the TPAs. Trees shall be taken down by hand sectionally, or directionally felled to minimize damage to adjacent tree canopies, root systems, or adjacent structures. Work shall be completed by a qualified contract arborist.
- F. Crown Pruning: Action by the Contract Arborist of pruning specific tree limbs to improve tree health, reduce hazard, and / or provide construction clearance.
- G. Supportive Cabling: Installation of supportive cabling for designated tree branches due to weak branch attachments.
- H. Root Pruning: Action indicated on Drawings to provide a more suitable cut for protected tree roots to minimize ripped or torn roots during excavations and grading with standard construction equipment. Various methods may be used.
- I. Mulching of Trees: Application of a wood mulch product to areas surrounding designated trees. Mulch increases moisture-holding capacity, helps mitigate soil compaction, and increases needed soil organic composition.
- J. Soil Amendments: Various product components applied to existing soil environment of protected trees, as indicated on Plan Notes.
- K. Tree Growth Regulator (*Paclobutrazol*): Products applied to designated trees used to regulate plant growth in such a way as to restrict canopy growth and free stored or produced energy for other uses in the tree. For highly impacted trees, more energy may be available for fibrous root growth (to combat root loss), thicker darker leaves (allowing for increased photosynthesis, and increased drought tolerance), and pest tolerance (often an issue with construction stressed trees); among other potential benefits.
- L. Limits of Disturbance (LOD) (also called Limits of Construction): Specific outer limits of all construction activities for the entire project.
- M. DBH (Diameter at Breast Height): Tree trunk diameter measured at 4.5 feet above grade.

1.4 SUBMITTALS

- A. The Contract Arborist shall provide submittals as follows:
1. Product Data: For each type of product indicated
 2. Certification: For each phase, the Contract Arborist shall certify for each tree designated to remain has been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
 3. Qualification Data: For Contract Arborist Firm Qualifications, submit firm and individual qualifications as follows:
 - a. Submit a minimum of two resumes and detailed qualifications from staff or team individuals assigned to this project as detailed under Quality Assurance below. Due to the complexity of this project, standard arboricultural experience may not qualify.
 - b. Provide references for above from a minimum of three commercial, non-governmental or governmental projects for whom similar tree preservation programs have been successfully implemented. Include the following information:
 - 1) Project Name, size and scope
 - 2) Number and species of trees involved
 - 3) Relevant photos or aerials
 - 4) Scope of services provided
 - 5) Name and contact for project owner, designer, or contractor.
 4. Pedestrian / Property Protection Plan: Contract Arborist to submit a written plan describing all protective measures proposed to be used. Protection measures shall be required for all on-site tree care activities including but not limited to Supersonic Airtool excavation, root pruning, canopy pruning, etc. to minimize potential impact to pedestrians and property.
 5. Maintenance Prescription: Contract Arborist shall submit for care and protection of trees as a result of construction, changes in weather patterns or events, and response in health from individual trees during and after completing the Work.
 6. Soil Samples: Submit soil sample for analysis during site work phase of this project. Take representative soil samples from all areas of protected trees (landscape areas and street tree planting pits). Samples and procedures per local cooperative extension shall be followed. Forward reports to Engineer and Owner.
 7. Soil Amendments: Contract Arborist shall submit specific fertilizer formulations, application rates and methods for review by Project Arborist. All fertilization and soil amendments shall be in conformance with soil test results.
 8. Site Documentation: Submit weekly reports to the Owner containing complete documentation of all tree impacts and tree preservation activities including but not limited to: root pruning, tree protection fencing, excavation within critical root zones, tree fertilization or other treatments, etc. Documentation shall include tree numbers of trees impacted and / or treated. Complete daily photographic record is also required.

9. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damaged caused by construction activities.
 - a. Use sufficiently detailed photographs or videotape.
 - b. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
10. Tree and shrub removal of additional plants not under base contract will require a “request to remove plantings” form to be submitted to the Owner for approval prior to starting the removal.

1.5 QUALITY ASSURANCE

- A. Certified Arborist (individual) Qualifications: An arborist certified by the International Society of Arboriculture (ISA) and licensed in the jurisdiction where project is located. All work performed by Contract Arborist including any oversight and documentation work, shall be performed or directly supervised by at least one on-site arborist with these minimum qualifications.
- B. Contract Arborist Firm Qualifications:
 1. Contract Arborist Firm shall comply with the following:
 - a. Established business with documented experience of at least five years.
 - b. Experience working on a minimum of three commercial, nongovernmental or governmental projects where similar tree preservation programs have been successfully implemented.
 - c. Properly licensed and insured to perform arboricultural work in the jurisdiction where the project is located.
 2. Provide names of each individual to comply with the following:
 - a. Minimum BS degrees in forestry, arboriculture, or related field and Certification in ISA.
 - b. Resumes should reflect combined 10 years full time experience on similar tree preservation projects.
 - c. Provide individual(s) names, certifications, and each anticipated role in this project. “Role(s)” shall be defined as one or more of the following:
 - 1) Project Manager
 - 2) Technical Oversight
 - 3) Field Arborist / Technician
 3. For each staff member, list a minimum of three construction projects and a minimum three years’ experience in the following technical applications:
 - a. Soil amendment prescriptions and applications
 - b. Supersonic Airtool Excavations for underground utilities exceeding 24” depth.
 - c. Root Protection Matting or similar applications
- C. Part of this work to extent referenced shall include but not be limited to the following:
 1. ANSI A300 Standard Practices for Trees, Shrubs, and Other Woody Plant Maintenance.
 2. Part 1-2001, Tree Pruning;
 3. Part 2-3004, Fertilization;

4. Part 3-2000, Cabling, Bracing, Guying of Established Trees;
 5. Part 4-2002, Lightning Protection Systems;
 6. ANSI Z133.1 – 1994 and most recent updates, Tree Care Operations – Safety Requirements
- D. Fertilizer and pesticide will be applied in strict accordance with the manufacturers label instructions and applicable federal, state, and local requirements. Fertilizer, soil conditioners, and pesticide applications must be approved by the owner prior to application. Safety Data Sheets (SDS) will be available for fertilizers and pesticides in the Contract Arborists' possession while on the site.
- E. Pre-Construction Meeting: Conduct meeting at the project site prior to commencement of construction related activities.
1. Contract Arborist, Project Arborist, Project Design Team, Owner and Contractors shall attend.
 2. Review methods and procedures related to tree protection and preservation including, but not limited to, the following:
 - a. Site Logistics Plan
 - b. Construction schedule – verify availability of material, personnel, and equipment needed to make progress and avoid delays.
 - c. Enforcement of requirements for tree protection areas.
 - d. Responsibilities of all parties, including coordination, access and timing requirements.
 - e. Field quality control

1.6 PROJECT CONDITIONS

- A. The following practices are prohibited within all tree protection areas except as specifically indicated herein:
1. Storage or stockpiling of construction materials, chemicals, debris, or excavation materials.
 2. Parking vehicles, trailers or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment or discharge of water.
 6. Excavation or other hand or mechanical digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Temporary Tree Protection Fence

1. Chain-Link Fence: Follow requirements on fencing outlined in 01-5000 Temporary Facilities and in 01-1000 Summary.

B. Wood Chip Mulch

1. Double ground hardwood, aged a minimum 6 months from production, free from deleterious materials. Green chips or mulch not aged at least 6 months shall not be used. No walnut mulch shall be used. Submittal shall include original material source(s), number and type of grindings / chippings, duration of aging, timing of turning / aeration.

C. Hardwood Destruction Borer / Beetle Control: Bifenthrin, such as Onyx or equivalent. Applied per label.

D. Tree Growth Regulator (*Paclobutrazol*)

1. Paclobutrazol is a compound used to regulate plant growth in such a way as to restrict canopy growth and free stored or produced energy for other uses in the tree. For highly impacted trees, this means more energy may be made available for fibrous root growth (to combat root loss), thicker darker leaves (allowing for increased photosynthesis, and increased drought tolerance), and pest suppression (often an issue with construction stressed trees); among countless other potential benefits. Trade name Cambistat® or equal.

E. Soil Care/Soil Amendments

1. Fertilizer and soil amendment selection shall be based upon soil test results and recommendations.

PART 3 - EXECUTION

3.1 TREE REMOVAL

- #### A. See Section on Demolition for specifics on tree shrub or hedge removal.

3.2 TREE PROTECTION AND STRESS REDUCTION MEASURES

A. General

1. Installation/implementation of the following measures shall be performed in the field by and ISA Certified Arborist as provided by the Contract Arborist

2. All work, substitutions and /or modifications shall be subject to review and approval by the Owner.
 3. All work shall conform to applicable federal, state and local regulations and industry standards.
 4. The Contract Arborist shall be responsible for all items in this section.
- B. Coordination of Tree preservation plan. The work of the Contract Arborist coordination to include but not limited to the following:
1. Existing underground utility marker conflicts brought to the attention of the Contractor for resolution as well uncovered underground utilities as a result of work.
 2. Coordinate necessary survey layout of proposed construction elements in order to provide accurate locations for tree protection measures.
 3. Layout location of designated tree protection based upon proposed construction and methods of construction for that area.
 4. Site walk with Owner and Site Superintendent to verify location of all tree protection measures prior to execution.
 5. Notify Site Superintendent and Owner if construction adjacent to tree protection does not appear to follow specifications or prior agreement or conflicts with tree protection seem eminent.
 6. Coordinate with Site Superintendent and Owner, for access of deliveries, crews, equipment, start up, and cleanup of each item of work.
 7. Provide “as built” of any change to location of tree protection.
 8. Attend progress meetings as requested.
 9. Provide submittals as required.
 10. Notify Superintendent and Owner of any breach or damage to tree protection requiring attention.
- C. Pruning and Supportive Cabling
1. Specific canopy pruning for tree health, risk reduction, and construction clearance per Contract documents
 2. Size, health, species, and impact from proposed construction will be taken into consideration in determining pruning type for each designated tree. Risk Reduction Pruning will remove dead, dying, and declining limbs 2” diameter and larger. No interior green branching including sprouts will be removed unless approved by Contract Arborist.
 3. Contractor, Contract Arborist, and Owner shall meet at site to determine overhead clearance conflicts between trees and construction equipment/activities to prevent breakage, impacts, or aesthetic concerns. All work shall conform to ANSI A-300

arboriculture standards. An aerial assessment shall be made for all trees climbed to report any structural weakness of concern to the Owner.

4. Prior to climbing any tree a risk assessment will be performed using visual, sounding, or basic drilling as needed by the Contract Arborist. Trees deemed high risk should not be climbed; alternate methods should be used and the tree reported to the Owner immediately.
5. Supportive Cabling of weak unions may be recommended by the Contract Arborist if the need is discovered during pruning operations. ANSI Standards apply. Cabling may be included only if submitted to the Engineer and approved by the Owner.

D. Root Prune

1. Purpose of the root pruning is to provide a more suitable cut so as to not rip or tear roots during excavations and grading with standard construction equipment. The exact location and depth along the LOD or edge of utility excavation will be determined during the layout by a Certified Arborist.
2. Root Pruning for urban sites with specimen trees or for transplanting requires the use of SSAT excavation for hand pruning. Refer to SSAT specifications in the section
3. Sufficient moisture is necessary for reducing the level of dust, increase work efficiency, and provide a hospitable environment of the tree roots and pedestrians.
4. At a pre-work site inspection by the Contract Arborist more than 72 hours in advance of work start, subsurface probing to 24-36" with a tile probe or similar method will determine if sufficient soil moisture exists. If sufficient moisture is not found, immediate coordination with the site managers shall be made to irrigate the proposed work areas. Methodology may be soaker hose, sprinklers, soaker cans with small drilled holes to release water slowly or other methods. A second follow up inspection shall be made to determine final sufficiency to begin.
5. All root pruning operations shall be performed by the Contract Arborist and directed in the field by and ISA Certified Arborist with documented experience in similar SSAT excavation and root pruning.

E. Temporary Tree Protection Fence

1. Type and placement of fence to be designated on the Preservation Plans and Details.
2. Attach tree protection area signs at 30' feet spacing, facing construction activity. For fence lower than 6' feet in height, attach owner provided flagging as directed. Consult with the Owner for sign content.
3. Tree protection area signs shall be high visibility and all weather to last duration of the project / phase.
4. Install tree protection after root pruning if shown, and prior to all other mobilization such as demolition, clearing and/or excavation.

5. Install tree protection at 6" – 12" outside (construction side) of the Root Prune line or within the Root Prune Trench.
6. Silt fence will be outside (construction side) the tree protection fence, unless super silt fence is used in lieu of tree protection. Trenchless installation method shall be employed per Detail if Root Protection Matting is designated.
7. Exact placement of fence will be determined in walk-through with Contractor, Project Arborist, Contract Arborist, Engineer, and Owner.
8. Sequencing of the tree protection fence will be determined during the initial site walk. In any case, no construction activities shall occur in each phase or section until approved protection is installed.

F. Hand Excavation within Tree Protection Areas

1. For excavation within the critical root zone areas of trees to remain, the intent is to minimize tree and root damage from excavation activities.
2. Excavation shall be performed using SSAT, hand tools (shovels, etc.), or other approved non-damaging method. Roots shall not be damaged by the excavation except for approved root pruning.
3. Refer to "Supersonic Airtool Excavation" and "Construction Oversight by Arborist" specifications in this section for additional requirements.
4. All work shall be directly supervised by Contract Arborist in collaboration with the Owner's trades and subcontractors.
5. RPM (Root Protection Matting) shall be installed along trench sides to allow for temporary soil stockpile and access.
6. Excavate along the edge of the proposed trench closest to the trees to be protected as shown on the plans. Roots shall be uncovered and care taken to avoid damage to roots and bark.
7. Contract Arborist shall prune the exposed roots. Excavation shall not extend beyond the line where roots were pruned.
8. Contractor may proceed with conventional excavation methods or with hand excavation methods if clearance to the tree is inadequate for equipment access.
9. No roots shall be cut by the contractor.

G. Supersonic Airtool (SSAT) Excavation

1. Refer to "Hand Excavation within Tree Protection Areas" specification in this section for additional requirements
2. At a minimum, all SSAT work shall include the use of a barrier system such as temporary walls or tents to protect property and pedestrians from flying debris.

3. Excavate along the edge of the proposed trench closest to the trees to be protected as shown on the plans. Roots shall be uncovered and care taken to avoid damage to roots and bark.
4. Excavation shall proceed per the “Hand Excavation within Tree Protection Areas” specification in this section.

H. Wood Chip Mulch

1. Mulching for the duration of construction for protection and stress reduction. Mulching will increase moisture-holding capacity, minimize soil compaction, and increase needed organic composition. Mulch shall meet the specifications and shall be three (3) inches in depth.
2. For individual trees designated on the TPAK within the TPS or curvilinear TPA install mulch to a radius equal to trunk diameter inches equated to mulch ring diameter in feet (24” inch trunk diameter = 24’ feet diameter mulch ring). Where planting pit areas are restricted by hardscape, mulch the greatest area possible.
3. For privately owned trees, any installation is contingent upon receipt of owner’s permission. Owner may decline.
4. For linear TPAs along LOD Install mulch strips a minimum 10’ feet wide the length of critical root zones along the outside of the LOD/Root Prune line (just inside the Tree Protection Zone) for designated significant trees impacted by proposed construction.
5. Motorized equipment shall not enter the Tree Protection Area (TPA) unless specifically approved by the Project Arborist and specific conditions met (RPM, AlturnaMATS, etc.). Any such motorized equipment shall be operated by a certified arborist while inside the TPA.
6. Do not allow mulch to contact trunk / roof flare.
7. Mulch depth shall be 3” inches.

I. Tree Growth Regulator (*Paclobutrazol*)

1. Paclobutrazol is a compound used to regulate plant growth in such a way as to restrict canopy growth and free stored or produced energy for other uses in the tree. For highly impacted trees, this means more energy may be made available for fibrous root growth (to combat root loss), thicker darker leaves allowing for increased photosynthesis, and increased drought tolerance.
2. Specific methods and dosages are contained on the label and are determined by size and species, and applied by a state licensed pesticide applicator. Designated trees are shown on the Tree Protection Action Key (TPAK).

J. Supplemental Watering

1. This action is for high impact trees of significance during seasonal drought times of project construction. Based upon the number and size of trees various strategies can be

considered to maintain adequate soil moisture during these times. These strategies may include but are not limited to the following:

- a. Fire hydrant connection battery powered timer and drip irrigation hose/tubing;
 - b. Water tank truck and hand applied as directed;
 - c. Temporary above grade poly tank with battery-powered timers for drip or soaker hoses at each TPA.
 - d. 30-50 gallon watering cans with 6 – 8 drilled holes in bottom to allow slow seeping of water; spacing and rotation to reach desired gallons. Equivalent means of affectively watering trees as approved by Engineer or Project Arborist.
2. Trees requiring this treatment are indicated in the TPAK. Other trees will not receive this treatment.
 3. Drought times shall be defined as:
 - a. Periods during the growing season of two weeks or longer, where daytime high temperatures reach 80 degrees Fahrenheit or higher and less than ¼” rainfall are recorded per week. Or,
 - b. Periods during the growing season designated as “abnormally dry” or “drought” of any severity, by the U.S. Drought Monitor: <http://droughtmonitor.unl.edu/> Or,
 - c. Any period of extraordinary circumstance, as determined by the project arborist or engineer
 4. A prescription for the number of gallons and strategy for watering designated trees will be developed. Large mature trees with impacts to root systems require as much as 100 – 250 gallons per week during 90 degree days during summer drought times.
 5. Periodic inspections by an ISA Certified Arborist (provided by the Contract Arborist) as this time are critical. Depth of moisture in soils shall be determined by soil sample tube or other exploratory means.
 6. Minimum watering shall be considered to be 6 applications per growing season typically July through October with the exact timing and duration to be determined by the ISA Arborist.

K. Overhead Clearance

1. Trees to remain shall be assessed prior to construction for overhead clearance for construction activities. Contract Arborist shall recommend either canopy pruning, temporary guying/tying of select limbs, or alternative construction methods.
2. Pruning for clearance shall not remove branches above 12’ feet or over 6” inches diameter
3. All pruning proposed by the Contractor and / or Contract Arborist shall first be reviewed and approved by the Owner and Project Arborist.
4. Equipment exhaust should be directed away from trees as much as possible. Stationary equipment shall not exhaust directly under or toward trees.
5. Contractor shall use appropriate equipment near trees to ensure that trees are not damaged by construction. Contractor shall provide any specialized equipment needed at no additional cost to the owner.

6. Any pruning shall also conform to the pruning specifications in this section.

L. Soil Tests and Soil Care/Fertilization

1. Initial soil testing within tree protection areas is required. Conduct individual soil tests for separate tree protection areas (small adjacent areas may be tested together). Soil test shall be a representative sample from each area. Soil testing shall include a texture analysis (sand, silt, and clay percentages), soluble salts, and sodium tests.
2. Treatments to the tree protection areas for specified trees (see TPAK) shall be based on the results of the soil analysis. Fertilization should be consistent with the recommendations of the ANSI A-300 (Part 2) Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Fertilization) 2004, except as described herein.
3. Application rates shall not exceed a rate of 1 pound of actual nitrogen per 1,000 square feet annually. Fertilizer used should include humic acids, soluble seaweed extracts and soil biological inoculants (mycorrhizae, etc.).
4. Applications to confined areas (i.e. street tree planting pits) should be made by soil injection. In areas where adequate application rates cannot be achieved, injection should be made to the point of refusal.

3.3 FIELD QUALITY CONTROL AND MONITORING

A. Tree Condition Monitoring

1. An ISA Certified Arborist (provided by the Contract Arborist) shall perform monitoring twice per month year round to monitor insects, disease, soil moisture levels, weather, and health changes on all trees designated on Tree Protection Action Key.
2. The monitoring will include a report that details problematic areas that have been addressed, treatments provided to reduce the problem, and anticipated treatments forecast for 30 days. This report will be forwarded to the Project Arborist, Engineer and Owner for documentation.
3. Any treatments recommended by the Contract Arborist not already included in the project scope shall be noted in the reports for review by the Project Arborist, Engineer and Owner. No additional work is to be performed unless approved in writing by the Owner.

B. Construction Oversight by Contract Arborist

1. Any work within CRZs of retained trees shall be directly supervised by the Contract Arborist.
2. If roots are encountered during excavation, work shall progress as directed by the Contract Arborist. Contract Arborist, in coordination with the construction and design teams, shall determine appropriate means and methods to address the roots. Options may include, but not be limited to, severing the roots, hand or SSAT excavation. Contractor shall not cut roots.

3. Refer to “Hand Excavation within Tree Protection Areas” specification in the section.
4. All work shall be documented thoroughly, including photo documentation. Refer to site documentation submittal requirements.

3.4 CONTRACTOR DAMAGE AND PENALTIES

A. Remedial Measures

1. Any damage caused to the trees by the work of this contract through negligence by the contractor shall be immediately remedied by the contractor. Contractor shall be responsible for any associated costs.
2. Remedial work may include pruning, cabling, or any other measures up to and including removal and replacement, as determined by the Project Arborist and Engineer.
3. Remedial work shall be performed by the Contract Arborist, as approved by the Project Arborist and Engineer.
4. All required remedial work shall be performed to the satisfaction of the Project Arborist and Engineer, at no additional cost to the owner.

B. Tree Replacement

1. If damage to any tree is severe, because of negligence by the contractor as determined by the Project Arborist and Engineer, it shall be replaced with a new tree of equal size caliper and species as that of the damaged tree.
2. If a replacement tree of equal size and caliper is not possible as determined by the Project Arborist and Engineer, it shall be replaced on an inch by inch basis with new trees of a minimum caliper size of 2”-3”.
3. Replacement trees shall be supplied and installed at no additional costs to the owner, including all incidental costs including the costs of inspection of the tree at the nursery and any other incidental costs associated with tree replacement.

END OF SECTION 01-5640

SECTION 01-5719 - TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies the control of environmental pollution and damage that the Contractor must consider for air, water, and land resources. It includes management of visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants and resources encountered or generated by the Contractor. The Contractor is obligated to consider specified control measures with the costs included within the various contract items of work.

Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which (human health and the environment):

Adversely affect human health or welfare,

Unfavorably alter ecological balances of importance to human life,

Effect other species of importance to humankind, or;

Degrade the utility of the environment for aesthetic, cultural, and historical purposes.

Definitions of Pollutants:

Air: The presence on the ambient air of one or more air pollutants (e.g., dust, fumes, mist, smoke, particulate matter) in such quantities as likely to be injurious to the environment, to health of human, plant or animal life or to property

Chemical Waste: Petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals, and inorganic wastes.

Debris: Combustible and noncombustible wastes, such as leaves, tree trimmings, ashes, and waste materials resulting from construction or maintenance and repair work.

Sediment: Soil and other debris that has been eroded and transported by runoff water.

Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations and from community activities.

Surface Discharge: The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "water of the United States" and would require a permit to discharge water from the governing agency.

Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass and crockery, metal and lumber scrap, tin cans, and bones.

Sanitary Wastes:

- a. Sewage: Domestic sanitary sewage and human and animal waste.
- b. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2 QUALITY CONTROL

Establish and maintain quality control for the environmental protection of all items set forth herein.

Record on daily reports any problems in complying with laws, regulations, and ordinances. Note any corrective action taken.

1.3 SUBMITTALS

In accordance with Section, 3300, SUBMITTAL PROCEDURES, furnish the following:

- A. Environmental Protection Plan: After the contract is awarded and prior to the commencement of the work, the Contractor shall meet with the Engineer and Owner to discuss the implementation of the sedimentation and erosion control plan found in the contract drawings and to develop mutual understanding relative to details of that plan. The Contractor shall prepare and submit to the Engineer and Owner for approval as outlined in section 3100 Project Management and Controls, a written and/or graphic Environmental Protection Plan including, but not limited to, the following:
 - a. Name(s) of person(s) within the Contractor's organization who is (are) responsible for ensuring adherence to the Environmental Protection Plan and the CT Department of Energy and Environmental Protections General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (if applicable)
 - b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site.
 - c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
 - d. Name(s) and qualifications of person(s) responsible for conducting routine sedimentation and erosion control inspections, and their qualifications.
 - e. Description of the Contractor's environmental protection personnel training program.
 - f. Methods for protection of features to be preserved within authorized work areas including trees, shrubs, vines, grasses, ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, and archeological and cultural resources.
 - g. Procedures to provide the environmental protection that comply with the applicable laws and regulations. Describe the procedures to correct pollution of the environment due to accident, natural causes, or failure to follow the procedures as described in the Environmental Protection Plan.
 - h. Permits, licenses, and the location of the solid waste disposal area and recycling centers, if applicable.
 - i. Any alterations to the sedimentation and erosion control drawings and/or Environmental Plan including but not limited to showing locations of any haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

Approval of the Contractor's Environmental Protection Plan will not relieve the Contractor of their responsibility for adequate and continued control of pollutants and other environmental protection measures.

1.4 PROTECTION OF ENVIRONMENTAL RESOURCES

Protect environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this contract. Confine activities to areas defined by the specifications and drawings.

A. Protection of Air Quality:

All Contractors, diesel powered on-road and off-road construction equipment used on site during the course of the project shall meet the following:

- a. On-road and off-road construction vehicles shall not operate for more than three (3) consecutive minutes and no longer than five (5) total minutes in any 60-minute period when the vehicles are not in motion. Exceptions are made for weather extremes, health and safety and certain operational conditions set forth in Regulations of Connecticut State Agencies (RCSA) Section 22a-174-18(b)(3)(C).
- b. Contractors shall implement and track a preventative maintenance plan for all equipment according to the engine manufactures specifications.
- c. The use of ultra-low sulfur diesel fuel (less than or equal to 15 ppm sulfur content as defined by ASTM) shall be used for all diesel powered construction equipment.
- d. 50 percent of all construction equipment runtime shall be based on using equipment that has an U.S. Environmental Protection Agency (EPA) compliance rating of Tier 2 or higher. All equipment shall have a minimum compliance rating of Tier 1. Contractors can retrofit older equipment with diesel oxidation catalysts or particulate filters to meet EPA Tier standards. In addition, all motor vehicles and/or construction equipment (both on-road and off-road) shall comply with all pertinent State and Federal regulations relative to exhaust emission controls and safety.
- e. The Contractor or Construction Manager, in conjunction with the Subcontractors shall at least monthly record the following and provide upon request to the University representative the following:
 - a) Make, Model and Year of all equipment
 - b) Tier Rating of each piece of equipment
 - c) Run Time of each piece of equipment
 - d) Calculation of percentage of runtime per tier of equipment
 - e) Fuel purchasing records
 - f) Equipment maintained plan demonstrating equipment maintenance is per manufactures recommendations.
 - g) Enforcement records of idle reduction policy.
- f. All Work shall be conducted to ensure that no harmful effects are caused to adjacent Sensitive Receptor Sites. When placing heavy equipment and accepting deliveries, diesel powered engines shall be located away from fresh air intakes, air conditioners, entry ways and operative windows.

If any diesel powered on-road and off-road construction equipment is found to be in non-compliance with these provisions by the Owner's Project Manager, the Contractor or Construction Manager will be issued a notice with an immediate right to cure within five (5) minutes of receipt for idling vehicles and equipment, twelve (12) hour period of receipt for moving cranes and twenty four (24) hour of receipt in which to bring the equipment not retrofitted into compliance or remove it from the Project. The Contractor or Construction Manager failure to comply with

these provisions shall be reason to withhold payment or terminate the contract as prescribed within the contract documents.

Any costs associated with these provisions shall be included in the general cost of the contract. In addition, there shall be no time granted to the Contractor or Construction Manager for compliance with these provisions. The Contractor or Construction Manager compliance with these provisions and any associated regulations shall not be grounds for a Change Order.

The Contractor or Construction Manager may request a waiver to all or portions of these provisions with written justification to the University Project Manager as to why the Contractor, Construction Manager or Subcontractor cannot comply with these provisions. A waiver, to be effective, must be granted in writing by the University.

B. Equipment and Vehicles

Contractor shall review construction vehicle and equipment exhaust outlets in relationship to existing plant material with Owner. If exhaust is directed at existing plant material the placement of the equipment shall be altered or the exhaust outlet shall be altered by use of flexible exhaust pipe or other approved method. All efforts shall be made to protect plant material from direct exhaust outlets.

Engine braking or exhaust braking shall be prohibited on campus roads and surrounding state roads leading to any campus.

C. Protection of Land Resources:

Prior to construction, identify all land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without permission from the Resident Engineer. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.

Work Area Limits: Include within the Site Logistics Plan and prior to any construction, mark the areas that require work to be performed under this contract. Mark or fence isolated areas within the general work area that are to be saved and protected. Protect monuments, works of art, and markers before construction operations begin. Convey to all personnel the purpose of marking and protecting all necessary objects.

Protection of Landscape: Protect trees, shrubs, vines, grasses, land forms, and other landscape features shown on the drawings to be preserved by marking, fencing, or using any other approved techniques.

- a. Box and protect from damage existing trees and shrubs to remain on the construction site.
- b. Immediately repair all damage to existing trees and shrubs by trimming, cleaning, and painting with antiseptic tree paint.
- c. Do not store building materials or perform construction activities closer to existing trees or shrubs than the farthest extension of their limbs.

D. Protection of Water Resources:

Sedimentation and Erosion Control (E&S) measures are required for all University projects involving earthwork to prevent the movement of sediments off construction sites into nearby water bodies by implementing sedimentation and erosion controls. For projects greater than 1 acres of land disturbance, the University obtains a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

Contractor must adhere to all requirements of any permit(s) under this project, including but not limited to General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Construction GP) Notable requirements include:

- a. Follow the erosion control plan and stormwater pollution prevention plan (if applicable) contained in the project documents;
- b. Inspect E&S per the requirements in the construction GP;
- c. Perform turbidity sampling per the requirements in the construction GP and submit the results to the CTDEEP (if applicable);
- d. Minimize dust;
- e. Maintain all controls such as silt fence, anti-tracking pads, and catch basin silt sacks;
- f. The dumping of liquids in the storm sewer is prohibited.
- g. All post-construction stormwater structures shall be cleaned of sediments and any remaining silt fence and silt sacks shall be removed upon stabilization of the project's site soils.

E. Waste Disposal:

Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment.

- a. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule. Transport all solid waste off Government property and dispose of waste in compliance with Federal, State, and local requirements.
- b. Store chemical waste away from the work areas in corrosion resistant containers and dispose of waste in accordance with Federal, State, and local regulations.
- c. Handle discarded materials other than those included in the solid waste category as directed by the Resident Engineer.

F. Protection of Air Resources:

Keep construction activities under surveillance, management, and control to minimize pollution of air resources. Burning is not permitted on the job site. Keep activities, equipment, processes, and work operated or performed, in strict accordance with the State of Connecticut Department of Energy and Environmental Protection (CTDEEP) air regulations and Federal emission and performance laws and standards. Maintain ambient air quality standards set by the Environmental Protection Agency, for those construction operations and activities specified.

- a. Control of Particulate Matter and Visible Emissions
(Regulations of Connecticut State Agencies (RCSA) § 22a-174-18):
- b. Control dust particles, aerosols, and gaseous by-products from all construction activities, processing, and preparation of materials (such as from asphaltic batch plants) at all times, including weekends, holidays, and hours when work is not in progress.

- c. Maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause a hazard or a nuisance. Spraying chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators, or other methods are permitted to control particulates in the work area.
- d. Control of Organic Compound Emissions (RCSA § 22a-174-20): Control organic compound emissions from equipment to applicable State allowable limits.
- e. Control of Odors (RCSA § 22a-174-23): Control odors of construction activities and prevent obnoxious odors from occurring.

G. Reduction of Noise:

Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day or week as directed by the Resident Engineer. Maintain noise-produced work at or below the decibel levels and within the time periods specified.

- H. Perform construction activities involving repetitive, high-level impact noise only between 8:00 a.m. and 8:00 p.m unless otherwise permitted by local ordinance or the Owner. Repetitive impact noise on the property shall not exceed the following dB limitations:

<u>Time Duration of Impact Noise</u>	<u>Sound Level in dB</u>
More than 12 minutes in any hour	70
Less than 30 seconds of any hour	85
Less than three minutes of any hour	80
Less than 12 minutes of any hour	75

Provide sound-deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this contract, consisting of, but not limited to, the following:

- d. Use shields or other physical barriers to restrict noise transmission.
- e. Provide soundproof housings or enclosures for noise-producing machinery.
- f. Use efficient silencers on equipment air intakes.
- g. Use efficient intake and exhaust mufflers on internal combustion engines that are maintained so equipment performs below noise levels specified.
- h. Line hoppers and storage bins with sound deadening material.
- i. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.

3. Measure sound level for noise exposure due to the construction at least once every five successive days while work is being performed above 75 dB(A) noise level. Measure noise exposure at the property line or 15 m (50 feet) from the noise source, whichever is greater. Measure the sound levels on the A weighing network of a General Purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, take measurements at 900 to 1800 mm (three to six feet) in front of any building face. Submit the recorded information to the Resident Engineer noting any problems and the alternatives for mitigating actions.

Final Clean-up: On completion of project and after removal of all debris, rubbish, and temporary construction, Contractor shall leave the construction area in a clean condition satisfactory to Owner and Engineer requirements. Cleaning shall include off the station disposal of all items and materials not required to be salvaged, all debris and rubbish resulting from demolition and new work operations and removal of all "call before you dig markings" placed on behalf of the project, regardless if the Contractor marked or called to mark the location.

END OF SECTION 01-5719

SECTION 01-6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Division 01 Section "Allowances" for products selected under an allowance.
 - 2. Division 01 Section "Alternates" for products selected under an alternate.
 - 3. Division 01 Section "Substitution Procedures" for requests for substitutions.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in Division One Section "Substitutions".
 - 2. Architect's Action: Review action shall follow all requirements specified in Division One Sections on "Substitutions" and "Submittals".
 - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations and not by previous Project experience. Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where Specifications name only a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Semi proprietary Specification Requirements: Where Specifications name three or more products or manufacturers, provide one of the products indicated. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Where products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 3. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
 5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - a. Manufacture's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
 6. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics

that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

7. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
9. Allowances: Refer to individual Specification Sections and provisions in Section 01-2100, Allowances, for allowances that control product selection, and for procedures required for processing such selections.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
 1. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Proposed changes are in keeping with the intent of Contract Documents.
 3. The request is timely, fully documented and properly submitted.
 4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
 5. The specified product or method of construction cannot be provided within the Contract Time.
 - a. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly, coordinate activities properly or to adhere with the sequence of work within the contract schedule.
 6. The specified product or method of construction cannot receive necessary approval by a governing authority.
 7. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deduction offsetting responsibilities the Owner may be required to bear.
 - a. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.

8. The specified product or method of construction cannot be provided in a manner that is compatible with other material, and where the Contractor certifies that the comparable product will overcome the incompatibility.
 9. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed comparable product can be coordinated.
 10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed comparable product provide the required warranty.
 11. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 12. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 13. Samples, if requested.
- B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid submittal, nor does it constitute approval.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.
1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01-6000

SECTION 01-7300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.

- B. Related Requirements:

1. Division 01 Section "Summary" for limits on use of Project site.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
4. Division 02 Section "Selective Structure Demolition" for demolition and removal of selected portions of the building.
5. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- B. Cutting and Patching Plan: Submit plan describing procedures at least fourteen (14) days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying and GIS services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner

that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades for review of plan. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in sustainable design requirement Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where

indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. And coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
1. Verification of measurements and locations shall be performed by a licensed surveyor who will collect the GIS coordinates that will be included in the final as-built documentation.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Owner. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Owner before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Document slope and locations of material and product below and above ground on all utilities. Such documentation shall be performed by a licensed surveyor who will collect the GIS coordinates that will be included in the final as-built documentation.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels or create high vibrations.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect as approved by the Architect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: 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.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend

preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
 - 5. Follow all Owner sustainable design requirements, not limited to LEED.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove of non-hazardous liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Construction Waste Management and Disposal.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01-7300

SECTION 01-7300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.

- B. Related Requirements:

1. Division 01 Section "Summary" for limits on use of Project site.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
4. Division 02 Section "Selective Structure Demolition" for demolition and removal of selected portions of the building.
5. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- B. Cutting and Patching Plan: Submit plan describing procedures at least fourteen (14) days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying and GIS services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner

that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades for review of plan. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in sustainable design requirement Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where

indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. And coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
1. Verification of measurements and locations shall be performed by a licensed surveyor who will collect the GIS coordinates that will be included in the final as-built documentation.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Owner. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Owner before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Document slope and locations of material and product below and above ground on all utilities. Such documentation shall be performed by a licensed surveyor who will collect the GIS coordinates that will be included in the final as-built documentation.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels or create high vibrations.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect as approved by the Architect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: 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.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend

preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
 - 5. Follow all Owner sustainable design requirements, not limited to LEED.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove of non-hazardous liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Construction Waste Management and Disposal.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01-7300

SECTION 01-7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warrantee Requirements
4. Submittal of Warranties.
5. Revenue Services Requirements
6. Final cleaning.
7. Repair of the Work.

- B. Related Requirements:

1. Division 01 Section "Photographic Documentation" for submitting final completion construction photographic documentation.
2. Division 01 Section "Execution" for progress cleaning of Project site.
3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
5. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel
6. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Review list of Owner requirements as conditions for meeting substantial completion. List is located at the following weblink: <http://updc.uconn.edu>

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
 - 1. Contractor's punch list shall be complete and shall cover the entire contract scope, unless previously identified within the contract documents that the project will be completed in phases.
 - 2. Upon receipt of Contractor's punch list of incomplete items, depending on the amount of remaining finish work, Architect may begin generating their own punch list. If the Architect determines that the Contractor's punch list is significantly deficient or contains a significant amount of unfinished work to meet substantial completion, Architect will formally notify the Contractor accordingly with no further action. Contractor shall continue to complete unfinished work until the Architect determines that Substantial Completion has been met.
 - 3. Any time and expenses incurred by the Architect to re-review completeness of Contractor's work to determine Substantial Completion has been met, shall be at the Contractor's expense,
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 14 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including but not limited to project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property coordinate mapping surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Divisions 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Divisions 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Labels must clearly identify what the maintenance material is for what piece equipment, with manufacturer's name and model number where applicable.

- a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner signature for receipt of submittals.
 5. Submit a statement that all air flush-out procedures were performed. Include process used and dates when flush-out was started and completed. Filtration media must be replaced after flush-out process was completed. If procedure was performed prior to dust creating work was complete, Contractor must perform an additional process.
 6. Submit test/adjust/balance records.
 7. Submit systems curves for air and water systems,
 8. Submit sustainable design submittals required in Division 01 sustainable design requirements Section and in individual Division 02 through 33 Sections.
 9. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 14 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform air flush-out procedures and replace filtration media after flush-out of the building's systems. Replace all filters.
 5. Perform adjustments and balancing of systems, provide reports
 6. Perform preventive maintenance on equipment and systems used prior to Substantial Completion, regardless if the equipment was existing. Advise Owner of changeover in heat and other utilities.
 7. Conduct inspection and walkthrough with local authorities having jurisdiction.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Remove temporary fencing.
 - a. Power wash all Owner supplied scrim. Let dry and neatly roll/fold scrim and deliver to Owner's designated storage location.
 10. Complete final cleaning requirements, including touchup painting.
 11. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 12. Provide as-built documentation of changes made in the field or in cases where no field changes occurred, certified statement from the trade contractor documenting such.
 - a. Contractor shall remain responsible for costs that may occur should existing conditions be found that are not reflected within the as-built documents provided for closeout.
 13. All surveys and survey information as outlined within quality control of Division One.
 - a. Should the Contractor fail during the course of the work to have licensed survey of required coordinate points and document information outlined within the contract documents, Owner shall have such work performed by others, at the Contractors expense.
 - 14.

- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 14 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings as specified in Division 01 Section "Demonstration and Training."
 2. Submit a final Application for Payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 3. Submit an updated final Application for Payment statement, accounting for final additional charges to the Contract Sum.
 4. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 5. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 6. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
 7. Submit consent of surety to final payment.
 8. Submit a final liquidated damages settlement statement.
 9. Any attic stock that has been outlined to be provided, shall be acknowledged as received by the Owner. Copy of transmittal listing the material/parts and quantities with Owner signature of acceptance.
 10. Pest control inspections and warranty
 11. Construction progress photographs
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 14 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when all the Work identified in previous inspections as incomplete is completed or corrected.

2. Upon completion of reinspection, the Owner with advice of the Architect 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.
3. If necessary, reinspection will be repeated at the Contractor's expense.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
4. Submit list of incomplete items in the following format or format approved by Owner:
 - a. PDF electronic file. Architect will return annotated file.

1.9 WARRANTY RESPONSE 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 Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner 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 Owner can enforce such other duties, obligations, rights, or remedies. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

- E. The Owner 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.

1.10 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. All work shall be covered by the standard one (1) year guarantee as set forth in the General Conditions. The Contractor with his subcontractors shall visit the project site at 11 months into the guarantee period to determine with the Owner the scope of any required guarantee work. The Contractor shall contact the Owner and Architect for scheduling so that the Owner and Architect can attend.
- C. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- D. Specific requirements for warranties for the Work and products and installations that are specified to be warrantee are included in the individual Sections of Divisions 2 through 33.
- E. 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.
- F. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 - 1. Organize based on the format outlined within the Owners closeout check list. Provide two hardcopies complete draft for AE reviews. Submit one final electronic document as final
 - 2. Address to: Office of Planning, Architectural and Engineering Services, University of Connecticut Box Unit-3038, Storrs, Connecticut 06269-3038
 - 3. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 4. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name and number, and name of Contractor.
 - 5. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document and contact information for each warrantee including extended warrantees Define distinct warrantee coverage and contact information for each warrantee.
 - 6. All required guarantees/warranties will be by the respective company made out to the Owner.

7. All guarantees/warranties supplied by subcontractors or manufacturers shall be countersigned by the Contractor.
- 8.

G. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.11 REVENUE SERVICES REQUIREMENTS

- A. Upon receipt of the Certificate of Substantial Completion, the Contractor shall submit the following information required by the Connecticut Department of Revenue Services.
1. The identity and addresses of all subcontractors performing work on the project.
 2. The Connecticut tax registration numbers of the Contractor and all subcontractors.
 3. The Federal Social Security account numbers, or Federal Employer Identification numbers, or both, if applicable, for the General Contractor and all subcontractors.
 4. Include a copy of the transmittal sent to the Department of Revenue on project contacts information that is to be included within the closeout manual.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

- a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Clean catch basins affected by construction activities.
 - c. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - d. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - e. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - f. Remove snow and ice to provide safe access to building.
 - g. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - j. Remove labels that are not permanent.
 - k. Clean and polish tile and other glazed surfaces affected by construction activity.
 - l. Clean and polish finish hardware affected by construction activity.
 - m. Clean exposed surfaces of diffusers, registers, and grills affected by construction activity.
 - n. Replace all filters of equipment and systems used during construction.
 - o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency that were affected by construction activity.
 - p. Leave Project clean and ready for occupancy.
 - q. Remove all sediment control for catch basins and fully clean out catch basin.
- C. Pest Control: Comply with pest control requirements in Division 01 Section "Temporary Facilities and Controls." Prepare written report.
- D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- E. Compliance: 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 Owner'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.
1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

3.3 CERTIFICATIONS

- A. The Contractor, at completion of construction, shall provide to the Owner on company letter head a "Certificate of Substantial Compliance" bearing original signatures of an officer of the company reflecting the following:
1. Address to: University of Connecticut c/o University Master Planner and Chief Architect, Planning Architectural and Engineering Services, 31 LeDoyt Road, Storrs, CT 06269-3038;
 2. Identify the Project number and Project Name;
 3. Project's Description of work: As represented within Division 01 Section 1000 Summary.
 4. Certification Statement:

I, the undersigned, am the official authorized agent to execute contracts on behalf of (insert official legal name of contracting Company). I certify that (insert official legal name of contracting Company) pursuant to the statutory and contractual requirements applied to this Project, 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 University of Connecticut. Minor deviations and special stipulations are noted below (if any, list)".

The above statement is Sworn as True to the best of my knowledge and belief, subject to the penalties of false statement.

5. Print Name of the Authorized Agent:
6. Provide signature of the Authorized Agent:
7. Date:
8. Subscribed and acknowledged before me this day of , 20 .
9. Notary Seal and signature.

- B. The Contractor, at completion of construction, shall provide to the Owner on company letter head bearing original signatures of an officer of the company certifying that they will maintain required insurance coverage. Such document shall reflect the following:
 - 1. Address to: University of Connecticut c/o University Master Planner and Chief Architect, Planning Architectural and Engineering Services, 31 LeDoyt Road, Storrs, CT 06269-3038;
 - 2. Identify the Project number and Project Name;
 - 3. Project’s Description of work: As represented within Division 01 Section 1000 Summary.
 - 4. Certification Statement:

I, the undersigned, am the official authorized agent to execute contracts on behalf of (insert official legal name of contracting Company). I certify that (insert official legal name of contracting Company) pursuant to the statutory and contractual requirements applied to this Project, shall maintain the contractually required insurance coverage and limits for a period of no less than three (3) years after final payment and final completion of the work.

The above statement is Sworn as True to the best of my knowledge and belief, subject to the penalties of false statement.

- 5. Print Name of the Authorized Agent
- 6. Provide Signature of the Authorized Agent
- 7. Date:
- 8. Subscribed and acknowledged before me this day of , 20 .
- 9. Notary Seal and signature.

- C. Prior to Owners’ approval and acceptance, mechanical and electrical systems shall be fully commissioned by the Contractor. and Commissioning Agent (when applicable) and is efficiently operational.

PART 4 - SCHEDULES

4.1 SCHEDULE OF WARRANTIES

- A. Schedule: Provide warranties and bonds on products and installations as specified in the following Sections:
 - 1. Section 07920 – Joint Sealants Joint Sealants
 - 2. Section 08520 – Aluminum Windows Aluminum Windows
 - 3. Section 08800 – Glass and Glazing Insulating Glass

END OF SECTION 01-7700

SECTION 01-7823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency procedures and contacts.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Product maintenance manuals.
 - 5. Systems and equipment maintenance and warranty manuals.
- B. Related Requirements:
 - 1. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
 - 2. Divisions 02 through 33 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 - 2. One paper copy, separately bound. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.
- C. Initial Manual Submittal: Submit two draft copies of the manual at least 30 days before commencing demonstration and training. Architect and Owner will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
 - 1. Correct or revise the manual to comply with Architect's and Owner's comments. Submit copy of corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
 - 1. Table of contents.
 - 2. List of all Subcontractors and Suppliers – name, address, contact and federal identification numbers.
 - 3. List of all drawings and their number and title, including all additions and deletions during the course of the project.
 - 4. List of specification section numbers and title.
 - 5. List all redlined as-built documents.
 - 6. List of systems.
 - 7. List of equipment.
 - 8.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for the emergency, operation, and maintenance manual.
- E. Updated List of Subcontractors and Suppliers: List all contractors, subcontractors, sub-tier subcontractors and suppliers who worked on or supplied material to the Project. Include name of the firm, firm's address, firm's contact person, contact phone number, Connecticut registration number and Federal employer identification number (FEIN),
- F. Identification: In the documentation directory and in the operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Project Number
 - 4. Name and address of Owner.
 - 5. Date of submittal.
 - 6. Name and contact information for Contractor.
 - 7. Name and contact information for Architect.
 - 8. Name and contact information for Commissioning Authority, (if applicable).
 - 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, scans shall be in color at 600dpi with searchable capabilities.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
 - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
 - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 - 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
 - 4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
 - 5. Operations and Maintenance Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY PROCEDURES TO BE INCLUDED IN O&M MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Gas leak.
 - 4. Water leak.
 - 5. Power failure.
 - 6. Water outage.
 - 7. System, subsystem, or equipment failure.
 - 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 - 1. Instructions on stopping.
 - 2. Shutdown instructions for each type of emergency.
 - 3. Operating instructions for conditions outside normal operating limits.
 - 4. Required sequences for electric or electronic systems.
 - 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 - 2. Performance and design criteria if Contractor has delegated design responsibility.
 - 3. Operating standards.
 - 4. Operating procedures.
 - 5. Operating logs.
 - 6. Wiring diagrams.
 - 7. Control diagrams.
 - 8. Piped system diagrams.
 - 9. Precautions against improper use.
 - 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Project record documents shall only be used as a supplement to the manufacturers documentation as part of operation and maintenance manuals.
 - 2. Comply with requirements of newly prepared record Drawings in Division 01 Section "Project Record Documents."
- G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01-7823

SECTION 01-7839 - PROJECT RECORDING DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting changes to the project contract documents, including the following:

- 1. Redlined Drawings.
- 2. Redlined Specifications.
- 3. Redlined Product Data.
- 4. Miscellaneous redlined submittals.
- 5. Measured As-built Drawings

- B. Related Requirements:

- 1. Division 01 Section "Closeout Procedures" for general closeout procedures.
- 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- 3. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

- A. Redlined Drawings: Comply with the following:

- 1. Number of Copies: Submit copies of Redlined Drawings as follows:

- a. Initial Submittal:

- 1) Submit one (1) paper-copy set of marked-up redlined prints.
- 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

- b. Final Submittal:

- 1) Submit one (1) paper-copy set of marked-up redlined prints.
- 2) Print each drawing, whether or not changes and additional information were recorded.

- B. Redlined Specifications: Submit one paper copy of Project's Specifications, including addenda and contract modifications.
- C. Redlined Product Data: Submit one paper copy of each submittal.
 - 1. Redlined Product Data is required as part of operation and maintenance manuals. Submit duplicate marked-up Product Data as a component of the manuals.
- D. Miscellaneous Redlined Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy of each submittal.
- E. Reports: Submit written reports indicating items incorporated into project redlined documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORDING CONTRACT DRAWING FIELD CHANGES

- A. Field Set Prints Upon receipt of a conformance set of contract documents from the Architect, maintain one set of marked-up redlined paper copies of the Conformance Set Drawings and Conformance Set Specifications as the Field Set. Changes occurring during construction shall be documented in a single paper Field Set maintained in good order at the project site.
 - 1. Preparation: Mark field set prints to show where installation varies from that shown originally. Require individual or entity who document the change, whether installer, subcontractor, or similar entity, to provide information for corresponding marked-up redlined set of prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record information in an acceptable drawing technique.
 - c. Record data as soon as possible but not later than one (1) week after the change has been completed.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference redlined prints to corresponding archive photographic documentation.
 - 2. Content: Types of items requiring redlined marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.

- g. Equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Diagrammatic flow changes and routings
 - k. Changes made by Change Order or Construction Change Directive.
 - l. Changes made following Architect's ASIs, PRs, and Bulletins.
 - m. Details not on the original Contract Drawings.
 - n. Changes made by coordination drawings
 - o. Updates to any schedules including but not limited to: equipment schedules, lighting schedules, hardware schedules, security controls schedules,
 - p. Field conditions for variable and concealed conditions.
 - q. Record information on the Work that is shown only schematically.
3. Mark the Field Set Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of redlined prints.
 4. Mark field sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location, not limited to utilities.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each redline drawing; include the designation "PROJECT REDLINE DRAWING" in a prominent location.
1. Redline Prints: Organize redline prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect and or Construction Manager.
 - e. Name of Contractor.

2.2 REDLINE SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether product data has been submitted in operation and maintenance manuals instead of submitted as redlined Product Data.

5. Note related Change Orders and record Drawings where applicable.

B. Format: Submit Redline Specifications as paper copy.

2.3 REDLINED PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders] and Change Management Documents provided by the Architect where applicable.

B. Format: Submit redlined Product Data as paper copy.

2.4 AS-BUILT SURVEY RECORDING DOCUMENTATION FOR ABOVEGROUND AND UNDERGROUND UTILITIES.

A. Preparation: Provide field survey through the services of a surveyor licensed in the State of Connecticut of each newly installed utility and exposed existing utility while performing the work.

1. Maintain one complete electronic As-Built Set of actual field locations of newly installed utilities and exposed existing utility. Such As-Built Set is to be kept current and must be delivered to the Owner both in electronic format (Adobe Pro PDF) and hard print as a condition of reaching completion and final payment on the Project.
2. Updates shall be continuous with progress recorded within one (1) week of the installation. Upon request Contractor shall provide hard print of surveys documented to date of newly installed utilities with all information as required. Such submission shall be a condition for approving progress payments.

B. Format: As-Built Set shall be submitted in AutoCAD 2014 and in a format as follows:

1. All information added to the base AutoCAD drawing shall be on layers starting with AB-XXXX (example, as built gas shall be on a drawing layer titled AB-GAS)
2. Surveyor shall utilize survey equipment able to locate infrastructure to a Utility Quality Level A as defined in the ASCE 38-02 Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.

C. Product Data: Utility measuring data to be provided shall be limited to the following data points:

1. Sanitary Sewer
 - a. Manhole: Horizontal Location, Rim and Invert Elevation
 - b. Pump Stations: Horizontal Location, Rim and Invert Elevation
 - c. Cleanout: Horizontal Location, Rim and Invert Elevation

- d. Gravity Pipe: Size, Material, Elevation at all changes in direction vertical or horizontal
 - e. Force Main: Size, Material, Elevation at all changes in direction vertical or horizontal and at every 50'.
 - f. Building Invert: Size, Material, Horizontal Location and Invert at face of building
2. Storm Sewer
 - a. Inlet/Manhole: Horizontal Location, Rim and Invert Elevation
 - b. Cleanout: Horizontal Location, Rim and Invert Elevation
 - c. Gravity Pipe: Size, Material, Elevation at all changes in direction vertical or horizontal
 - d. Force Main: Size, Material, Elevation at all changes in direction vertical or horizontal and at every 50'.
 - e. Building Invert: Size, Material, Horizontal Location and Invert at face of building.
3. Water/Fire & Reclaimed Water
 - a. Valves: Horizontal Location, Rim and Top of Valve (pipe) Elevation
 - b. Hydrants: Horizontal Location, Base Elevation
 - c. Piping: Size, Material, Elevation (Top of Pipe) at all changes in direction vertical or horizontal and at every 50'.
 - d. Building Lateral: Size, Material, Horizontal Location and Elevation (Top of Pipe) at face of building.
4. Steam, Condensate (All types) & Chilled Water
 - a. Valves: Type, Horizontal Location, Rim and Top of Valve (pipe) Elevation
 - b. Vaults: Type, Horizontal Location, Rim & Bottom Structure Elevation, Location and Elevation of Outer Edges of Structure (Corners), Elevation of piping at face of vault (Top of Carrier Pipe)
 - c. Piping: Type, Size, Material, Elevation (Top of Carrier Pipe) at all changes in direction vertical or horizontal and at every 50'.
 - d. Building Lateral: Type, Size, Material, Horizontal Location and Elevation (Top of Carrier Pipe) at face of building.
 - e. Vent Structures: Horizontal Location, Rim and Top of Pipe Elevation
 - f. Vent Piping: Size, Material, Elevation (Top of Pipe) at all changes in direction vertical or horizontal.
5. Low Voltage & Medium Voltage Electrical (Including Site Lighting / BluePhones)
 - a. Vaults/Manholes: Type, Horizontal Location, Rim & Bottom Structure Elevation, Location and Elevation of Outer Edges of Structure (Corners), Elevation and width of concrete and/or conduit at face of vault (Top of Concrete/Conduit(s))
 - b. Ductbank/Conduits: Type, Size, Quantity, Material, Elevation (Top of Concrete for encased in concrete / Conduit for direct bury) at all changes in direction vertical or horizontal and at every 50'.
 - c. Building Lateral: Type, Size, Quantity, Material, Elevation (Top of Concrete for encased in concrete / Conduit for direct bury) at face of building.
 - d. Site Lighting/BluePhone: Type, Horizontal Location, Elevation of concrete base.
6. Gas
 - a. Valves: Horizontal Location, Rim and Top of Valve (pipe) Elevation

- b. Piping: Size, Material, Elevation (Top of Pipe) at all changes in direction vertical or horizontal and at every 50'.
- c. Building Lateral: Size, Material, Horizontal Location and Elevation (Top of Pipe) at face of building.

2.5 MISCELLANEOUS CHANGE RECORDING SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as paper copy.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project reline document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Reline Documents and Samples: Store redlined documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project relined documents for construction purposes. Maintain documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's and Owner Representative's reference during normal working hours.

END OF SECTION 01-7839

SECTION 01-7900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
- B. Related Requirements:
 - 1. Divisions 02 through 33 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

- C. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
 - 1. Inspect and discuss locations and other facilities required for instruction.
 - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 - 3. Review required content of instruction.
 - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

1.6 PRODUCTS

1.7 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:

- a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project record documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
- a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
- a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
- a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
- a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
- a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning

- e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
- a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 2 - EXECUTION

2.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Division 01 Section "Operations and Maintenance Data."
- B. Set up instructional equipment at instruction location.

2.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner through Owners Representative with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 017900

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements and limitations for cutting and patching of Work.
- B. Products and installation for patching and extending Work.
- C. Transition and adjustments.
- D. Repair of damaged surfaces, finishes, and cleaning.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification Sections apply to this Section.
- B. Section 02 41 19 – Selective Demolition for Remodeling.

1.3 GENERAL

- A. It is the responsibility of the Contractor to provide chases, channels or openings where needed to complete the work.
- B. The Contractor shall install sleeves, inserts, and hangers furnished by the trades.
- C. After installing work into openings, channels, and/or chases, the Contractor shall close same. If finishes are to be restored, the new work shall match the original and shall be done by the trade customarily responsible for the particular kind of work. If access is required to concealed work for maintenance or inspection, an appropriate access panel shall be installed as a part of the work.

1.4 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
- B. Include in request:
 - 1. Identification of Project.
 - 2. Location and description of affected Work and date and time work will be executed
 - 3. Necessity for cutting or alteration.
 - 4. Description of proposed Work and Products to be used.
 - 5. Alternatives to cutting and patching.
 - 6. Effect on work of Owner or separate contractor.
 - 7. Written permission of affected separate contractor.

PART 2 PRODUCTS

2.1 NEW MATERIALS

- A. As specified in product sections or match existing Products and work for patching and extending work.
- B. Provide appropriate access panels, approved by the Architect, in work where new concealed work must be accessed for periodic inspection or maintenance after construction.

2.2 EXISTING PRODUCTS

- A. Determine type and quality by inspecting and testing Products where necessary, referring to existing Work as a standard. Patching materials shall match exact.

PART 3 EXECUTION

3.1 PREPARATION

- A. Verify that areas are ready for installation of new Work; beginning of restoration Work means acceptance of existing conditions.
- B. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- C. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- D. Remove debris and abandoned items from area and from concealed spaces.
- E. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.
- F. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

3.2 PROCEDURES

- A. Execute cutting, fitting, and patching to complete Work, and to fit parts together, to integrate with other Work, to uncover Work, to install or correct ill-timed Work, to remove and replace defective and non-conforming Work, to remove samples of installed Work for testing and to provide openings in elements of Work for penetrations of mechanical and electrical Work.
- B. Execute work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- C. Cut masonry and concrete materials using masonry saw or core drill.
- D. Restore Work with new Products in accordance with requirements of Contract Documents or to match adjacent products.
- E. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- F. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

- G. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections. Where a change of plane of 1/4 inch or more occurs, request instructions from Architect.
- H. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance. When finish cannot be matched, refinish entire surface to nearest intersections.
- I. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Architect for review.
- J. Identify any hazardous substance or condition exposed during the Work to the Owner for decision or remedy.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Removal of designated building equipment and fixtures.
- B. Removal of designated construction.
- C. Disposal of materials and storage of removed materials. Refer to items as indicated in the drawings.
- D. Identification of utilities.

1.2 RELATED SECTIONS

- A. Section 01 73 29 – Cutting and Patching

1.3 SUBMITTALS FOR CLOSEOUT

- A. Project Record Documents: Accurately record actual locations of capped utilities and subsurface obstructions.

1.4 REGULATORY REQUIREMENTS

- A. Conform to CT State Building Code for demolition work, dust control, products requiring electrical disconnection and re-connection.
- B. Obtain required permits from authorities.
- C. Do not close or obstruct egress width to any building or site exit.
- D. Do not disable or disrupt building fire or life safety systems without prior written notice to Owner.
- E. Conform to procedures applicable when hazardous or contaminated materials are discovered.

1.5 SCHEDULING

- A. Schedule Work to coincide with new construction.
- B. Describe demolition removal procedures and schedule in project kick-off meeting.
- C. Perform noisy, malodorous, and dusty work during hours designated by the Owner.

1.6 PROJECT CONDITIONS

- A. Conduct demolition to minimize interference with adjacent and occupied building areas.
- B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.

PART 2 PRODUCTS

2.1 Not Used

PART 3 EXECUTION

3.1 PREPARATION

- A. Provide, erect, and maintain temporary barriers and insulated partitions at locations necessary to separate the work area from existing occupied spaces.
- B. Erect and maintain weatherproof closures for exterior openings.
- C. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy.
- D. Protect existing materials, utilities, equipment and other construction which are not to be demolished.
- E. Prevent movement of structure; provide engineered bracing and shoring as necessary.
- F. Notify affected utility companies before starting work and comply with their requirements.
- G. Mark location and termination of utilities.
- H. Provide appropriate temporary signage including signage for exit or building egress.

3.2 DEMOLITION

- A. Disconnect, remove, cap and identify designated utilities within demolition areas.
- B. Demolish in an orderly and careful manner. Protect existing supporting structural members other building components not scheduled to be removed.
- C. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
- D. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
- E. Remove temporary Work.

END OF SECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Concrete masonry units.
2. Mortar and grout.
3. Steel reinforcing bars.
4. Masonry joint reinforcement.
5. Ties and anchors.
6. Embedded flashing.
7. Miscellaneous masonry accessories.
8. Block core insulation.

1.3 RELATED SECTIONS:

- A. Section 08 11 13 – Hollow Metal Doors and Frames

1.4 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.5 PERFORMANCE REQUIREMENTS

- A. Provide unit masonry that develops indicated net-area compressive strengths at 28 days.
 1. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

1.6 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For the following:
 1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
 3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
- C. Samples for Verification: For each type and color of the following:
 1. Pigmented and colored-aggregate CMU of each type and color specified.
 2. Pigmented and colored-aggregate mortar. Make Samples using same sand and mortar ingredients to be used on Project.

3. Weep holes and vents.
4. Accessories embedded in masonry.

1.7 INFORMATIONAL SUBMITTALS

- A. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.
 1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Architect and approved in writing.
- B. Qualification Data: For testing agency and in accordance with Section 01 45 00.
- C. Material Certificates: For each type and size of the following:
 1. Masonry units.
 2. Include material test reports substantiating compliance with requirements.
 3. Include test report for efflorescence according to ASTM C 67.
 4. Cementitious materials. Include brand, type, and name of manufacturer.
 5. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
 6. Grout mixes. Include description of type and proportions of ingredients.
 7. Reinforcing bars.
 8. Joint reinforcement.
 9. Anchors, ties, and metal accessories.
- D. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
 1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- E. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
- F. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.8 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.
- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.
- D. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.
- C. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.
- D. Store mortar mix in accordance with manufacturer's printed instructions to prevent contamination by extraneous chemicals.
- E. Provide preblended mortar mix manufacturer's dispensing equipment for storage and controlled dispensing of the dry preblended mortar mixture.
- F. A digital printout displaying the proper proportioning per batch must be kept as permanent record and produced if requested.
- G. Mortar shall be delivered to jobsite in bulk sacks weighting approximately 3000 pounds. Preblended mortar shall be set on pallets and sufficiently covered to keep dry.
- H. An OSHA approved dispensing silo shall be used in accordance with the manufacturer's requirements.
- I. A batch type mixer shall be used per ASTM C 270, 6.3.
- J. Use of ready mix mortar (ASTM C 1142) is **prohibited**.

1.10 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
 - 2. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 2. Protect sills, ledges, and projections from mortar droppings.
 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.
- B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 2. Provide square-edged units for first course of outside corners, unless otherwise indicated.
 3. Provide bullnose units for outside corners above first course, unless otherwise indicated.
- B. CMUs: Standard ASTM C 90.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3000 psi.
 2. Density Classification: Normal weight.
 3. Size (Width): Provide widths as indicated in the Drawings. CMUs shall be manufactured to dimensions 3/8 inch less than nominal dimensions.

4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.
5. Provide units with integral waterproofing.

2.3 MORTAR AND GROUT MATERIALS

- A. Custom Color Pre-blended Portland/Lime Cement/Sand Mortar Mix: Pre-blended cement contains portland cement meeting the requirements of ASTM C 150, Type S, hydrated lime conforming with ASTM C 270 for Type N and S masonry mortar, by "Spec Mix, Inc." or an approved equal.
 1. Location: Type "N"
 2. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
 3. Pigments shall not exceed 5 percent of masonry cement by weight.
- B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportions Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.
 1. Product: Spec Mix, Inc. or an approved equal.
 2. For reinforced mortar, use Type N.
 3. For mortar parge coats, use Type S.
 4. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls, for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type S.
 5. Mortar Cement: ASTM C 1329.
 6. Aggregate for Mortar: ASTM C 144; except for joints less than ¼ inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
 7. White Mortar Aggregates: Natural white sand or ground white stone.
 8. Colored-Mortar Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to provide required mortar color.
 9. Grout Fill: Provide pre-blended grout mix manufactured by SPEC Mix®. Provide grout at concrete masonry unit bond beams, lintels and reinforced cells with reinforcing bars and embedded plates.
 10. Compressive Strength: 2000 psi minimum at 28 days, as determined in accordance with the provisions of ASTM C 1019.
 11. Slump: 8 inches, minimum; 10 inches, maximum, taken in accordance with ASTM C 143.
 12. Use coarse grout when grout space is equal to or greater than 4 inches in both directions.
 13. Use fine grout when grout space is smaller than 4 inches in either direction.
 14. Do not use air-entrainment admixtures.
- C. Aggregate for Mortar: ASTM C 144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 2. For joints less than ¼ inch, use aggregate graded with 100 percent passing the No. 16 sieve.
 3. White-Mortar Aggregates: Natural white sand or crushed white stone.
 4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- D. Aggregate for Grout: ASTM C 404.
- E. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
1. Products: Subject to compliance with requirements, provide one of the following:
 2. Euclid Chemical Company (The); Accelguard 80.
 3. Grace Construction Products, W. R. Grace & Co. - Conn.; Morset.
 4. Sonneborn Products, BASF Aktiengesellschaft; Trimix-NCA.
- F. Water: Potable.

2.4 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.
- B. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.
1. Interior Walls: Hot-dip galvanized, carbon steel.
 2. Exterior Walls: Hot-dip galvanized, carbon steel.
 3. Wire Size for Side Rods: W 2.9 or 0.1875 inch diameter.
 4. Wire Size for Cross Rods: W 1.7 or 0.148 inch diameter.
 5. Spacing of Cross Rods, Tabs, and Cross Ties: 8" O.C. (each course).
 6. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.
- C. Masonry Joint Reinforcement for Single-Wythe Masonry: Truss type with single pair of side rods. Provide one piece "L" and "T" pieces for intersecting walls as indicated on drawings or as required.

2.5 TIES AND ANCHORS

- A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 153/A 153M, Class B-2 coating.
 2. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, with ASTM A 153/A 153M, Class B coating.
- B. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.

- C. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- diameter, hot-dip galvanized steel wire.
 2. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.187-inch- diameter, hot-dip galvanized steel wire.
- D. Partition Top anchors: 0.105-inch- thick metal plate with 3/8-inch- diameter metal rod 6 inches long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.

2.6 MISCELLANEOUS ANCHORS

- A. Anchor Bolts: L-shaped steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153/A 153M, Class C; of dimensions indicated.

2.7 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:
1. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.
 2. Fabricate continuous flashings in sections 96 inches long minimum, but not exceeding 12 feet. Provide splice plates at joints of formed, smooth metal flashing.
 3. Fabricate through-wall metal flashing embedded in masonry from stainless steel, with ribs at 3-inch intervals along length of flashing to provide an integral mortar bond.
 4. Products: Subject to compliance with requirements, provide one of the following:
 - a. Cheney Flashing Company; Cheney 3-Way Flashing (Sawtooth).
 - b. Keystone Flashing Company, Inc.; Keystone 3-Way Interlocking Thruwall Flashing.
 - c. Sandell Manufacturing Co., Inc.; Mechanically Keyed Flashing.
 5. Fabricate through-wall flashing with snaplock receiver on exterior face where indicated to receive counterflashing.
 6. Fabricate through-wall flashing with drip edge where indicated. Fabricate by extending flashing 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
 7. Fabricate metal drip edges for ribbed metal flashing from plain metal flashing of same metal as ribbed flashing and extending at least 3 inches into wall with hemmed inner edge to receive ribbed flashing and form a hooked seam. Form hem on upper surface of metal so that completed seam will shed water.
 8. Metal Drip Edge: Fabricate from stainless steel. Extend at least 3 inches into wall and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
- B. Flexible Flashing: Use the following unless otherwise indicated:
1. Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than 0.040 inch. Indicated

on drawings as "Self-Adhered Flashing Membrane" (S.A.F.M.) and/or "Self-Adhered Fabric Flashing (S.A.F.F.).

2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Advanced Building Products Inc.; Peel-N-Seal.
 - b. Carlisle Coatings & Waterproofing; CCW-705-TWF Thru-Wall Flashing.
 - c. Grace Construction Products, W. R. Grace & Co. - Conn.; Perm-A-Barrier Wall Flashing.
 - d. Hohmann & Barnard, Inc.; Textroflash.
 3. Accessories: Provide preformed corners, end dams, other special shapes, and seaming materials produced by flashing manufacturer.
- C. OPTION: All-Inclusive Flashing/Drainage System: Flashing at the brick shelf on top of foundation walls shall be an integral, all-inclusive system consisting of flashing, cavity wall drainage, drip edge, termination bar and weeps. Provide complete with adhesives, screws, end dams, prefabricated corners, etc.
1. Product: Subject to compliance with requirements, provide "Totalflash" cavity wall drainage system as manufactured by Mortar Net USA. Ltd.
- D. Solder and Sealants for Sheet Metal Flashings:
1. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer. Use 100% silicone sealant for drip edge laps.
- E. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene; Hohmann & Bernard, Inc. "NS".
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated; Hohmann & Bernard, Inc. "RS Series".
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Weep/Vent Products: Use the following unless otherwise indicated:
 1. Rectangular Plastic Weep/Vent Tubing with Wick & Screen: Clear butyrate, 3/8 by 1-1/2 by 3-1/2 inches long; Hohmann & Bernard, Inc. Model #342 W/S.
- E. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.
 1. Products: Subject to compliance with requirements, provide one of the following:

- a. Dayton Superior Corporation, Dur-O-Wal Division; D/A 810, D/A 812 or D/A 817.
 - b. Heckmann Building Products Inc.; No. 376 Rebar Positioner.
 - c. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
 - d. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.
- F. Bentonite waterproofing strips: Volclay WaterStop RX 101 1 inch by ¾ inch rectangular shaped expanding strip sodium Bentonite waterstop.
- G. Integral Water repellent: Integral water repellent shall be Grace Construction Products DRY-BLOCK or equal water repellent admixture for concrete masonry units AND mortar. Material shall achieve a Class E rating for normal weight CMU when evaluated for wind driven rain in accordance with ASTM E 514.
- H. Core-Fill Insulation: Fill block cores as scheduled below with expanded polystyrene core insulation prior to grouting cores solid. Block cores to receive vertical reinforcing shall NOT be insulated.
1. Products: KORFIL or equal ASTM C 578 Type 1 rigid cellular polystyrene thermal insulation inserts.
 2. Schedule: The following Rooms and areas shall receive core-fill insulation:
 - a. Switchgear Room – All walls
 - b. Fire Pump Room – All Walls
 - c. Urea Storage Tank Room – All Walls
 - d. Janitor Closet – All Walls
 - e. Fuel Storage Room – All Walls

2.9 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 2. Diedrich Technologies, Inc.
 3. EaCo Chem, Inc.
 4. ProSoCo, Inc.

2.10 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
1. Do not use calcium chloride in mortar or grout.
 2. Use portland cement-lime mortar unless otherwise indicated.
 3. For exterior masonry, use portland cement-lime mortar.

4. For reinforced masonry, use portland cement-lime mortar.
 5. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.
1. For reinforced masonry, use Type N.
 2. For mortar parge coats, use Type S.
 3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type S.
- D. Grout for Unit Masonry: Comply with ASTM C 476.
1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 2. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
 4. Verify that in-wall accessories are properly placed.
 5. Verify items provided by other sections of work are properly sized and located.
 6. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Thickness: Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.

- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 - 1. Mix units from several pallets or cubes as they are placed.
- F. Coordinate work with electrician to assure that all embedded electrical boxes and conduit are properly placed as masonry work proceeds.
- G. Install vertical reinforcements as indicated in the structural drawings. Tie and lap bars as directed by Engineer. Verify as work progresses that cores with vertical reinforcing DO NOT have core-fill insulation installed, remove insulation where appropriate.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

- 1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
- 2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
- 3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

- 1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
- 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
- 3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
- 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
- 5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
- 6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
- 7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond and bond pattern indicated on Drawings; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- G. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.
- H. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
 1. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches O.C. unless otherwise indicated.
 2. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Section 07 84 00 Firestopping.

3.5 MORTAR BEDDING, JOINTING AND GROUTING

- A. Lay CMU as follows:

1. Lay masonry units with core cells vertically aligned clear of mortar and unobstructed.
 2. Lay masonry units with face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 3. Lay masonry units with webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 4. Lay masonry units with webs fully bedded in mortar in grouted masonry, including starting courses.
 5. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
 6. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- B. Place mortar in masonry unit bed joints back 1/4 inch (6 mm) from edge of unit grout spaces, bevel back and upward. Permit mortar to cure seven (7) days before placing grout.
- C. Place mortar in masonry unit bed joints back 1/4 inch from edge of unit grout spaces, bevel back and upward. Permit mortar to cure seven (7) days before placing grout.
- D. Reinforce masonry unit cores with reinforcement bars and grout all cells solid. Refer to Paragraph 3.12 below for further information.
- E. Retain vertical reinforcement in position at top and bottom of cells and at intervals not exceeding 192 bar diameters. Splice reinforcement in accordance with Section 03 21 00 – Concrete Reinforcement.
- F. Wet masonry unit surfaces in contact with grout just prior to grout placement.
- G. Grout spaces less than 2 inches in width with fine grout using low lift grouting techniques. Grout spaces 2 inches or greater in width with course grout using high or low lift grouting techniques.
- H. When grouting is stopped for more than one hour, terminate grout 1-1/2 inches below top of upper masonry unit to form a positive key for subsequent grout placement.
- I. Low Lift Grouting: Place first lift of grout to a height of 16 inches and rod for grout consolidation. Place subsequent lifts in 8 inch increments and rod for grout consolidation.
- J. High Lift Grouting:
- K. Provide cleanout opening no less than 4 inches high at the bottom of each cell to be grouted by cutting one face shell of masonry unit.
- L. Clean out masonry cells with compressed air, remove debris.
- M. Request inspection of the cells. Allow 3 days advance notice of inspection.
- N. After cleaning and cell inspection, seal openings with masonry units.
- O. Pump grout into spaces. Maintain water content in grout to intended slump without aggregate segregation.
- P. Limit grout lift to 60 inches and rod for grout consolidation. Wait 30 to 60 minutes before placing next lift.

3.6 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
 - 1. Reinforcement shall occur at each course.
 - 2. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated metal tie straps.
- D. Provide continuity at corners by using prefabricated L-shaped units.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:
 - 1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
 - 2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
 - 3. Space anchors as indicated, but not more than 24 inches O.C. vertically and 36 inches O.C. horizontally.

3.8 BUILT-IN WORK

- A. As work progresses, install built-in items such as metal door and window frames, anchor bolts, plates, electrical boxes and conduit and other items to be built-in the work and furnished by other sections.
- B. Install built-in items plumb and level.
- C. Embed tie sections in masonry joints. Provide not less than 2 inches of air space between back of masonry veneer and face of sheathing.
- D. Bed anchors of metal door frames in adjacent mortar joints. Fill frame void solid with grout. Coordinate rebar locations with structural drawings.
- E. Do not build in organic materials subject to deterioration.

3.9 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry as follows:
 - 1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
 - 2. Install preformed control-joint gaskets designed to fit standard sash block.

3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake out joint for application of sealant.
 4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.
- C. Provide horizontal, pressure-relieving joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 07 Section "Joint Sealants," but not less than 3/8 inch.
1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.
- 3.10 LINTELS
- A. Lintels shall be reinforced masonry as scheduled.
 - B. Provide minimum bearing of 8 inches at each jamb unless indicated otherwise in the drawings.
- 3.11 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS
- A. General: Install embedded flashing in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install vents where indicated.
 - B. Install flashing as follows unless otherwise indicated:
 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
 2. At lintels and shelf angles, extend flashing a minimum of 8 inches into masonry at each end. At heads and sills, extend flashing 8 inches at ends and turn up not less than 2 inches to form end dams.
 3. Install metal drip edges. Seal seam with elastomeric sealant complying with requirements in Section 07 92 00 - "Joint Sealants" for application indicated.
 4. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal flashing termination.
 - C. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.
- 3.12 REINFORCED UNIT MASONRY INSTALLATION
- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.
 - B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.

- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
 - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
 - 2. Limit height of vertical grout pours to not more than 60 inches.

3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
- B. Inspections: Level 1 special inspections according to the "International Building Code."
 - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
 - 2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
- C. Testing Frequency: One set of tests for each 5000 SF of wall area or portion thereof.
- D. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
- E. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content and compressive strength.
- F. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.
- G. Prism Test: For each type of construction provided, according to ASTM C 1314 at 28 days.

3.14 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

3. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
4. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.15 WATER REPELLENT

- A. Install post applied water repellent to masonry as specified in Section 07 19 00.

3.16 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Excess Masonry Waste: Remove excess clean masonry waste and legally dispose of off Owner's property.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Tested Firestopping Systems:

1. Firestop devices.
2. Firestop sealants.
3. Fire resistive joint fire containment.

1.2 RELATED SECTIONS

- A. Section 01 73 29 – Cutting and Patching
- B. Section 02 41 19 – Selective Demolition for Remodeling
- C. Section 26 00 00 – Electrical

1.3 REFERENCES

A. American National Standards Institute (ANSI):

1. ANSI/UL 263 - Fire Tests of Building Construction and Materials.
2. ANSI/UL 723 - Surface Burning Characteristics of Building Materials.
3. ANSI/UL 1479 - Standard for Fire Tests of Through-Penetration Firestops.
4. ANSI/UL 1709 - Rapid Rise Fire Tests of Protection Materials for Structural Steel.
5. ANSI/UL 2079 - Tests for Fire Resistance of Building Joint Systems.

B. ASTM International (ASTM):

1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
3. ASTM E 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
4. ASTM E 1399 - Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems.
5. ASTM E 1966 - Standard Test Method for Fire Resistive Joint Systems.
6. ASTM E 1725 - Standard Test Methods for Fire Tests of Fire-Resistive Barrier Systems for Electrical System Components.
7. ASTM E 2174 - Standard Practice for On-Site Inspection of Installed Fire Stops.
8. ASTM E 2307 - Fire Tests of Perimeter Fire Barrier Systems Using Intermediate Scale, Multi-Story Test Apparatus.

C. FM Global (FM) - FM4991 - Standard for Approval of Firestop Contractors.

D. International Code Congress (ICC):

1. International Building Code (IBC).
- E. National Fire Protection Association (NFPA):
 1. NFPA 70 - National Electrical Code.
 2. NFPA 101 - Life Safety Code.
- F. Underwriters Laboratories (UL) - UL Building Materials Directory; Through-Penetration Firestops Systems (XHEZ), Joint Systems (XHBN), Firestop Devices (XHJI), Forming Materials (XHKU), Wall Opening Protective Materials (CLIV), and Fill, Void or Cavity Materials (XHHW).
- G. International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgments.

1.4 DEFINITIONS

- A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in, or construction joints between, fire rated wall and floor assemblies.

1.5 PERFORMANCE REQUIREMENTS

- A. Provide products and systems identical to those tested and listed for classification by at least one the following:
 1. Underwriters Laboratories Inc. (UL), in "Fire Resistance Directory".
 2. Intertek Testing Service (Formerly known as Omega Point Laboratories), in "Directory of Listed Products."
 3. Any other qualified independent testing and inspection agency that conducts periodic follow-up inspections and is acceptable to authorities having jurisdiction.
- B. Provide firestop products that are flexible enough to allow for pipe vibration in a through penetration application.
- C. Provide firestop sealants and sprays for construction joint applications that are flexible enough to satisfy the movement criteria per the test standards ASTM E 1399, ASTM E 1966 or ANSI/UL 2079.
- D. Provide products with flame spread index of less than 25 and smoke developed index of less than 450, when tested in accordance with ASTM E 84.
- E. Provide products that meet the intent of the L rating classification for the movement of smoke per ANSI/UL 1479 for through penetrations and ANSI/UL 2079 for construction joints.
- F. Provide products that bear classification marking of qualified independent testing agency.
- G. Where firestop systems not listed by any listing agency are required due to project conditions, submit an engineering judgment derived from similar qualified tested system designs or other tests for review and approval prior to installation. Engineering judgment documents must follow requirements set forth by the International Firestop Council.

- H. Use only products specifically listed for use in listed systems.
- I. Provide products that are compatible with each other, with the substrates forming openings, and with the items, if any, penetrating the firestopping, under the conditions represented by this project, based on testing and field performance demonstrated by manufacturer.
- J. Firestopping materials must meet and be acceptable for use by all building codes and NFPA codes cited in this section.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Shop Drawings: For each firestopping system, provide the following:
 - 1. Listing agency's detailed drawing showing opening, penetrating item(s), and firestopping materials, identified with listing agency's name and number or designation and fire rating achieved.
 - 2. For proposed systems that do not conform strictly to the listing, submit listing agency's drawing marked to show modifications and approved by firestop system manufacturer.
- C. Product Certificates: Submit certificates of conformance signed by firestop system manufacturer certifying that materials furnished comply with requirements.
- D. Product Data: Furnish manufacturer's product data sheets on each material to be used in firestop systems. Information on manufacturer's product data sheet should include:
 - 1. Product characteristics including compliance with appropriate ASTM/UL/ANSI test standards.
 - 2. Storage and handling requirements and recommendations.
 - 3. Material safety data sheets (MSDS)
- E. Installation Instruction: Furnish manufacturer's installation instructions.

1.7 QUALITY ASSURANCE

- A. General: All through-penetration firestop systems shall be installed with approved methods using materials that have been tested and classified to produce an approved assembly.
- B. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years experience.
- C. Installation Responsibility: Installation of through-penetration firestop systems and fire-resistive joint systems shall be made by a sole source firestop specialty contractor
- D. Installer Qualifications: Firm must be qualified by having experience, staff, and be properly trained to install the specified products, and meets the following criteria:
 - 1. Firm shall have not less than 3 years experience with fire stop installation.
 - 2. Contractor is acceptable to manufacturer.
 - 3. Contractor is acceptable to authority having jurisdiction.

4. Contractor has completed the manufacturer's certified product installation training.
 5. Contractor must provide a list of completed projects as evidence of experience; include project name and address, owner's name and address, and architect's name and phone number.
 6. Contractor shall have at least of the following qualifications and shall provide certificate of qualification:
 - a. FM 4991 Approved Contractor
 - b. UL Approved Contractor
 - c. Hilti Accredited Fire Stop Specialty Contractor
- E. Codes: Where manufacturer's application procedures are in conflict with those of the code authority having jurisdiction, the more strict guidelines will prevail.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products until ready for installation in manufacturer's original unopened packaging, legibly marked with manufacturer's name and product identification, date of manufacture, lot number, shelf life, listing agency's classification marking, curing time, and mixing instructions if applicable.
- B. Store and handle in such a manner as to prevent deterioration or damage due to moisture, temperature changes, contaminants, and other causes; follow manufacturer's instructions. Coordinate delivery of materials with scheduled installation date to allow minimum storage time at job-site.
- C. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.9 PROJECT CONDITIONS

- A. Coordinate construction and cutting of openings so that each particular firestop system may be installed in accordance with its listing, including sizing, sleeves, and penetrating items.
- B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install firestopping under environmental conditions outside manufacturer's absolute limits.
- C. Provide ventilation as required by firestopping manufacturer, including mechanical ventilation if required.
- D. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

1.10 WARRANTY

- A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Hilti
- B. 3M Fire Protection Products
- C. Tremco
- D. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.
- E. Single Source: To maintain control and integrity of the firestop applications a single manufacturer should be used. Specific UL or approved listing agencies systems applicable to each type of firestop condition should be supplied by one manufacturer.

2.2 SCOPE/APPLICATION

- A. Provide installed firestop protects that limit the spread of fire, heat, smoke, and gasses through otherwise unprotected openings in rated assemblies, including walls, partitions, floors, roof/ceilings, and similar locations restoring the integrity of the fire rated construction to its original fire rating.
- B. Provide firestop systems listed for the specific combination of fire rated construction, type of penetrating item, annular space requirements, and fire rating, and the following criteria:
 - 1. F-Rating: Equal to or greater than the fire-resistance rating of the assembly in which the firestopping will be installed.
 - 2. T-Rating: In habitable areas where penetrating items are exposed to potential contact with materials on fire side(s) of rated assembly, T-rating must equal its F-rating.
 - 3. L-Rating: L-rating of 1 cfm per linear foot (5.5 cu m/h/m) maximum at ambient temperatures.
 - 4. Wall Penetrations: Systems must be symmetrical, with the same rating from both sides of the wall.
 - 5. Testing: Determine ratings in accordance with ASTM E 814 or UL 1479.
- C. Provide firestopping systems listed for construction gaps per the specific combination of fire-rated construction type, configuration, gap dimensions, and fire rating, and the following criteria:
 - 1. Fire resistance rating must be equal to or greater than that of the assembly in which it is to be installed.
 - 2. Movement capability must be appropriate to the potential movement of the gap, demonstrated by testing in accordance with ASTM E 1399 for minimum of 500 cycles at 10 cycles per minute.
 - 3. L-Rating: L-rating of 1 cfm per linear foot (5.5 cu m/h/m) maximum.
 - 4. Determine ratings in accordance with UL 2079.

2.3 MATERIALS

- A. Use only firestop products that have been UL 1479, ASTM E 814 or UL 2079 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.
- B. Firestop Joint Spray: Hilti CFS-SP WB or approved equal sprayable fire-rated mastic for construction joints with the following characteristics:
1. Composition: Water-based, non-solvent; contains no halogens or asbestos.
 2. Application: By spray or brush.
 3. Chemical basis: Acrylic water-based dispersion.
 4. Flexibility: 500 cycles in accordance with ASTM E 1966 and UL 2079 (Class II and Class III approval).
 5. Density: 10.8 lb/gal
 6. Average Volume Shrinkage: 51.1% in accordance with ASTM C 1241.
 7. Flame Spread/Smoke Development: 15/10
 8. Color: Red (Paintable)
- C. Flexible Firestop Sealant: Hilti CP 606 or approved equal acrylic based firestop sealant with the following characteristics:
1. Composition: Acrylic-based; contains no silicone, halogens or asbestos.
 2. Application: gunnable.
 3. Chemical basis: Acrylic based.
 4. Flexibility: 33% movement with 500 cycles in accordance with ASTM E 1966 and UL 2079.
 5. Average Volume Shrinkage: 22.2% in accordance with ASTM C 1241.
 6. Flame Spread/Smoke Development: 10/0
 7. Color: Red (Paintable)
- D. Firestop Putty: Hilti CP 618 or approved equal intumescent, non-hardening firestop putty for cable and pipe penetrations with the following characteristics:
1. Composition: Moldable putty; contains no volatile solvents or asbestos. Non-curing.
 2. Application: Reusable, able to re-penetrate.
 3. Density: 1.48g/cm³.
 4. Average Volume Shrinkage: 22.2% in accordance with ASTM C 1241.
 5. Flame Spread/Smoke Development: 15/10
 6. Color: Red
- E. Sprayable Fire-rated Mastic: Hilti CP 672 Speed Spray or equal sprayable fire-rated mastic for construction joints with the following characteristics:
1. Composition: Water-based, non-solvent; contains no halogens or asbestos.

2. Application: By spray or brush.
 3. Chemical basis: Latex based dispersion.
 4. Flexibility: 500 cycles in accordance with ASTM E 1966 and UL 2079 (Class II and Class III approval).
 5. Density: 1.25g/cm³
 6. Movement Capability: up to 50%.
 7. Flame Spread/Smoke Development: 10/10
 8. Color: Red (Paintable)
- F. Firestop Sealant: Hilti FS-ONE or equal high performance intumescent firestop sealant with the following characteristics:
1. Composition: Water-based, non-solvent; contains no halogens or asbestos.
 2. Application: gunnable.
 3. Chemical basis: Water-based intumescent acrylic dispersion.
 4. Flexibility: 500 cycles in accordance with ASTM E 1966 and UL 2079 (Class II and Class III approval).
 5. Average Volume Shrinkage: 24.1% in accordance with ASTM C 1241.
 6. Movement Capability: 5%.
 7. Unrestricted expansion rate: 3-5 times original volume
 8. Flame Spread/Smoke Development: 0/5
 9. Color: Red (Paintable)
- G. Mineral Wool: Thermafiber SAFB or equal synthetic vitreous fiber fire safing with the following characteristics:
1. Composition: Slag wool fiber, phenolic resin, polyvinyl alcohol. Contains no asbestos.
 2. Density: 4 lb/ft³.
 3. Facing: None (unfaced)
 4. Thickness: as required to suit assembly
 5. Flame Spread/Smoke Development: 0/0
 6. Combustibility: non-combustible in accordance with ASTM E 136
 7. Regulatory approval: ASTM E 814, UL 1479 safing insulation for through penetration systems; UL 2079 safing insulation for construction joint systems.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Conduct tests according to manufacturer's written recommendations to verify that substrates are free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt and other foreign substances capable of impairing bond of firestopping.
- C. Verify that items penetrating fire rated assemblies are securely attached, including sleeves, supports, hangers, and clips.
- D. Verify that openings and adjacent areas are not obstructed by construction that would interfere with installation of firestopping, including ducts, piping, equipment, and other suspended construction.
- E. Verify penetrations are properly sized and in suitable condition for application of materials.
- F. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
- G. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Prepare substrates and penetrations in accordance with manufacturer's instructions and recommendations.
- B. Install masking and temporary coverings as required to prevent contamination or defacement of adjacent surfaces due to firestopping installation.

3.3 INSTALLATION

- A. Install firestop materials in accordance with UL Fire Resistance Directory.
- B. Comply with manufacturer's instructions for installation of through-penetration and construction joint materials.
- C. Seal all holes or voids made by penetrations to ensure an air and water resistant seal. Install so that openings are completely filled and material is securely adhered.
- D. Where firestopping surface will be exposed to view, or where directed by Architect, finish to a smooth, uniform surface flush with adjacent surfaces.
- E. After installation is complete, remove combustible forming materials and accessories that are not part of the listed system.
- F. Repair or replace defective installations to comply with requirements.
- G. At each through penetration, attach identification labels on both sides in location where label will be visible to anyone seeking to remove penetrating items or firestopping. (See Section 3.4 below.)

- H. Clean firestop materials off surfaces adjacent to openings as work progresses, using methods and cleaning materials approved in writing by firestop system manufacturer and which will not damage the surfaces being cleaned.
- I. Notify authority having jurisdiction when firestopping installation is ready for inspection; obtain advance approval of anticipated inspection dates and phasing, if any, required to allow subsequent construction to proceed.
- J. Do not cover firestopping with other construction until approval of authority having jurisdiction has been received.

3.4 IDENTIFICATION & DOCUMENTATION

- A. Identify through-penetration firestop systems with pressure-sensitive, self-adhesive, preprinted vinyl labels. Attach labels permanently to surfaces of penetrated construction on both sides of each firestop system installation where labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include the following information on labels:
 - 1. The words: "Warning -Through Penetration Firestop System-Do Not Disturb. Notify Building Management of Any Damage."
 - 2. Through-Penetration firestop system designation of applicable testing and inspecting agency.
 - 3. Date of Installation.
 - 4. Through-Penetration firestop system manufacturer's name.

3.5 CLEANING AND PROTECTION

- A. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Install identification Labels for Through Penetration and Construction Joint Systems: Pressure sensitive self-adhesive vinyl labels, preprinted with the following information:
 - 1. The words "Warning - Through Penetration Firestop System - Do not Disturb. Notify Building Management of Any Damage."
 - 2. Listing agency's system number or designation.
 - 3. System manufacturer's name, address, and phone number.
 - 4. Installer's name, address, and phone number.
 - 5. General contractor's name, address, and phone number (if applicable).
 - 6. Date of installation.

3.6 SCHEDULE

- A. Provide the following firestop systems at the designated barrier construction types. Refer to the Contract Documents for further detail and information. Submit alternate systems for conditions not described herein for approval.

FIRESTOP SYSTEM SCHEDULE

UL System No.	Barrier Construction	Description	Rating	Products
HW-D-0042	Gypsum wall to concrete metal deck (perpendicular)	Gypsum wall to concrete over fluted metal deck with optional use of spray-on fireproofing (top-of wall)	1 or 2HR	Firestop Joint Spray
HW-D-0049	Gypsum wall to concrete metal deck (parallel)	Gypsum wall to concrete over metal deck with optional use of spray-on fireproofing (top-of-wall)	1 or 2HR	Firestop Joint Spray
HW-D-0098	Concrete / block wall to concrete metal deck(perpendicular)	Concrete or block wall to concrete over fluted metal deck (top-of-wall) (penetrations in flutes) (Max. JW=1")	1 & 2 HR	Sprayable Fire-rated Mastic, Firestop Joint Spray
HW-D-1078	Concrete / block wall to flat concrete floor	Block wall to underside of flat concrete (Max. JW=3")	2 hour	Flexible Firestop Sealant
HW-D-0258	Concrete / block wall to concrete metal deck (parallel)	Concrete or block wall to concrete over fluted metal deck with structural steel beams or bar joists penetrating wall (top-of-wall) (Max JW=1")	2 hour	Sprayable Fire-rated Mastic, Firestop Joint Spray
W-L-1054	Gypsum Board Wall	Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (AS = 0" to 2-1/4")	1 or 2 HR	Intumescent Firestop Sealant
W-L-8065	Gypsum Board Wall	Insulated or non-insulated steel or copper, nonmetallic pipes, and cables (AS varies)	1 or 2 HR	Intumescent Firestop Sealant, Mineral Wool
W-L-3065	Gypsum Board Wall	Cable bundle (various cables) (Steel sleeve optional) (AS=0" to 1")	1 or 2 HR	Elastomeric Firestop Sealant, Flexible Firestop Sealant, Firestop Putty Stick, Intumescent Firestop Sealant
C-AJ-3095	Concrete Floor Concrete/Masonry Wall	Cable bundle (various cables) (Steel sleeve optional) (2-1/2" Concrete)	3 hour	Intumescent Firestop Sealant
C-AJ-1226	Concrete Floor Concrete/Masonry Wall	Max. 30" steel, cast iron, max. 6" copper, conduit or max. 4" EMT pipe (Sleeve Optional) (AS=0" to 1-7/8")	3 hour	Intumescent Firestop Sealant
W-J-7021	Concrete/Masonry Wall	Max. 48" x 24" sheet metal duct w/o damper	1 or 2 HR	Elastomeric Firestop Sealant, Flexible Firestop Sealant, Intumescent Firestop Sealant
W-J-7022	Concrete/Masonry Wall	Max. 20" spiral wound duct w/o damper, or 12" sheet metal duct	1 or 2 HR	Elastomeric Firestop Sealant Flexible Firestop Sealant Intumescent Firestop Sealant
W-J-8035	Concrete/Masonry Wall	Insulated or non-insulated steel or copper, non metallic pipes, and cables	2 hour	Intumescent Firestop Sealant, Mineral Wool

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Interior gypsum board and joint treatment products.
2. Accessories for the installation and trimming of gypsum board partitions and ceilings.

1.2 RELATED SECTIONS

A. Section 09 91 13 – Painting

1.3 REFERENCES

- A. ASTM C 36 - Standard Specification for Gypsum Wallboard.
- B. ASTM C 79 - Standard Specification for Gypsum Sheathing Board.
- C. ASTM C 475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- D. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board
- E. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- F. ASTM C 1280 - Standard Specification for Application of Gypsum Sheathing.
- G. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- H. GA-214 - Recommended Levels of Gypsum Board Finish; Gypsum Association.
- I. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association.
- J. GA-253 - Recommended Specifications for the Application of Gypsum Sheathing; Gypsum Association.
- K. GA-600 - Fire Resistance Design Manual; Gypsum Association.
- L. GA-801 - Handling and Storage of Gypsum Panel Product; Gypsum Association.
- M. UL 263 - Standard for Fire Tests of Building Construction and Materials.
- N. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's catalog data, detail sheets, and specifications on each product to be used. Also include manufacturer's printed installation guide.
- C. Manufacturer's Certificates: Certify materials comply with specified performance characteristics, criteria and physical requirements.
- D. Test and Evaluation Reports: Showing compliance with specified performance characteristics and physical properties.
- E. Maintenance Instructions: Submit manufacturer's maintenance and cleaning instructions.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single ISO certified manufacturer with a minimum of ten (10) years experience
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.
- C. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store gypsum board in accordance with GA-801.
- B. Store materials protected from exposure to harmful weather conditions as delineated by the manufacturer. Ship materials with a weathertight cover and in manufacturer's original packages showing manufacturer's name and product brand name.
- C. Remove plastic shipping bags upon receipt and storage. Failure to remove may increase the likelihood of mold growth.
- D. Store materials inside and protected from damage by weather and direct sunlight. Stack flat; protect ends, edges, and faces of gypsum boards from damage. Protect steel studs and metal accessories from moisture.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1.8 PERFORMANCE REQUIREMENTS

- A. Fire Rated Assemblies: Provide materials and construction identical to those tested in fire-endurance rated assemblies by an independent testing agency acceptable to the authorities having jurisdiction.
 - 1. Test Method: ASTM E 119 or UL 263
 - 2. Ratings: As indicated on the drawings; designations listed are from Gypsum Association GA-600, Fire Resistance Design Manual and UL Fire Resistance Directory.

1.9 COORDINATION

- A. Coordinate work under provisions of Section 01 31 13.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Manufacturers List: Subject to compliance with requirements, provide products by one of the following:
 - 1. MarinoWare
 - 2. Clark Dietrich
 - 3. Scafco
 - 4. Substitution in accordance with Section 01 60 00

2.2 GYPSUM PRODUCTS, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area that correspond with the support system indicated.
- B. Regional Materials: Provide a minimum 20 percent of building materials (by cost) that are regionally, extracted, processed and manufactured within a radius of 500 miles from Project.
- C. Recycled Content: Provide gypsum panel products with recycled content such that post consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum 50 percent by weight.

2.3 GYPSUM MATERIALS

- A. Gypsum Sheathing Board:
 - 1. Comply with ASTM C 1396 Type X and ASTM C1177.
 - 2. Type X fire resistant type core.
 - 3. Tapered edge detail.
 - 4. 5/8" thick unless noted otherwise.
 - 5. Mold-tough in wet or moist areas.

2.4 METAL FRAMING

- A. C-Track: ASTM C 645 galvanized steel.
 - 1. Width: As indicated in the drawings.
 - 2. Gauge: 20 gauge (33 mil) minimum.
 - 3. Corrosion protection: Comply with ASTM C 645; roll-formed from hot-dipped galvanized steel; complying with ASTM A 1003/A 1003M and ASTM A 653/A 653M G40 (Z120) or having a coating that provides equivalent corrosion resistance. A40 galvanized products are not acceptable.
- B. Studs: ASTM C 645 galvanized steel.
 - 1. Shapes and widths as indicated in the drawings.
 - 2. Gauge: 20 gauge (33 mil) minimum.
 - 3. Corrosion protection: Comply with ASTM C 645; roll-formed from hot-dipped galvanized steel; complying with ASTM A 1003/A 1003M and ASTM A 653/A 653M G40 (Z120) or having a coating that provides equivalent corrosion resistance. A40

galvannealed products are not acceptable.

4. Provide two studs at perimeter of all openings, stud gauge to match wall stud gauge.
- C. Metal Furring Channels.
1. Hat-shaped, ASTM C645, 7/8" high, 20 gauge (33 mil) with G60 galvanized coating per ASTM A653.
 2. "Z"-shaped: ASTM C645, depths as indicated, 24 gauge minimum with G60 galvanized coating per ASTM A653.
 3. Resilient: Manufacturer's standard RC-1 style sound transmission reducing 1/2" deep 25 gauge steel with G40 (Z120) galvanized coating per ASTM A653.
- D. Ceiling and Soffit Framing.
1. Main runners: Cold-rolled, "C" shaped steel channels, 16 gauge minimum and galvanized with G40 (Z120) galvanized coating per ASTM A653.
 2. Cross furring: Hat-shaped steel furring channels, ASTM C645, 7/8 inch high, 25 gauge, galvanized.
 3. Furring anchorages: 16 gauge galvanized wire ties, manufacturer's standard wire-type clips, bolts, nails or screws recommended by furring manufacturer and complying with ASTM C754.

2.5 GYPSUM JOINT TREATMENT AND FINISH PRODUCTS

- A. Joint Treatment Tape: 2" nominal width complying with ASTM C 475 and GA-216.
- B. Joint Compound: Drying-type, normal weight ready-mixed all purpose compound; complying with ASTM C 475.

2.6 BLOCKING

- A. Provide solid material in wall to support and distribute applied loads on walls and partitions.
 1. Steel Backer Plates, galvanized; 6 inches wide x 16 gauge minimum x lengths to suit size of items to be attached; fastened to studs for attachment of surface mounted fittings and accessories.
 2. Hoover Treated Wood Products "Pyro-Guard" 1/2" minimum thick plywood or SPIB graded, SYP No. 2 kiln dried dimension framing lumber fire retardant treated to meet ASTM E-84, D3201 in nominal dimensions as called for in the drawings or as necessary.
 3. Elimination of blocking or direct attachment of accessories or equipment to studs shall not be allowed.

2.7 ACCESSORY MATERIALS

- A. Corner Bead: Formed galvanized steel angle, min. base steel 0.014 in. thick, and complying with ASTM C 1047.
- B. Casing Bead: Formed galvanized steel trim, minimum base steel thickness of 0.014 inch (0.35 mm), complying with ASTM C 1047, type(s) as follows:
 1. J-shaped U-bead, for face nailing and finishing with joint treatment.
 2. L-shaped, for application over edge and finishing with joint treatment.

- C. Control Joints: USG No, 093 or approved equal 1-3/4" wide roll-formed zinc profile with perforated flanges and 1/4" wide center channel. Provide with removable tape strip over channel.
- D. Hanger Anchorage Devices: Screws, clips, bolts or other devices compatible with indicated structural anchorage for ceiling hangers and whose suitability has been proven through standard construction practices or by certified test data.
- E. Powder-Actuated Fasteners in Concrete: Fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers [and with capability to sustain, without failure, a load equal to 10x calculated loads.
- F. Hangers: ASTM A 641, soft, Class 1 galvanized steel wire or rods, sizes to comply with requirements of ASTM C754 for ceiling or soffit area and loads to be supported.
- G. Screws: Self-drilling, self-tapping steel Type S or Type S-12 screws complying with ASTM C 954 or ASTM C 1002 or both with heads, threads, points, and finish as recommended by panel manufacturer.
- H. Acoustical Sealant: ASTM C919 and ASTM C834, non-hardening, elastic, water-based caulking specifically formulated for sound-rated partition and ceiling systems and sealing exterior walls to reduce infiltration. Material shall be non-bleeding and non-staining, pumpable and easily applied in beads.
- I. Sound Attenuation Blankets: Thermafiber LLC Sound Attenuation Fire Blankets SAFB (Fire Safety FS-15 Blankets) or approved equal paperless, semi-rigid, mineral fiber mats conforming to ASTM C665, Type I with Flames Spread of 15 or less and Smoke Development of 0 per ASTM E84.
- J. Partition End Support: NoFlex TT3 series 16 gauge steel post welded to 3" x 8" x 3/8" steel plate.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions are ready to receive work and framing and opening dimensions are as indicated on the Drawings.
- B. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Application: Apply and maintain conditions during installation in accordance with GA-216 and GA-238 and as follows:
 - 1. Keep gypsum board dry throughout application.
 - 2. Do not use gypsum board that has visible mold growth.

3. Apply gypsum board with a minimum 1/8" gap at perimeter.
 4. Do not apply gypsum board over other building materials where conditions exist that are favorable to mold growth.
 5. Maintain a sound weather-tight building envelope including, such elements as the roof, sealants, windows, etc.
 6. Immediate and appropriate remediation measures must be taken as soon as water leaks or condensation sources are identified.
 7. Provide routine cleaning and maintenance operations to prevent saturation of the gypsum board.
 8. If gypsum board is damaged by water, assess the need for replacement in accordance with GA-231.
- B. Install accordance with GA 216 and the following:
1. Gypsum Sheathing Board: ASTM C 1280 and GA-253.
 2. Fire Resistant Construction: GA 600.
 3. Gypsum Board and Joint Treatment: ASTM C 840 and GA-214.
 4. Gypsum panel manufacturer's published recommendations.
- C. Finishing: Tape, fill, sand and finish joints in accordance with ASTM C 840 and GA-214.
1. Level 1: Not used.
 2. Level 2: Not Used.
 3. Level 3: Not Used.
 4. Level 4: All gypsum board.
 5. Level 5: Not Used.
- 3.4 PROTECTION OF FINISHED WORK
- A. Protect work from damage and deterioration until date of Substantial Completion.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. New suspended acoustic ceiling system and perimeter trim.
- B. Repair and repainting of existing ceiling suspension system.

1.2 RELATED SECTIONS

- A. Section 09 91 13 – Painting.

1.3 REFERENCES

- A. ASTM A 641 – Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
- B. ASTM C 423 – Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- C. ASTM C 635 – Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
- D. ASTM C 636 – Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
- E. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- F. ASTM E 1264 – Classification for Acoustical Ceiling Products.
- G. ASTM E 1477 – Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
- H. ASTM D 3273 – Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- I. ASTM E 119 – Standard Test Methods for Fire Tests of Building Construction and Material.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.
- C. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees; demonstration sample of repainted grid comparing new finish to existing.
- D. Shop Drawings: Layout and details of acoustical ceilings. Show locations of items which are to be coordinated with, or supported by the ceilings.
- E. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.
- F. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall

be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.5 QUALITY ASSURANCE

- A. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
- B. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.
 - 1. Flame Spread: 25 or less
 - 2. Smoke Developed: 50 or less

1.6 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, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and stabilized moisture content.
- C. Handle acoustical ceiling units carefully to damage to units in any way.

1.7 PROJECT CONDITIONS

- A. All ceiling products and suspension systems must be installed and maintained in accordance with manufacturer's written installation instructions for that product in effect at the time of installation and best industry practice. Prior to installation, the ceiling product must be kept clean and dry, in an environment that is between 32°F (0°C) and 120°F (49°C) and not subject to Abnormal Conditions. Abnormal conditions include exposure to chemical fumes, vibrations, moisture from conditions such as building leaks or condensation, excessive humidity, or excessive dirt or dust buildup.
- B. The ceilings must be maintained to avoid excessive dirt or dust buildup that would provide a medium for microbial growth on ceiling panels. Microbial protection does not extend beyond the treated surface as received from the factory, and does not protect other materials that contact the treated surface such as supported insulation materials.

1.8 WARRANTY

- A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace acoustical panels that fail within the warranty period. Failures include, but are not limited to:
 - 1. Acoustical Panels: Sagging and warping as a result of defects in materials or factory workmanship.
 - 2. Grid System: Rusting and manufacturer's defects.
- B. Warranty Period:
 - 1. Grid and acoustical panels: Ten (10) years from date of substantial completion.

1.9 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Extra materials shall be packaged with protective covering for storage and identified with appropriate labels.
 - 1. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 5.0 percent of amount installed.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers List: Subject to compliance with requirements, provide products by one of the following
 - 1. Armstrong World Industries, Inc. (basis of design)
 - 2. CertainTeed Saint-Gobain
 - 3. USG
- B. Requests for substitutions will be considered in accordance with Section 01 60 00.

2.2 STANDARD ACOUSTICAL CEILING UNITS

- A. Standard acoustical panels for general use:
 - 1. Armstrong Kitchen Zone No. 673
- B. Surface Texture: Smooth
- C. Composition: Wet-formed Mineral Fiber
- D. Finish: Factory applied white vinyl latex paint.
- E. Size: 24in by 24in by 5/8in
- F. Edge Profile: Square edge for interface with 15/16" exposed tee grid system.
- G. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton: 0.50 to 0.60.
- H. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 30 to 35
- I. ASTM E 1264 Classification
 - 1. Type III, Form 2, Pattern CE
 - 2. Fire Class A (UL)
- J. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.81 to 0.89.
- K. VOC Emissions: Third party certified "Low Emissions"
- L. Sag Resistant
- M. Anti-mold and mildew treated
- N. Humigard Plus

2.3 SUSPENSION SYSTEMS

- A. Acceptable Product: Armstrong Prelude XL or equal 15/16" Exposed Tee Grid System.
- B. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized steel, aluminum, or stainless steel as per ASTM A 653. Main beams and cross tees are double-web steel construction with 15/16 inch exposed flange design. Exposed surfaces shall be chemically cleansed. Cap pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
- C. Structural Classification: ASTM C 635 HD.
- D. Color: White
- E. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- F. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least three design load, but not less than 12 gauge.
- G. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

2.4 ACCESSORIES

- A. Ceiling Touch-Up Paint: manufacturer's standard white latex paint to match tile finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

3.2 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. Coordinate panel layout with mechanical and electrical fixtures. Consult with Architect prior to installing any materials if there are questions regarding layout.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
- C. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION OF GRID

- A. Install suspension system in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and the authorities having jurisdiction.

- B. Suspend main beam from overhead construction with hanger wires spaced 48 inches on center along the length of the main runner. Install hanger wires plumb and straight.
- C. Where necessary to straddle existing mechanical work, construct trapeze assembly from uni-strut. Do not suspend ceiling system from other work.
- D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
- E. Connect border cross tee suspension pieces to perimeter wall with wire and fasteners above the perimeter trim to prevent movement.

3.4 INSTALLATION OF PANELS

- A. Install panels in accordance with the manufacturer's instructions, with edges resting on flanges of main runner and cross tees.
- B. Cut and fit panels neatly against abutting surfaces.
- C. Support edges by wall moldings.
- D. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

3.5 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. 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.
- C. Touch-up and hide minor scratches and nicks in the acoustic unit surfaces.
- D. Touch-up and paint field edges that are exposed to view.
- E. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Interior Primer.
- B. Interior Paint.
- C. Surface Preparation.

1.2 RELATED SECTIONS

- A. Section 01 73 29 – Cutting and Patching.
- B. Section 06 20 23 – Interior Finish Carpentry.

1.3 REFERENCES

- A. MPI (APL) - Master Painters Institute.
- B. SCAQMD 1168 - South Coast Air Quality Management District Rule #1168; October 3, 2003.
- C. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

1.4 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523, a matte flat finish.
- B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, a high-side sheen flat, velvet-like finish.
- C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, an eggshell finish.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523, a satin-like finish.
- E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523, a semi-gloss finish.
- F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523, a gloss finish.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data: Provide a complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name, catalog number, and general product category.
 - 2. Cross-reference to specified paint system(s) that the product is to be used in; include description of each system.
- C. Samples: Submit three paper samples, 8 inches by 8 inches in size, illustrating selected colors for each color and system selected with specified coats cascaded.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: a single manufacturer with a minimum of ten (10) years experience will supply all primary products specified in this section.

B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:

1. Product name and type (description).
2. Application and use instructions.
3. Surface preparation.
4. VOC content.
5. Environmental issues.
6. Batch date.
7. Color number.

B. Storage: Store products in manufacturer's unopened packaging until ready for installation. Store solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

D. Disposal:

1. Dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction
2. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
3. Do not incinerate closed containers.
4. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

A. At project closeout, provide to the Owner or owner's representative an executed copy of the Manufacturer's standard form outlining the terms and conditions of and any exclusions to their Limited Warranty against Manufacturing Defect.

B. Minimum warranty period shall be one year including labor and materials.

1.10 EXTRA MATERIALS

A. At project closeout, supply the Owner with a minimum of one quart of each product for touch-up purposes.

B. At project closeout, provide the color mixture name and code to the Owner for accurate future color matching.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Sherwin-Williams (basis of design)

B. Benjamin Moore

C. PPG/Pittsburgh

D. Requests for substitutions will be considered in accordance with Section 01 60 00.

2.2 SOURCE LIMITATIONS

A. Obtain paint materials from single source from single listed manufacturer.

2.3 MATERIALS - GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. Paints and Coatings:

1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufactures product instructions for optimal color conformance.

D. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

E. Volatile Organic Compound (VOC) Content:

1. Provide coatings that comply with the most stringent requirements specified in the following:

- a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- F. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.
- G. Compatibility: Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- H. Color: Refer to Finish Schedule or Drawings for paint colors.

2.4 MIXING AND TINTING

- A. Except where specifically noted in this section, all paint shall be ready-mixed and pre-tinted.
- B. Agitate all paint prior to and during application to ensure uniform color, gloss, and consistency.
- C. Thinner addition shall not exceed manufacturer's printed recommendations. Do not use kerosene or other organic solvents to thin water-based paints.
- D. Where paint is to be sprayed, thin according to manufacturer's current guidelines.

2.5 INTERIOR SURFACES

- A. Cast in Place Concrete Substrates – Non-traffic Surfaces, Dry Areas: Eggshell Finish.
 1. Primer/Filler: MPI #3 interior latex primer sealer. Sherwin Williams Loxon Concrete & Masonry Primer Sealer, A24W8300, at 8.0 mils wet, 3.2 mils dry.
 2. 1st Coat: MPI #52 X-Green interior latex eggshell paint. Sherwin Williams ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
 3. 2nd Coat: MPI #52 X-Green interior latex eggshell paint. Sherwin Williams ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
- B. CMU Substrates – Dry Areas: Eggshell Finish.
 1. Primer/Filler: MPI #4 X-Green interior/exterior latex block filler. Sherwin Williams PrepRite Block Filler, B25W25, at 100 to 200 sq. ft. per gal.
 2. 1st Coat: MPI #52 X-Green interior latex eggshell paint. Sherwin Williams ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
 3. 2nd Coat: MPI #52 X-Green interior latex eggshell paint. Sherwin Williams ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.

- C. Gypsum Board – Ceilings and Soffits: Flat Finish.
1. Primer: MPI #149 X-Green interior latex primer. Sherwin Williams ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry.
 2. 1st Coat: MPI #53 X-Green interior flat latex. Sherwin Williams ProMar 200 Zero VOC Latex Flat, B30-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat.
 3. 2nd Coat: MPI #53 X-Green interior flat latex. Sherwin Williams ProMar 200 Zero VOC Latex Flat, B30-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat.
- D. Gypsum Board – Walls: Eggshell Finish.
1. Primer: MPI #149 X-Green interior latex primer. Sherwin Williams ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry.
 2. 1st Coat: MPI #52 X-Green interior eggshell latex. Sherwin Williams 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
 3. 2nd Coat: MPI #52 X-Green interior eggshell latex. Sherwin Williams 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
- E. Wood – Exposed wood items not scheduled to receive shop-applied finish: Semi-Gloss Finish.
1. Primer: MPI #39 interior latex primer sealer. Sherwin Williams PrepRite ProBlock Primer Sealer, B51-620 Series, at 4.0 mils wet, 1.4 mils dry.
 2. 1st Coat: MPI #43 X-Green interior semi-gloss latex. Sherwin Williams ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat.
 3. 2nd Coat: MPI #43 X-Green interior semi-gloss latex. Sherwin Williams ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat.
- F. Field Finished Metal Surfaces: Semi-gloss finish.
1. Primer: MPI #107 water-based rust inhibitive primer. Sherwin Williams Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10 mils wet, 2.0 to 4.0 mils dry.
 2. 1st coat: MPI #147 X-Green water-based semi-gloss acrylic. Sherwin Williams Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry, per coat.
 3. 2nd Coat: MPI #147 X-Green water-based semi-gloss acrylic. Sherwin Williams Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry, per coat.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- B. Ensure that surfaces to receive paint are dry immediately prior to application.
- C. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer. Where exceeding the following values, promptly notify Architect and obtain direction before beginning work.
 - 1. Concrete and Masonry: 12 percent. Allow new concrete to cure a minimum of 28 days.
 - 2. Plaster and Gypsum: 12 percent.
 - 3. Wood: 15 percent.
 - 4. Concrete Slab-On-Grade: Perform calcium chloride test over 24 hour period or other acceptable test to manufacturer. Verify acceptable moisture transmission and pH levels.
- D. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.
- E. The degree of surface deterioration (DSD) shall be assessed using the assessment criteria indicated in the MPI Maintenance Repainting Manual. In general the MPI DSD ratings and descriptions are as follows:
 - 1. DSD-0: Sound Surface (may include visual (aesthetic) defects that do not affect film's protective properties).
 - 2. DSD-1: Slightly Deteriorated Surface (may show fading; gloss reduction, slight surface contamination, minor pin holes scratches, etc.) / Minor cosmetic defects (runs, sags, etc.).
 - 3. DSD-2: Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, staining, etc.).
 - 4. DSD-3: Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
 - 5. DSD-4: Substrate Damage (repair or replacement of surface required by others).
- F. No repainting work shall commence until all adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Painting Subcontractor. Application of coatings will be considered as an acceptance of surface conditions.

3.2 PREPARATION - GENERAL

- A. Clean surfaces thoroughly prior to coating application.
- B. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform, satisfactory appearance.
- C. Stains and Marks: Remove completely, if possible, using materials and methods

- recommended by coating manufacturer; cover stains and marks which cannot be completely removed with isolating primer or sealer recommended by coating manufacturer to prevent bleed-through.
- D. Remove Mildew, Algae, and Fungus using materials and methods recommended by coating manufacturer.
 - E. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.
 - F. Remove or protect adjacent hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items not indicated to receive coatings.
 - G. Move or protect equipment and fixtures adjacent to surfaces indicated to receive coatings to allow application of coatings.
 - H. Protect adjacent surfaces not indicated to receive coatings.
 - I. Prepare all existing interior surfaces for repainting in accordance with MPI Repainting Manual requirements.
 - J. Prepare all new surfaces in accordance with MPI and paint manufacturer's instructions for specified coatings and indicated materials, using recommended methods and materials.

3.3 SURFACE PREPARATION

- A. Concrete and Concrete Masonry: Clean surfaces free of loose particles, sand, efflorescence, laitance, form oil, curing compounds, and other substances which could impair coating performance or appearance.
- B. Metals - Aluminum, Mill-Finish: Clean and etch surfaces with a phosphoric acid-water solution or water based industrial cleaner. Flush with clean water and allow to dry, before applying primer coat.
- C. Metals - Ferrous, Unprimed: Remove rust or scale, grease, oil, and other contaminants which could impair coating performance or appearance. Clean using methods recommended in writing by paint manufacturer but not less than the following:
 - 1. SSPC-SP 2 – Hand Tool Cleaning.
- D. Metals - Ferrous, Shop-Primed: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- E. Metals - Galvanized Steel: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- F. Wood:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Sand surfaces that will be exposed to view, and dust off..
 - 3. Prime edges, ends, faces, undersides, and backsides of wood..
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.4 APPLICATION - GENERAL

- A. Apply each coat to uniform thickness in accordance with manufacturer's instructions. Do not exceed manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other imperfections are not permitted.
- B. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.
- C. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet.
- D. Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- E. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.
- F. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.
- G. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.
- H. Paint all exposed surfaces. If a color, finish, or surface is not specifically mentioned, the Architect will select from standard colors and finishes available.
- I. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.

3.5 CLEANING

- A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.
- B. Re-install hardware, electrical equipment plates, grilles and louvers, lighting fixture trim, and other items that have been removed to protect from contact with coatings.
- C. Reconnect equipment adjacent to surfaces indicated to receive coatings.
- D. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.
- E. Remove protective materials.

3.6 PROTECTION

- A. Protect completed coating applications from damage by subsequent construction.
- B. Repair to Architect's acceptance coatings damaged by subsequent construction activities. Where repairs cannot be made to Architect's acceptance, re-apply finish coating to nearest adjacent change of surface plane, in both horizontal and vertical directions.

END OF SECTION

SECTION 11-4000 – FOOD SERVICE EQUIPMENT

PART 1 - GENERAL

1.01 PROVISIONS

- A. The general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 General Requirements, apply to work specified in this Section.

1.02 SUMMARY

- A. Work Included: Food Service Equipment, including but not limited to, the following:
 - 1. Equipment as shown on Foodservice Drawings and Itemized Specifications, Specifications indicate minimum acceptable products.
 - 2. Uncrating, assembling, rigging setting, leveling, and properly and securely fastening to wall or floor as required with all necessary items such as braces, filler pieces and related items.
 - 3. Furnish, erect and maintain staging and scaffolding, including mechanical hoisting equipment, required for the performance of the Food Service Equipment Subcontractor's work.
 - 4. Plumbing, electrical, steam, and general accessories for items specified in this section, including, but not limited to faucets, strainers, lever-wastes, tail pieces, control valves, cords and plugs, and disconnects provided as standard with the equipment. Furnish to the proper mechanical or electrical trades for the final connection of utility services. Tag each item with the equipment number for easy reference.
- B. Related Work Specified in other sections, KEC is not responsible for providing or installing:
 - 1. Plumbing Work:
 - a. Hose bibs
 - b. Final gas and plumbing connections
 - c. Water pressure regulators
 - d. Traps, tail pieces, valves, stops and shutoff valves
 - e. Grease traps
 - f. Backflow prevention
 - g. Floor sinks
 - h. Pressure Reducing Valves
 - 2. Heating, Ventilating and Air Conditioning:
 - a. Final duct connections
 - b. Exhaust and supply fans
 - c. Ductwork
 - d. Fan switches
 - 3. Electrical Work:
 - a. Final electrical connections

- b. Disconnect switches
- c. Receptacles
- d. Ballasts
- e. Control Wiring
- f. Internal wiring to a control panel or switch

4. Wall Blocking Section 061000

1.03 SUBMITTALS

- A. Shop Drawings: Prepare separate plans for layout, electrical, plumbing and building conditions/HVAC plans at a scale of 1/4 inch to the foot showing dimension location, size, height above finished floor and, where necessary, capacity of mechanical services required for each item of equipment. Foodservice Contract Documents shall not be reproduced and represented as submittal documents.
- B. Equipment: Prepare detailed drawings at a minimum scale of 3/4 inch to the foot, plus necessary cross sections at a scale of 3/4 inch to the foot, showing complete details of each item of custom manufacture. Include accurately dimensioned layouts and locations for floor depressions if required or called for in these specifications. Include accurately dimensioned details and locations of special wall openings where items of equipment extend through walls.
- C. Product Data: Submit brochures containing illustrations, specifications, accessories, line drawings and rough-in information on brand name items (items not of custom manufacture).
- D. O & M Manuals: Submit operation and maintenance manuals containing installation, operating, maintenance and warranty information on brand name items (items not of custom manufacture).
- E. LEED Submittals: Demonstrate compliance with the following criteria, in compliance with Specification Section 018113 – Sustainable Design Requirements:
 1. EA Prerequisite 3 and Credit EA 4: Manufacturer’s product data for refrigeration systems, including printed manufacturers’ statements indicating that not CFC-based refrigerants are used.
 2. Credit EQ 4.1: Manufacturer’s product data for adhesives and sealants, including printed statement of VOC content.

1.04 QUALITY ASSURANCE

- A. Qualification of Fabricators
 1. To fabricate equipment such as tables, sinks, and counter tops, described in these specifications other than by name and catalog numbers, employ an equipment fabricator who has the plant, personnel and engineering facilities to properly design and manufacture high quality equipment. The fabricator shall be subject to the approval of Architect, Owner and Colburn and Guyette. Work in the above category shall be manufactured by one manufacturer of standard unit assembly and uniform design and finish.

2. The Food Service Equipment Subcontractor for the equipment as specified in this section shall be a recognized distributor for these items of equipment which are of other manufacture than his own.
 3. Equipment to be supplied under this section of the specifications will not be acceptable unless the Food Service Equipment Subcontractor furnishes evidence that equipment of approximately the same type and design has been installed elsewhere and has been operating successfully for at least 5 years. Equipment installed for test or prototype will not be considered acceptable.
- B. Fabricate and install equipment to meet Local, State and National Board of Health regulations. Perform work and provide materials in full accordance with latest rules of U.S. Public Health Services, National Board of Fire Underwriters, and local or State Ordinances, regulations of State Fire Marshall and Underwriters Laboratory.
- C. Reference Standards:
1. NSF Standards: Comply with applicable National Sanitation Foundation standards and recommended criteria. Provide each principal item of food service equipment with a "Seal of Approval" by NSF.
 2. UL Labels: Where available, provide UL Labels on items of food service equipment with prime electrical components. Provide UL "recognized marking" on other items with electrical components, signifying listing by UL, where available.
 3. ANSI Standards: Comply with applicable ANSI standards for gas-burning appliances, for piping to compressed gas cylinders, and for vacuum breakers and air gaps to prevent siphonage in water piping (ANSI 221) series, B57. 1, A40.6 and A40.4).
 4. NFPA Codes: Comply with "National Electrical Code", and BOCA with NFPA No. 96 for exhaust system equipment, NFPA No. 17 & 17A for wet chemical extinguishing system equipment; and NFPA No. 54.
- 1.05 PRODUCT DELIVERY, STORAGE AND HANDLING
- A. Properly package and protect equipment during shipping, handling, and storing to prevent damage.
 - B. Store indoors or under cover, on raised platforms, fully protected from dirt and moisture.
 - C. Measures must be taken to protect equipment after installation and before final turnover.
- 1.06 EXISTING CONDITIONS
- A. Field Measurements: Check measurements at building and be responsible for making the food service equipment fit.
 1. Examine the drawings and identify critical areas which might affect the fitting of equipment, aisles, installation, or other functional aspects of the equipment. Submit drawings which show structural measurements and dimensions which are critical to the proper execution and fitting of work.

1.07 WARRANTIES

- A. New equipment specified for this facility shall be guaranteed for a period of one (1) year beginning on the date of the final acceptance of this section. Manufacturers shall provide their standard guarantees and warranties for work under this section. However, such guarantees and warranties shall be in addition to and not in lieu of the above stated one (1) year warranty as well as other liabilities which the Manufacturer and the Food Service Equipment Subcontractor may have by law or by other provisions of the Contract Documents.

1.08 EXISTING EQUIPMENT

- A. Verify and document condition of equipment to be reused.
- B. Confirm status of removed equipment with owner prior to any action taken.
- C. All existing equipment to be re-used to be relocated and set in place by KEC and all MEP disconnect and reconnection by appropriate trades.
- D. General Contractor responsible for any on site storage of existing equipment to be reused.
- E. Remove and dispose of all existing equipment to be replaced.
- F. Coordinate disconnect, capping and making safe of equipment utilities by General Contractor. Coordinate reconnect of all existing equipment with appropriate trades.
- G. Coordinate all new equipment locations in the field with General Contractor to ensure proper placement as per equipment layout on Contract Documents.
- H. Verify and coordinate all details, dimensions and utility requirements for all existing equipment to be re-used in the field with the General Contractor.
- I. Provide General Cleaning of existing equipment to be reused.

1.09 SUBSTITUTIONS

- A. All items identified in this section shall be provided as specified. Substitutions will be considered only if the following conditions have been satisfied, otherwise requests for substitutions shall be returned without action except to record noncompliance with the Contract Documents:
 - 1. The Foodservice Drawings and Specifications have been designed and engineered based on the primary specification. Any and all coordination and cost associated with the incorporation of a substituted piece of equipment will be entirely the responsibility of the KEC. Including but not limited to engineering changes due to utility discrepancies, instructions to G.C. and/ or subcontractors, providing proper clearances to adjacent structures, proper fit, conduit trenching and overhead utilities and any and all modifications to building or architectural elements.
 - 2. All substitutions must be clearly listed in the bid proposal and shall include:
 - a. Manufacturer/ model number
 - b. Utility data
 - c. Accessories
 - d. A list of deviations from primary spec

- e. Shop drawings for exhaust hoods, walk-ins, accumulators/ conveyors, millwork, UDS systems, variable demand vent systems and any other items deemed worthy of extra attention/ coordination. Simply submitting cutsheets will not be accepted.

An item with a listed manufacturer or "or equal" designation does not indicate that there is in fact a true equal. It is the responsibility of the KEC to assure that all alternates meet the original design intent and criteria of the primary spec.

Primary manufacturer and model must be specified unless otherwise noted in Division 1 of the bidding instruction if Energy Star and Massachusetts State Plumbing Board Approved.

3. Revisions to Contract Documents are not required.
4. Proposed substitutions are in keeping with the general intent of Contract Documents.
5. The suggested substitutions is directly related to an "or equal" clause or similar language in the Contract Documents or as requested by the Owner/ Architect. Otherwise, provide as specified.
6. Proposed substitutions shall be equal in quality, durability, appearance, strength, design and approvals. If it is determined at any time by the owner or owner's rep prior to final acceptance that the substitution is not equal to primary spec, the KEC shall assume responsibility and all associated costs required to replace with the correct model.
7. Proposed substitutions shall perform equally the function imposed by the general design.
8. Proposed substitutions conform substantially, even with deviations, to the detailed requirements for the product identified in these specifications. Including, but not limited to, voltage, amperage, phase, MBTU, cold water connections, hot water connections, waste drains and exhaust/ supply CFM requirements, collar sizes and static pressure.
9. A substantial advantage is afforded the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Said advantages and responsibilities shall be fully outlined in the above noted submission requirements. Additional requirements to the Owner may include additional compensation to the Architect and Food Service Consultant for redesign and evaluation services, increased costs of other construction by the Owner or separate contractors, and similar considerations.
10. Proposed substitutions must meet all approvals and certifications of the originally specified equipment, including but not limited to, Energy Star and Massachusetts State Plumbing Board Approval. Appropriate documentation is required to be submitted with the proposed substitutions.

PART 2 - PRODUCTS

2.01 EQUIPMENT

- A. Provide manufacturer's standard equipment except as otherwise noted in the Itemized Specification.

2.02 MATERIALS

- A. Stainless steel (s/s): Non-corrodible alloy, or stainless steel, specified hereinafter type 304/305 stainless steel, having a standard analysis of 18 percent chrome and 8 percent nickel. (AISI type 304/305, hardest workable temper, No. 4 directional polish).
- B. Galvanized steel sheet (GLV): Eight (8) coat galvanized copper bearing, used in largest possible sheets with as few joints as necessary. Painted hammer stone gray enamel unless otherwise specified. (ASTM A 526 except ASTM A 527 for extensive forming: ASTM A 525, G90 zinc coating chemical treatment.)
- C. Steel sheet: ASTM A 569 hot-rolled or cold formed, carbon steel unless stainless steel is indicated.
- D. Steel structural members: Hot-rolled or cold formed, carbon steel unless stainless steel is indicated.
- E. Galvanized finish: ASTM 123 hot-dipped zinc coating.
- F. Aluminum: ASTM B209/B221 sheet, plate, and extrusion (as indicated): Alloy, tempered finish as determined by manufacturer/fabricator, except 0.40 mil natural anodized finish on exposed work unless another finish is indicated.
- G. Sealants: One-part or two-part, polyurethane or silicon based liquid elastomeric sealant, non solvent release type, mildew resistant. Low VOC sealants shall be used on all LEED projects.
- H. Gaskets: Solid or hollow (but not cellular) neoprene or polyvinyl chloride: light gray, self-adhesive or prepared for either adhesive application or mechanical anchorage.
- I. Paints and Coatings:
 - 1. Provide the types of painting and coating materials which after drying or curing are durable, non toxic, non dusting, non flaking and mildew resistant.
 - 2. Primer coating for metal: Type suitable for baking where indicated.
 - 3. Enamel for metal: Synthetic type suitable for baking where indicated.
 - 4. Sound deadening: Heavy-bodied resinous coating, filled with granulated cork or other resilient material, compounded for permanent, non flaking adhesion to metal in a 1/8 inch thick coating.

2.03 FABRICATION OF METALWORK

- A. Gauges, where specified, shall be United States standard gauges. Finish exposed surfaces to #4 or 180 grit. Where manufacturing process and welding disturb original finish, carefully re-grind, polish, and restore to match balance of surface.
- B. General Fabrication Requirements: Remove burrs from sheared edges of metalwork, ease the corners, and smooth to eliminate cutting hazard. Bend sheets of metal at not less than the minimum radius required to avoid grain separation in the metal. Maintain flat, smooth surfaces without damage to finish.

- C. Reinforce metal at locations of hardware, anchorages and accessory attachments, wherever metal is less than fourteen (14) gauge or requires mortised application. Conceal reinforcements to the greatest extent possible. Weld in place on concealed faces.
- D. Where fasteners are permitted, provide Phillips head flat or oval head machine screws.
- E. Work-surface fabrication: Fabricate metal work surfaces by forming and providing seamless construction, using welding rod matching sheet metal. Where necessary for disassembly, provide waterproof gasket draw-type joints with concealed bolting.
- F. Reinforce work surfaces 30 inches o.c. both ways with galvanized or stainless concealed structural members. Reinforce edges which are not self-reinforced by formed edges.
- G. Sound deaden underside of metal work surfaces, including sinks and similar units, with a coating of sound deadening material. Hold coating back 3 inches from sanitary edges which are open for cleaning.
- H. Structural framing: Except as otherwise indicated, provide framing of minimum 1 inch pipe size round pipe or tube members, with mitered and welded joints and gusset plates ground smooth. Provide 14 gauge stainless steel tube for exposed framing and galvanized steel pipe for concealed framing.
- I. Enclosure General: Provide enclosures, including panels housing, and skirt for service lines and mechanical/electrical devices and secondary enclosures for equipment items where indicated and where required for compliance with governing regulations and NSF standards. Otherwise, fabricate each item to be as open as possible for ease of cleaning. Where equipment is exposed to view, provide enclosure of service lines operating components and mechanical and electrical devices.
- J. Welding:
 - 1. Stainless Steel Welds: Use stainless steel electrodes. Finish welds free of pits, flaws, discoloration, and peen to remove flux and impurities. Grind welds smooth, polish to original finish of metal, with grain uniform to grain of original sheet. Where grinding and/or polishing has destroyed grain, restore blend to omit traces of welding.
 - 2. Solder containing lead as an intentional ingredient shall not be used in a food zone or splash zone (NSF 4.2/ ANSI 2-2010).
 - 3. Grind concealed or exposed welds on unpolished surfaces back to original surface metal to remove impurities from welds. Make welds smooth, with neither dip nor bulge.
- K. Electrical Components:
 - 1. Fit fabricated items requiring dry heat with tube heaters of sufficient wattage to provide desired heat. Unless otherwise specified, install heaters directly below bottom shelf, mounted in suitable channels and interconnect with fire resistive covered nickel wire in accordance with State Electrical Codes. Furnish each fixture with one (1) or more thermostatic control, with pilot light indicator.
 - 2. Wiring shall be properly protected in metal enclosures as called for by State Electrical Code and Underwriters Laboratory

3. Exposed electrical outlet boxes on fabricated equipment shall be stainless steel and shall be supplied and mounted by the Food Service Equipment Subcontractor ready for wiring by Electrical Subcontractor.
4. Internal wiring for fabricated equipment items, including electrical devices built into or forming an integral part of these items shall be furnished and installed by the Food Service Equipment Subcontractor in his factory with items wired complete to a junction box within the fixture ready for final connection to building lines by Electrical Subcontractor. Receptacles shall be grounding type listed by Underwriters Laboratories and approved for use by the National Electrical Code. Each single item of fabrication shall be wired to the minimum number of junction boxes possible for that piece of equipment.
5. Unless otherwise specified, furnish cord-connected items with cord sets not exceeding 6 feet in length. Cord sets shall contain an equipment grounding conductor and shall be furnished with caps or plugs listed or recognized by Underwriters Laboratories, Inc. Cords shall be listed by Underwriters Laboratories, Inc.

L. Pipestands and Frames:

1. Construct pipestands for open base tables or dish tables of 1-5/8 inch 16 gauge stainless steel. Construct stringers and cross braces of same material. Weld joints between legs and cross braces and grind to a smooth finish.
2. Cross rails supplied to reinforce each leg. Legs anchored to closed gussets at top only and without cross rails are not acceptable except in case of sinks. Fit uprights at top with die-stamped fully enclosed gussets stud-bolted to underside of top with cadmium-plated lock nuts. Where stainless steel base is called for, stainless steel gussets will be used.

M. Feet:

1. Fit pipe legs with sanitary die-stamped stainless steel bullet shaped feet, fully enclosed with slightly rounded bottom to protect floor. These shall have a total adjustment of 1 inch with thread unexposed.
2. Mount cabinet type fixtures on 6 inch die-stamped sanitary one-piece stainless steel feet, capable of an adjustment of 1 inch with thread unexposed.

N. Table Tops (metal):

1. Metal table tops shall be of 14 gauge stainless steel. Shop seams and corners shall be welded, ground smooth and polished. Brace tops with 1 inch by 1 inch by 4 inch galvanized channel running length of table. Cross angles shall be furnished at intermediate legs. Bracing shall be stud bolted to underside of top with cadmium plated lock nuts. Sound deadening mastic shall break metal-to-metal contact between angle bracing and underside of top.
2. Provide field joints in top where necessary. Locate field joints for practical construction and consistent in size, convenient for shipping and accessibility into building.
3. Metal top edges shall be turned down 1-3/4 inch in a bullnosed roll except where otherwise called for in Itemized Specifications and/or Fabrication Drawings/Details.

O. Dish Table Tops:

1. Construct tops of dish tables from 14 gauge stainless steel with free edges turned up 3 inches and finished with die-formed sanitary rolled rim. Sides adjacent to walls or higher fixtures flanged up 10 inches and back 1-1/2 inches at 45 degree angle and vertically down one inch, except where otherwise called for in Itemized Specification and/or Fabrication Drawings/Details. Interior horizontal and vertical corners shall be coved on 5/8 inch radius. Outside radius of rolled rim corners concentric with inside cove brace with 1-1/2 inch by 1-1/2 inch by 1/8 inch stainless steel angle front-to-back on approximately 24 inch centers. Bracing shall be stud-bolted to underside of top with cadmium plated lock nuts. Sound deadening mastic shall break metal-to metal contact between angle bracing and underside of top.
2. Mount dish table tops on tubing legs and connecting rails.
3. Provide full-length splashes with closed ends.

P. Cabinet Bases:

1. Enclosed bases or cabinet bodies shall be of 18 gauge stainless steel or as called for in Itemized Specifications. Body shall be enclosed on front and ends, with body corners square. Ends shall terminate at operators side in a 2 inch wide vertical mullion. Mullion shall be in accordance with NSF requirements. Body shall be braced at top with 1-1/2 inch by 1-1/2 inch by 1/8 inch stainless steel angle frame work with angles spaced on approximately 24 inch centers. Body shall be mounted on 6 inch high stainless steel bullet counter legs, welded to 12 gauge gussets, which in turn shall be welded to the body.
2. In the case of fixtures fitting against or between the walls, the bodies shall be set in 1 inch from the wall line, but tops will extend back to wall line. This will permit adjustment to wall irregularities. A vertical trim strip of the same material as body shall be provided and installed at ends or rear of fixture to close gap between body and wall.

Q. Elevated Cabinets: Top shall be constructed of 20 gauge material or as called for in Itemized Specifications with edges turned down 1-1/2 inches from rear to front. Twenty (20) gauge body shall be enclosed on back and ends with bottom and intermediate shelves. Ends shall terminate at front in a 2 inch mullion. Mullion shall be open in accordance with NSF. Intermediate stationary shelf shall be welded to body. Back shall be fitted with channels for supporting cabinet to wall. Shelves shall be 18 gauge stainless steel.

R. Sliding Doors: Doors shall be double wall constructed with exterior and interior of 18 gauge stainless steel, fitted at top with steel ball bearing roller, operating in die-formed overhead track of same material as door exterior. Guide pins shall be located on bottom shelf at center of opening. Doors shall be fitted with die stamped, stainless steel recessed handles and a stainless steel channel for guiding door at bottom.

S. Hinged Doors: Doors shall be double pan-shaped with exterior and interior of 18 gauge stainless steel. Hinged doors, flush type, shall be mounted on concealed stainless steel slip joint hinges. Doors shall have integral, flush handles and shall be fitted with magnetic catches.

T. Drawers: Drawer bodies shall be die-stamped pans, sizes and material as called for in Itemized Specifications and/or Fabrication Drawings/Details with horizontal and vertical corners generously coved. Drawer bodies or pans shall rest in and shall be removable from cradle. Cradle

shall be welded to die-stamped drawer face of 16 gauge stainless steel. Drawer face shall be furnished with die-stamped integral handle. Cradle shall be furnished with ball bearing steel rollers and stops. Drawer housing shall be complete with ball bearing steel rollers and built-in self-closing track to accommodate rollers on cradle.

- U. Undershelves for Open Bases: Undershelves on open base tables shall be solid, of 16 gauge stainless steel.
- V. Interior Shelves for Cabinet Bases: Interior shelves in cabinet bodies and enclosed bases shall be solid, of 16 gauge stainless steel with set-back construction. Provide non-removable shelves with ends and backs turned up 1-1/2 inches against body of fixture, and welded to same. Front edge shall be further braced with longitudinal centered 1-1/2 inch by 1-1/2 inch by 1/8 inch angles.
- W. Pipe Chases:
 - 1. Where top arrangement of enclosed base table make it necessary for plumbing and supply piping to be passed through base, this piping shall be enclosed in suitable pipe chase with easily removable access panels. These access panels are not to be held in place with screws or latches, but formed up in a pan shape, removable with out tools.
 - 2. In detailing fixtures, the Food Service Equipment Subcontractor shall consult with the Mechanical and Electrical Subcontractor to be certain that due allowance is made for traps or other controls and fittings.
 - 3. Where plumbing and supplying piping pass through shelves on open base tables, shelves neatly punched or die-stamped for piping, the Food Service Equipment Subcontractor shall note location of such pipe chases or stamped pipe openings on his plan and/or detail drawings. Unless otherwise specified, shelves in these fixtures shall be turned up a minimum of 3 inches at edge of pipe chase. These shall be of sufficient size to accommodate necessary risers, so that additional holes need not be cut. The Food Service Equipment Subcontractor shall caution the Mechanical Subcontractor to rough-in as near to these chases as possible, so risers from rough-in to final connection run through existing chases and/or slots.
- X. Elevated Shelves: Elevated shelves shall be constructed of 16 gauge stainless steel, unless otherwise called for with edges and brackets per Fabrication Details. Shelves shall be mounted on solid stainless steel gusset type wall brackets. If table mounted, supports shall be stainless steel tubing of size and gauge called for in Fabrication Details and mounted in accordance with one of the following:
 - 1. Supports mounted to flat surface (metal), without undercounter restrictions, shall be bolted through top with 3/4 inch stainless steel bolt into steel bushings wedged into tubing or welded into flange welded to table top as called for in Fabrication Details.
 - 2. Supports mounted to flat surface (maple or composition) shall be surface mounted with raised ferrules and set screws.
 - 3. Supports mounted to rolled rim shall be contoured to match roll and mounted with raised ferrules and set screws.

4. Supports mounted to table riser, use stainless steel saddle brackets mounted to riser or mounted through riser to angle bracket and welded to riser and bracket as called for in Fabrication Details.

Y. Sinks:

1. Sinks shall be of size called for and constructed of 14 gauge stainless steel with backs, bottoms, and front formed of one continuous sheet with ends welded in place.
2. Horizontal edges and vertical corners of sink shall be covered on 3/4 inch radius. Two and three compartment sinks shall have double wall partitions of same material as sink. Intersections between partitions and sink body shall be covered on 3/4 inch radius, all welded construction.
3. Bottom of each compartment shall have six (6) radial grooves pitched to drain depression. Sinks shall have 2 inch basket lever-wastes unless otherwise specified.
4. Front and end edges of sink shall be finished with 1-1/2 inch diameter semi-roll with rounded corners, with entire roll terminating against rear splash and fully welded and polished. Back turned up 6 inches at work table w/ sinks and 12" at pot sinks with 1-1/2 inch turn back at top and ends on 45 degree angle and vertically down 1 inch, except where otherwise called for in Itemized Specification and/or Fabrication Drawings/Details. Ends of splash shall be closed.
5. Equip drawers, cabinets, and doors with tumbler locks and keys.

Z. Casters:

1. Where called for in Itemized Specifications, provide heavy-duty, neoprene ball bearing swivel casters.
2. Unless otherwise specified, casters shall have foot-activated locking brakes.

2.04 WALK-IN REFRIGERATION

- A. Construction: Construct the box using a 4" thickness of frost foamed-in-place urethane insulation with a K factor of .13" or less between die-formed metal pans with materials as contained hereinafter. Flange edges of metal pans in on all sides and construct panels with gasketed joints. Join sections by means of cam actuated joining devices. Distance between locks not to exceed 46". Each locking device shall consist of a cam-action, hooked locking arm placed in one section, and a steel rod precisely positioned in the adjoining section so that by rotating the locking arm, the hook engages over the rod with cam-action draws the sections tightly together. Locks are actuated from inside the walk-in. Provide an aligning device in at least one joining device per vertical section. Provide entrance door flush with walls of unit. Provide door with 4" insulation same as walls, a 2'-10" x 6'-4" high clear opening, balloon type gasket on three sides, and adjustable sweep gasket on the bottom. Provide door with two cam lift positive closing polishing aluminum hinges with nylon bearings, and a polished aluminum latch assembly with cylinder lock. The inside safety release handle shall operate on no more than a quarter turn, and shall be effective for all locking methods employed by manufacturer. The Food Service Equipment Subcontractor shall provide 14 gauge stainless steel thresholds. Build heater

wires into the front of door sections under the metal at the point of gasket contact. Construct the box in accordance with N.S.F. Standards, and provide the standard dial thermometer.

- B. **Materials:** Construct exterior surfaces of walk-in box assembly, except exposed surface of walk-in cooler and freezer, of 22 gauge galvanized steel; interior surfaces (with the exception of interior floors) of aluminum; exposed exterior surface of walk-in cooler and freezer of stucco patterned .042" aluminum; interior floor of 14 gauge galvanized steel when box is depressed and 12 gauge mill aluminum when box is specified with an interior floor ramp; and doors of stainless steel on both sides unless otherwise specified in Itemized Specification.
- C. **Accessories:** Provide box with interwired vapor proof light fixtures and guards (quantity as stated in Itemized Specification) operative from an outside light switch and pilot light. The Food Service Equipment Subcontractor shall provide and install 18 gauge trim angles at the sides and a closer panel from the box to the adjacent finished ceiling at the front. The fabricated panel at top shall support finished ceiling provided by the Contractor. Provide walk-in box with a dual temperature monitoring alarm system as described herein. The Food Service Equipment Subcontractor shall provide and install 36" H, 16 gauge stainless steel diamond tread kick panel on exposed interior surface of walk-in box door. The Food Service Equipment Subcontractor shall seal kick panels to box, break all edges, and secure panels with flat head stainless steel screws.
- D. **Mechanical Refrigeration:**
1. **Furnish and install complete refrigeration for the walk-in boxes in accordance with the plans and Itemized Specification. Include condensing unit, evaporator coils, piping and accessories specified, and as required to provide complete and satisfactory systems in accordance with accepted refrigeration practice.**
 2. **Refrigerant Piping:** Furnish and install all of the interconnecting piping between the condensing units and their respective unit coolers. Install piping in a neat and workman-like manner with adjustable hangers spaced at not more than 10 foot intervals on all horizontal runs, or 6 foot intervals on vertical runs. Provide line sizes in accordance with equipment manufacturer's standards and best refrigeration practice, to assure proper refrigerant feed to evaporators, avoid excessive pressure drop, prevent excessive amounts of lubricating oil from being trapped in any part of the system, protect the compressors from loss of lubrication in all times, prevent liquid refrigerant from entering the compressor during operation or idle time, and maintain a clean and dry system. All refrigeration piping to be a Type L, ACR grade, hard drawn seamless copper tubing, wrought type copper fittings with silver bearing soldered joints. In each refrigeration system, include liquid and suction cut-off valves at the evaporator, with a thermostatic expansion valve and solenoid. Furnish and install all necessary sleeves for refrigerant and evaporator condensate piping wherever piping passes through a ceiling or wall. Fabricate sleeves of a non-conductive gray plastic tubing, sized at least 1/4" larger than piping or conduit and neatly pack with brine putty after installation.
 3. **Condensate Drains:** Condensate drain piping from the unit coolers to open drains shall be provided by the Plumbing Subcontractor. Provide drain line heaters in the freezer compartment as part of this section.
 4. **Above Freezing Areas Insulation:** Cover all suction lines for refrigerated areas having a temperature above freezing with 1/2" Armaflex insulation being applied to these lines as

they are being installed so that insulation will not have to be split, and in accordance with the manufacturer's recommendation.

5. Below Freezing Areas Insulation: Cover all suction lines for refrigerated areas having a temperature below freezing with 3/4" Armaflex insulation being applied to these lines as they are being installed so that insulation will not have to be split, and in accordance with the manufacturer's recommendation.
6. Condensate Lines: Insulate all condensate lines passing through the refrigerated areas similarly with 1/2" Armaflex insulation.
7. Temperature Controls: Control the temperature in each refrigerated area by means of a remote bulb thermostat wired to actuate a solenoid valve in the liquid line with the compressor operation controlled by the low-pressure cut-out switch. Adjust thermostats to maintain the room temperature specified.
8. Defrost Controls: Provide all refrigerated areas with a time initiated defrost cycle. Locate the defrost time clock at the condensing units. Provide contacts capable of handling electric load of electric defrost of evaporator coils.
9. Mounting and Wiring: Mount the thermostat on the wall behind the evaporator coil. The Electrical Subcontractor shall interwire between the condensing unit defrost clock, thermostat, liquid line solenoid valve and the evaporator coil. Provide adequate wiring diagrams and guidance to achieve correct operation of system.
10. Refrigerant Testing: Pressure and leak test the entire system for no less than 100 P.S.I.G., clean and dehydrate by maintaining a vacuum of 50 microns or lower for a period of five hours. The required operating charge of refrigerant and oil, if necessary, shall be added and the entire system tested for performance. Mark each system clearly as to the refrigerant type required.
11. Guarantee: Provide a mechanical guarantee on all mechanical refrigerant equipment for a period of one year after date of acceptance by the Owner, and provide an emergency service, free of charge, whenever necessary on a 24-hour, seven-day-a-week basis during the guarantee period. The installer shall provide the year's service, and under no circumstances will the service policy be sublet to another refrigerant contractor. Locate the name of the installer's service agency for the guarantee period in a prominent place on the condensing units. Repair any leaks that occur during the first year period of operation after acceptance by the Owner and cover any necessary refrigerant added during this period at no expense to the Owner. Provide the condensing units with an additional four-year warranty to commence upon the completion of the aforementioned guarantee.
12. Guarantee equipment to maintain the following temperatures:
COOLER +35 degrees F.
FREEZER -10 degrees F.
13. Condensing Unit: Design the condensing unit for operation with refrigerant that is in compliance with the "Montreal Protocol". Capacity, horsepower, design suction and condensing temperatures of each unit are specified in the equipment schedule contained hereinafter. Each unit shall consist of a motor, compressor, refrigerant, condenser, liquid receiver, compressor service valves and a dual high-low pressure control. Provide the compressor with motor, built-in suction gas filter, oil sight glass and mounted unit on a

steel base. Compressor shall not exceed 1750 R.P.M. with a maximum piston speed of 600 R.P.M. Supply the condensing units with an air-cooled condenser constructed of copper tube and aluminum fin condensers together with a fan motor assembly, or water cooled condensing unit to be connected to chilled water loop. Refer to itemized specifications.

14. Condensing Unit Housing: Provide the unit with a factory mounted prewired control panel complete with circuit breakers and/ or fuse disconnect, and with defrost clock. Provide, in addition, a liquid line assembly consisting of a filter-drier, sight glass and shut-off valve, a factory mounted liquid line vibration eliminator and a suction line vibration eliminator. Provide the unit with the proper controls and crankcase heater for outdoor installation. Mount the units on steel legs with flanged feet and protect the unit with a weatherproof cowl constructed of galvalume with hinged compressor compartment cover, and weatherproof electrical panel. Provide positive winter control by means of a factory mounted floated head pressure control valve. Verify location of condensing units with the Contractor. For roof mounted applications, secure to structure provided by the Contractor. Related sub-trades shall make the final electrical and drain connections and the interwiring between the terminal clocks and the evaporator coils.
15. Evaporator Coil - Walk-In Cooler: Provide evaporator for cooler box, designed for installation at the juncture of wall and ceiling. Construct unit so that air is drawn in through the finned surface and discharged parallel to the ceiling. Construct finned coil of copper tubes with aluminum fins, 6 per inch. Provide fan motor with a drip proof, continuous fan duty type, operating at no more than 100 R.P.M. Construct casing of aluminum. Construct the unit cooler hardware of stainless steel. Provide a suction-liquid heat exchanger and mount within the casing. Construct coil in accordance with N.S.F. Standards. The Electrical Subcontractor shall perform all interconnect wiring in the Cooler.
16. Evaporator Coil - Walk-In Freezer: Use the automatic electric defrost system providing application of heat in the walk-in freezer and provide one coil, with electric defrost heaters, suction-liquid heat interchanger, drainline heater cable, timer and safety heat thermostat. Provide defrost system with temperature termination to prevent excessively long defrost period. Construct coil of copper tubes and aluminum fins, 6 per inch. Enclose stainless steel sheathed electric heating elements- 3/8" O.D. within the collared fin holes. Heat the drain pan by means of stainless steel sheathed elements held in place by spring clips. Construct casing with stainless steel hardware. Provide fan motors of a drip proof, continuous fan duty type operating at not more than 1500 R.P.M. Provide installation of the electric defrost system in accordance with the manufacturer's recommendations. Construct coil in accordance with N.S.F. Standards. The Electrical Subcontractor shall perform all interconnect wiring in the freezer.
17. Furnish and install 3/8" diameter threaded nylon mounting rods with stainless steel washers and nuts, and reinforcing angle at the exterior top of the rooms for the mounting of the unit evaporators.

2.05 FIELD QUALITY CONTROL

- A. The Owner, Architect or their duly authorized representative shall have free access to Food Service Equipment Subcontractor's shop or shops during the construction of this equipment for the purpose of making inspections to see that plans, specifications, and detail drawings are be-

ing adhered to carefully. The Food Service Equipment Subcontractor shall correct errors found during these inspections to the extent and within scope of plans, specifications and detail drawings.

- B. Material delivered to site may be inspected by Owner, Architect or their authorized representative. The Food Service Equipment Subcontractor shall within a reasonable time after receiving written notice from Architect to that effect, proceed to remove from grounds or building materials, fixtures or apparatus condemned by Architect or take down and remove portions of work which Architect deems as failing to conform to drawings and specifications and to conditions of the contract.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

- A. Rough-in-work: Require Installer of food service equipment to examine roughed-in mechanical and electrical services and installation of floors, walls, columns and ceilings, and conditions under which the work is to be installed; and to verify dimensions of services and substrates before fabricating and installing the work. Notify the Food Service Equipment Subcontractor in writing of unsatisfactory conditions for proper installation of food service equipment. Do not proceed with fabrication and installation until unsatisfactory dimensions and conditions have been corrected in a manner acceptable to the Installer.

3.02 INSTALLATION

- A. Service Lines and Equipment Connections: Comply with applicable requirements of Division-22 for piping connections and piping systems. Comply with applicable requirements of Division-26 Sections for electrical work including equipment connections.
- B. Set each item of non mobile and non portable equipment securely in place, leveled and adjusted to correct height. Anchor to supporting substrate where indicated and where required for sustained operation and use without shifting or dislocation.
- C. Conceal anchorages where possible. Adjust counter tops and other work surfaces to a level tolerance of .0625 inch maximum offset, and maximum variation from level or indicated slope of .0625 inch per foot.
- D. Complete field assembly joints in the work (joints which cannot be complete in shop) by welding, bolting and gasketing, or similar methods as indicated. Grind welds, smooth and restore finish. Set or trim gaskets flush, except for "T" gaskets as indicated.
- E. Treat enclosed spaces inaccessible after equipment installation by covering horizontal surfaces with powdered borax at a rate of four ounces per square foot.
- F. Install closure plates and strips where required, with joints coordinated with units of equipment. Make joints airtight, waterproof, vermin-proof and sanitary for cleaning purposes. In general, make sealed joints not less than .125 inch at .25 inch depth. Shape exposed surfaces of sealant slightly concave, with edges flush with faces of materials at joint. At internal corner joints, apply sealant or gaskets to form a sealant-filled or gasket joints up to .50 inch joint width; metal closure strips for wider joints, with sealant application each side of strips. Anchor gaskets mechanically or with adhesives to prevent displacement.

3.03 CLEANING AND RESTORING FINISHES

- A. After completion of installation, and completion of other major work in food service areas, remove protective coverings, and clean food service equipment, internally and externally. Restore exposed and semi-exposed finishes to remove abrasions and other damages; polish exposed metal surfaces and touch-up painted surfaces. Replace work which cannot be successfully restored.

3.04 TESTING, START-UP AND INSTRUCTIONS

- A. General: Execute the start-up of food service equipment after service lines have been tested, balanced and adjusted for pressure, voltage and similar considerations; and after water and steam lines have been cleaned and treated for sanitation.
- B. Test each item of operational equipment to demonstrate that it is operating properly and that controls and safety devices are functioning. Repair or replace equipment which is found to be defective in its operation, including units which are below capacity or operating with excessive noise or vibration.
- C. Instruct Owner's operating personnel in proper operation and maintenance procedures for each item of operational food service equipment.
- D. Final Cleaning: After testing and start-up, and before the time of substantial completion, clean and sanitize food service equipment, and leave in condition ready for use in food service.

3.05 ITEMIZED SPECIFICATION

ITEM # 1 SPARE NO.

ITEM # 2 SPARE NO.

ITEM # 3 SPARE NO.

ITEM # 4 FLIGHT TYPE DISHMACHINE - STEAM

Quantity: One (1)

Manufacturer: MEIKO (or equal by Hobart or Champion)

Model: CUSTOM

1. One (1) Model CUSTOM Provide as per custom Meiko Shop Drawings as shown on sheet K6.2

ITEM # 4A CONDENSATE HOOD

Quantity: One (1)

Manufacturer: BY OTHERS

Model: CUSTOM

1. One (1) Model CUSTOM Provide as per custom Halton Shop Drawings and the following:
2. Due to ceiling height restrictions a standard hood will not fit. HVAC contractor will provide custom ventilation solution for this machine.
3. Pipe condensate drain to dishtable below.
4. Provide unit with hood mounted fan switch.
5. Provide unit to meet all local, state and federal codes.
6. Provide steel hanger rods and brackets.
7. Provide stainless steel closure panels to ceiling on front, sides and between adjacent hoods; verify ceiling height with the General Contractor.
8. Coordinate power shut-off and integration with building system by General Contractor.
9. Verify and coordinate the fabrication with regard to delivery and access into building.

ITEM # 5 DISH CART

Quantity: Three (3)

Manufacturer: Cambro (or equal by Caddy or Carlisle)

Model: ADCS110

1. Three (3) Model ADCS110 Dish Cart, adjustable, 28-5/8"W x 37-7/8"L x 31-7/8"H, (6) towers, minimum dish size 4-5/8", maximum dish size 13", includes vinyl dust cover, (2) 5" swivel casters with brakes and (2) 10" Easy Wheels, polyethylene construction, black, NSF

ITEM # 6 TRAY CONVEYOR

Quantity: One (1)

Manufacturer: Avtec (or equal by Aerowerks or Gates Manufacturing)

Model: CUSTOM

1. One (1) Model CUSTOM Provide as per custom Avtec Shop Drawings on sheet K6.1

ITEM # 7 SILVER SOAK SINK

Quantity: Two (2)

Manufacturer: Avtec (or equal by Aerowerks or Gates Manufacturing)

Model: CUSTOM

1. Two (2) Model CUSTOM Provide as per custom Avtec Shop Drawings on sheet K6.1

ITEM # 8 MOBILE WORK TABLE

Quantity: One (1)

Manufacturer: Avtec (or equal by Aerowerks or Gates Manufacturing)

Model: CUSTOM

1. One (1) Model CUSTOM Provide as per custom Avtec Shop Drawings on sheet K6.1

UConn North Hall Dishroom Storrs, CT

January 18, 2019 (ORIGINAL ISSUE)

January 16, 2020 (REVISED)

--- IMPORTANT ---

1. This is a working document and will be revised throughout the design process.
2. The information contained in this Foodservice Cutbook is NOT intended to be part of the Bid Documents. The Foodservice Cutbook is supplied for design team informational purpose only.
3. As revisions are made, the cutbook will be reissued and will include a dated revisions page which will indicate which items have been revised.

PREPARED BY:

Colburn & Guyette Consulting Partners, Inc.
100 Ledgewood Place Ste 104
Rockland, MA 02370
781-826-5522

**UConn North Hall Dishroom
Storrs, CT**

FOODSERVICE EQUIPMENT CUTBOOK

January 18, 2019 (ORIGINAL ISSUE)
January 16, 2020 (REVISED)

PREPARED BY:

Colburn & Guyette Consulting Partners, Inc.
100 Ledgewood Place Ste 104
Rockland, MA 02370
781-826-5522

UConn North Hall Dishroom Storrs, CT

January 16, 2020

--- IMPORTANT ---

1. The information contained in this Revised Foodservice Equipment Cutbook is NOT intended to be part of the Bid Documents. The Revised Foodservice Equipment Cutbook is supplied for design team informational purposes only.
2. Bookmarks that appear in *RED* the items that have been revised. This Revised Foodservice Equipment Cutbook supercedes all previous Foodservice Equipment Cutbooks. Bookmarks that appear in any color other than what is indicated in these instructions reflect changes from previously issued Foodservice Equipment Cutbooks. See corresponding itemized revision list(s) within the Revisions Bookmark if applicable.
3. Please forward this Revised Foodservice Equipment Cutbook to all team members that have received a copy of the original Foodservice Equipment Cutbook.

PREPARED BY:

Colburn Guyette Foodservice Design
100 LedgeWood Place, Suite 104
Rockland, MA 02370
781-826-5522

UConn North Hall Dishroom
Storrs, CT

FOODSERVICE EQUIPMENT CUTBOOK REVISIONS

January 16, 2020

REVISED ITEMS:

Item No.	Description
4	FLIGHT TYPE DISHMACHINE – STEM
8	SINK WITH DRAINBOARD
9	MOP SINK
10	MOBILE WORK TABLES
11	SPARE NUMBER
12	SPARE NUMBER
13	HOSE REEL ASSEMBLY

PREPARED BY:

Colburn Guyette Foodservice Design
100 Ledgewood Place, Suite 104
Rockland, MA 02370
781-826-5522

Submittal Sheet

01/16/2020

ITEM# 1 - SPARE NO.

<Spare No.>

Submittal Sheet

01/16/2020

ITEM# 2 - SPARE NO.

<Spare No.>

Submittal Sheet

01/16/2020

ITEM# 3 - SPARE NO.

<Spare No.>

Submittal Sheet

01/16/2020

ITEM# 4 - FLIGHT TYPE DISHMACHINE - STEAM (1 EA REQ'D)

MEIKO B-M74 P8

M-iQ Flight Type Rackless Conveyor Dishwasher, high temperature sanitizing with built-in booster, multiple tank configuration (2-tank with prewash), water consumption 56.2-56.8 gallons/hour, 9,995-10,828 dishes/hour, 29-1/2" wide conveyor belt, prewash, wash, power rinse, pumped final rinse, blower dryer, contact-plus zone between wash & power rinse tanks to minimize soil carryover, steam coil or electric tank & booster heat, fully automatic operation, double-wall insulated stainless steel construction, connection for external vent fan control, level conveyor belt throughout full length of machine, M-Filter active tank water filtration with active tank level management, 3-stage variable output built-in booster heater, Waste Air Heat Recovery System, single point vent at cool end of machine, intuitive cleaning features, glass touch-screen controls with selectable languages, configurable based on requirements includes installation supervision, commissioning & training by MEIKO field engineer, NSF, cETLus, ENERGY STAR®

M-iQ B-M74 V6 N02 P8

460V

Steam Heat (Verify Pressure)

Left to Right

1200mm Load

600mm Prewash

800mm Wash

200mm Contact Plus Zone

800mm Power/Final Rinse

1100mm Blower Dryer

1200mm Unload

Overall Length 5900mm (19' 4-1/4")

ACCESSORIES

Mfr	Qty	Model	Spec
MEIKO	3		Hinged Doors (3 required)



M-iQ

B-M74 SERIES

HOT WATER SANITIZING MULTIPLE-TANK FLIGHT TYPE WAREWASHERS

The clean solution

Special Features:

- Industry-leading low water, energy and chemical consumption**
 At less than 60 gallons (227 liters) per hour, M-iQ is one of the most efficient dishwashers in the world. Advanced technologies further reduce energy and detergent use.
- M-iQ Filter Technology**
 Each tank features a multiple stage filtration process that first collects food soil, then flushes it out of the tank completely in high-pressure cycles. This improves performance, eases cleanup and reduces detergent consumption by up to 50%.
- M-iQ Airflow Management**
 M-iQ features an advanced, fully integrated airflow system that retains and redirects hot air within the machine. This improves heating efficiency and reduces exhaust emissions.
- M-iQ Tank Management**
 Each tank is equipped with an M-Filter system. Water levels are monitored and controlled intelligently and automatically. M-iQ automatically diverts water within the machine to maintain optimum level control and soil distribution.
- M-iQ Washing Dynamics**
 M-iQ employs a higher-pressure wash for improved soil removal and reduced water consumption. Water flow has been modeled using computational fluid dynamics. Water, energy and chemical consumption are all dramatically reduced.
- M-iQ Energy Management**
 M-iQ incorporates a 3-stage energy control system, as well as a variable-output booster heater, for optimal energy balance. The system dynamically adjusts to changes in heating distribution for minimal energy consumption.
- M-iQ Control System**
 M-iQ features a *CC Touch* glass touch screen with a high resolution color display. Screen information is customized based on the machine's operating mode for fast, intuitive operation. Kitchen management, dishroom staff and service personnel can quickly call up customized information, or save data to the controller's built-in memory.
- M-iQ Intuitive Cleaning**
 M-iQ features an automatic cleaning mode. Assisted by the soil removal capabilities of the M-Filter, this dramatically reduces cleanup time. Areas that require regular manual cleaning are marked in **blue** for less wasted effort by the staff.



Standard Features:

- ENERGY STAR Qualified
- Wash chamber with 3 HP (2.2 kW) pump motor
- Power rinse chamber with 1 HP (0.75 kW) pump motor
- Pumped final rinse with 3/4 HP (0.55 kW) pump motor
- Integral heated blower dryer with 2/3 HP (0.5 kW) motor
- Choice of prewash sections:
 - B-M74 V6 N** P8:** 1' 11-5/8" (600mm) prewash with 1 HP (0.75 kW) pump, conveyor speed 6.0' (1.8m)/min., 56.2 gals. (212.7 liters)/hr.
 - B-M74 V8 N** P8:** 2' 7-1/2" (800mm) prewash with 3 HP (2.2 kW) pump, conveyor speed 6.5' (2.0m)/min., 56.8 gals. (215.0 liters)/hr.
- Conveyor width 29-1/2" (750mm); passing height 15-3/4" (400mm); accommodates standard 18 x 26" sheet pans
- 304-series stainless steel construction
- Fully automatic operation. Prewash, wash, power rinse and final rinse are activated only when ware is present
- Front-sloping tanks for complete drainage and easier cleaning. Automatic self-cleaning and drain feature is accessed from control panel to eliminate manual drain levers
- Double-wall insulated construction on front, top and back improves operator safety, conserves heating energy, and reduces noise and heat loss into the dishroom. Insulation is fully waterproofed to eliminate heavy doors and unsanitary waterlogging
- Standard lifting doors are full-width for each chamber, including the blower drying zone, for improved access
- Pumps are vertically-mounted to be self-draining and easily removed for servicing. Pumps include safety alert feature to inform the operator of a leaking pump seal

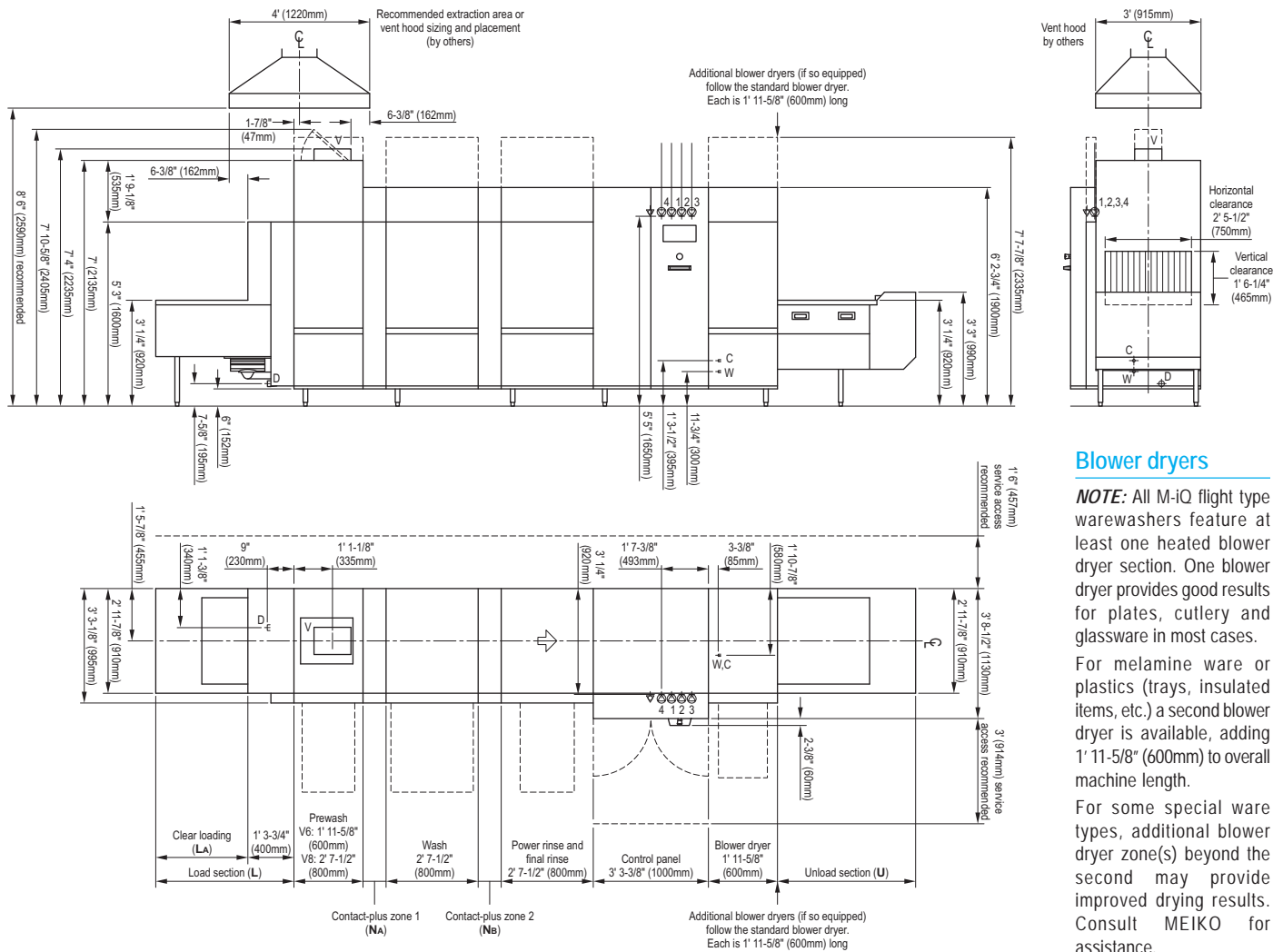
Optional Features:

- Hinged doors
- Drain water tempering
- Flanged, bolt-down feet
- Single-point electrical connection (electrically-heated machines only; standard on steam-heated machines)

This dishwasher is compliant with the Reduction of Lead in Drinking Water Act (2011) amendment to the Safe Drinking Water Act (SDWA).



M-iQ Flight - B-M74 Series - Electric heat, left to right



Blower dryers

NOTE: All M-iQ flight type warewashers feature at least one heated blower dryer section. One blower dryer provides good results for plates, cutlery and glassware in most cases. For melamine ware or plastics (trays, insulated items, etc.) a second blower dryer is available, adding 1' 11-5/8" (600mm) to overall machine length. For some special ware types, additional blower dryer zone(s) beyond the second may provide improved drying results. Consult MEIKO for assistance.

Load sections (L) Clear loading (LA)

3' 3-3/8" (1000mm)	1' 11-5/8" (600mm)
3' 11-1/4" (1200mm)	2' 7-1/2" (800mm)
4' 7-1/8" (1400mm)	3' 3-3/8" (1000mm)
5' 3" (1600mm)	3' 11-1/4" (1200mm)
5' 10-7/8" (1800mm)	4' 7-1/8" (1400mm)
6' 6-3/4" (2000mm)	5' 3" (1600mm)
7' 2-5/8" (2200mm)	5' 10-7/8" (1800mm)
7' 10-1/2" (2400mm)	6' 6-3/4" (2000mm)
8' 6-3/8" (2600mm)	7' 2-5/8" (2200mm)
9' 2-1/4" (2800mm)	7' 10-1/2" (2400mm)
9' 10-1/8" (3000mm)	8' 6-3/8" (2600mm)

NOTE: Load sections with a lowered loading height of 2' 7-1/2" (800mm) are available for specific applications, such as when the loading area is underneath a table or tray conveyor. Consult MEIKO for details.

Recommended load sections:

- Single worker loading items while standing at the end of the machine - **L** = 3' 11-1/4" (1200mm)
- Two workers loading items, each standing on one side of the machine - **L** = 4' 7-1/8" (1400mm)
- Large items placed flat on the belt (totes, containers, etc.) - **LA** = 2' (600mm) longer than the item
- Operations with special delivery systems and/or multiple workers loading items may require extended load sections. Consult MEIKO for assistance.

Contact-plus 1 (NA) Contact-plus 2 (NB) Model number code

None	7-7/8" (200mm)	B-M74 V? N02 P8
7-7/8" (200mm)	7-7/8" (200mm)	B-M74 V? N22 P8
11-7/8" (300mm)	11-7/8" (300mm)	B-M74 V? N33 P8
1' 3-3/4" (400mm)	1' 3-3/4" (400mm)	B-M74 V? N44 P8
1' 7-5/8" (500mm)	1' 7-5/8" (500mm)	B-M74 V? N55 P8
1' 11-5/8" (600mm)	1' 11-5/8" (600mm)	B-M74 V? N66 P8
2' 7-1/2" (800mm)	2' 7-1/2" (800mm)	B-M74 V? N88 P8
3' 3-3/8" (1000mm)	3' 3-3/8" (1000mm)	B-M74 V? N1010 P8

NOTE: As ware proceeds through the machine and closer to the final rinse, the water contacting the ware becomes warmer and cleaner. Large items and flat items (particularly sheet pans, trays, totes, etc.) can carry over cooler, soiled water forward in the machine. The contact-plus zone provides a landing area for this water, allowing it to return to the previous tank. This reduces detergent consumption and tank heating energy use.

Wider contact-plus zones also provide a surface that may be used to front-mount detergent or rinse aid systems.

Recommended contact-plus zone configurations:

- For machines washing plates/glasswares - **N02**
- For machines washing a typical ware mix - cafeteria trays and some sheet pans in addition to plates and glasswares - **N22**
- For machines washing a high proportion of sheet pans - **N33**
- For machines washing large containers - **N44** or larger, depending on the size of the container
- For machines with front-mounted detergent and rinse aid dispensers - **N33** or larger, depending on the size of the dispensing systems

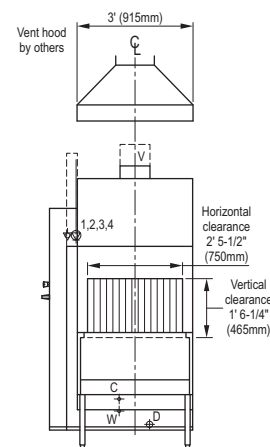
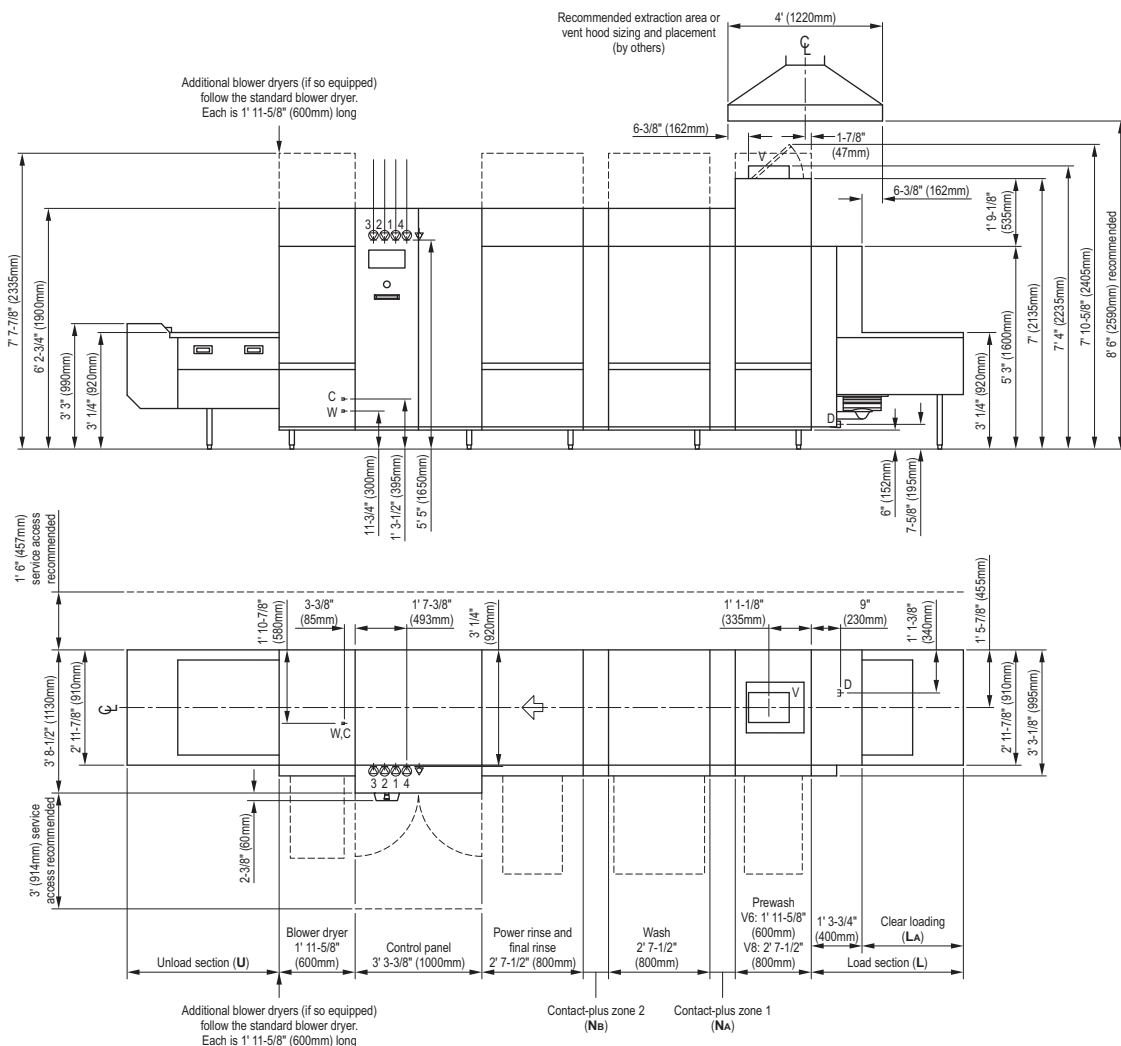
Unload sections (U)

2' 7-1/2" (800mm)
3' 3-3/8" (1000mm)
3' 11-1/4" (1200mm)
4' 7-1/8" (1400mm)
5' 3" (1600mm)
5' 10-7/8" (1800mm)
6' 6-3/4" (2000mm)
7' 2-5/8" (2200mm)
7' 10-1/2" (2400mm)
8' 6-3/8" (2600mm)
9' 2-1/4" (2800mm)
9' 10-1/8" (3000mm)

Recommended unload sections:

- Typical ware mix, limited space available - **U** = 3' 11-1/4" (1200mm)
- Typical ware mix, more space available - **U** = 4' 7-1/8" (1400mm) or longer for improved drying
- Large items placed flat on the belt (totes, containers, etc.) - **U** = at least 1' (300mm) longer than *twice* the length of the item

M-iQ Flight - B-M74 Series - Electric heat, right to left



Blower dryers

NOTE: All M-iQ flight type warewashers feature at least one heated blower dryer section. One blower dryer provides good results for plates, cutlery and glassware in most cases. For melamine ware or plastics (trays, insulated items, etc.) a second blower dryer is available, adding 1' 11-5/8\" (600mm) to overall machine length. For some special ware types, additional blower loading beyond the second may provide improved drying results. Consult MEIKO for assistance.

Load sections (L)	Clear loading (LA)
3' 3-3/8\" (1000mm)	1' 11-5/8\" (600mm)
3' 11-1/4\" (1200mm)	2' 7-1/2\" (800mm)
4' 7-1/8\" (1400mm)	3' 3-3/8\" (1000mm)
5' 3\" (1600mm)	3' 11-1/4\" (1200mm)
5' 10-7/8\" (1800mm)	4' 7-1/8\" (1400mm)
6' 6-3/4\" (2000mm)	5' 3\" (1600mm)
7' 2-5/8\" (2200mm)	5' 10-7/8\" (1800mm)
7' 10-1/2\" (2400mm)	6' 6-3/4\" (2000mm)
8' 6-3/8\" (2600mm)	7' 2-5/8\" (2200mm)
9' 2-1/4\" (2800mm)	7' 10-1/2\" (2400mm)
9' 10-1/8\" (3000mm)	8' 6-3/8\" (2600mm)

NOTE: Load sections with a lowered loading height of 2' 7-1/2\" (800mm) are available for specific applications, such as when the loading area is underneath a table or tray conveyor. Consult MEIKO for details.

Recommended load sections:

- Single worker loading items while standing at the end of the machine - **L** = 3' 11-1/4\" (1200mm)
- Two workers loading items, each standing on one side of the machine - **L** = 4' 7-1/8\" (1400mm)
- Large items placed flat on the belt (totes, containers, etc.) - **LA** = 2' (600mm) longer than the item
- Operations with special delivery systems and/or multiple workers loading items may require extended load sections. Consult MEIKO for assistance.

Contact-plus 1 (NA)	Contact-plus 2 (Nb)	Model number code
None	7-7/8\" (200mm)	B-M74 V? N02 P8
7-7/8\" (200mm)	7-7/8\" (200mm)	B-M74 V? N22 P8
11-7/8\" (300mm)	11-7/8\" (300mm)	B-M74 V? N33 P8
1' 3-3/4\" (400mm)	1' 3-3/4\" (400mm)	B-M74 V? N44 P8
1' 7-5/8\" (500mm)	1' 7-5/8\" (500mm)	B-M74 V? N55 P8
1' 11-5/8\" (600mm)	1' 11-5/8\" (600mm)	B-M74 V? N66 P8
2' 7-1/2\" (800mm)	2' 7-1/2\" (800mm)	B-M74 V? N88 P8
3' 3-3/8\" (1000mm)	3' 3-3/8\" (1000mm)	B-M74 V? N1010 P8

NOTE: As ware proceeds through the machine and closer to the final rinse, the water contacting the ware becomes warmer and cleaner. Large items and flat items (particularly sheet pans, trays, totes, etc.) can carry over cooler, soiled water forward in the machine. The contact-plus zone provides a landing area for this water, allowing it to return to the previous tank. This reduces detergent consumption and tank heating energy use.

Wider contact-plus zones also provide a surface that may be used to front-mount detergent or rinse aid systems.

Recommended contact-plus zone configurations:

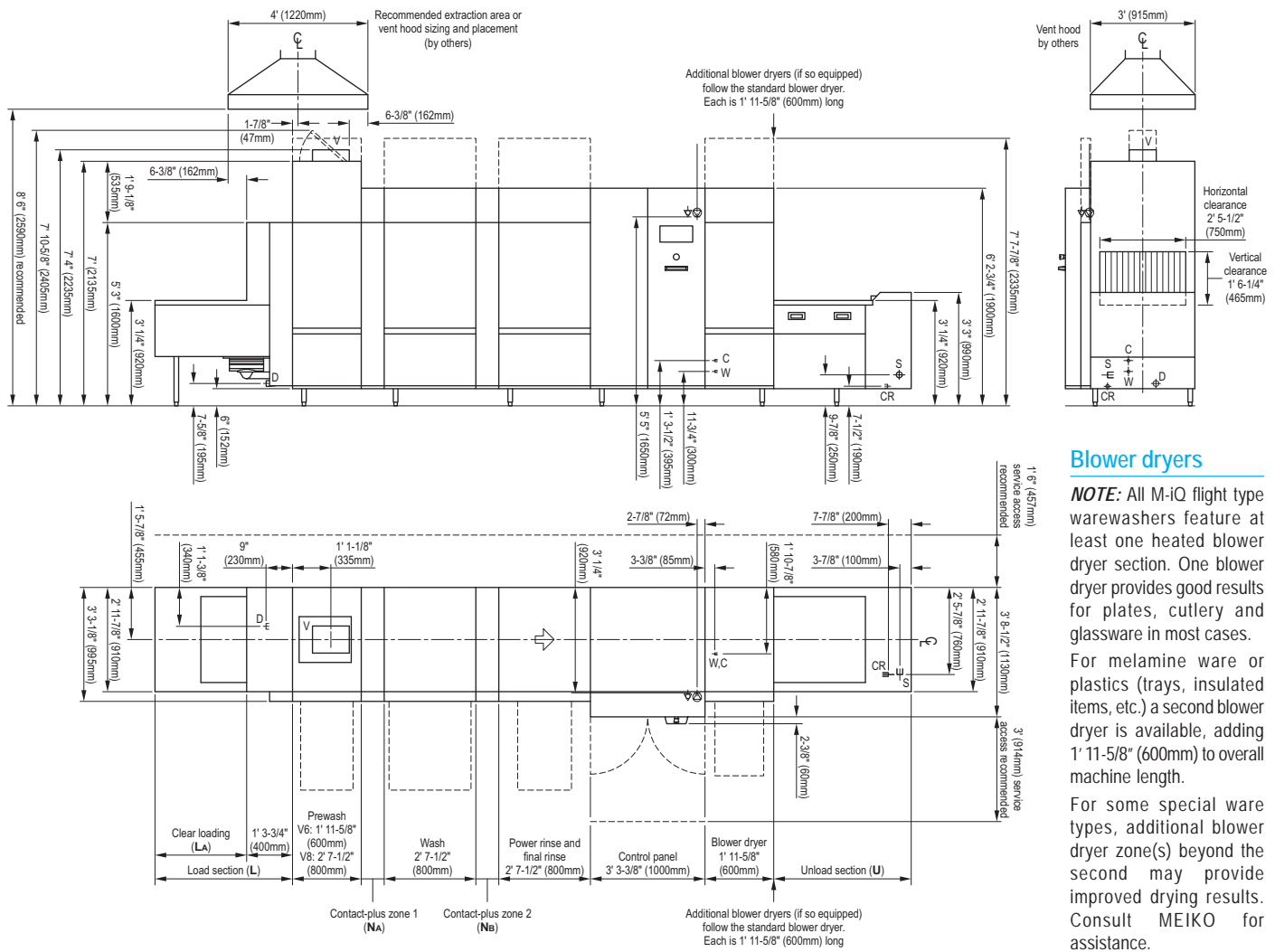
- For machines washing plates/glasswares - **N02**
- For machines washing a typical ware mix - cafeteria trays and some sheet pans in addition to plates and glasswares - **N22**
- For machines washing a high proportion of sheet pans - **N33**
- For machines washing large containers - **N44** or larger, depending on the size of the container
- For machines with front-mounted detergent and rinse aid dispensers - **N33** or larger, depending on the size of the dispensing systems

Unload sections (U)
2' 7-1/2\" (800mm)
3' 3-3/8\" (1000mm)
3' 11-1/4\" (1200mm)
4' 7-1/8\" (1400mm)
5' 3\" (1600mm)
5' 10-7/8\" (1800mm)
6' 6-3/4\" (2000mm)
7' 2-5/8\" (2200mm)
7' 10-1/2\" (2400mm)
8' 6-3/8\" (2600mm)
9' 2-1/4\" (2800mm)
9' 10-1/8\" (3000mm)

Recommended unload sections:

- Typical ware mix, limited space available - **U** = 3' 11-1/4\" (1200mm)
- Typical ware mix, more space available - **U** = 4' 7-1/8\" (1400mm) or longer for improved drying
- Large items placed flat on the belt (totes, containers, etc.) - **U** = at least 1' (300mm) longer than *twice* the length of the item

M-iQ Flight - B-M74 Series - Steam heat, left to right



Blower dryers

NOTE: All M-iQ flight type warewashers feature at least one heated blower dryer section. One blower dryer provides good results for plates, cutlery and glassware in most cases.

For melamine ware or plastics (trays, insulated items, etc.) a second blower dryer is available, adding 1' 11-5/8" (600mm) to overall machine length.

For some special ware types, additional blower dryer zone(s) beyond the second may provide improved drying results. Consult MEIKO for assistance.

Load sections (L)

Load section (L)	Clear loading (LA)
3' 3-3/8" (1000mm)	1' 11-5/8" (600mm)
3' 11-1/4" (1200mm)	2' 7-1/2" (800mm)
4' 7-1/8" (1400mm)	3' 3-3/8" (1000mm)
5' 3" (1600mm)	3' 11-1/4" (1200mm)
5' 10-7/8" (1800mm)	4' 7-1/8" (1400mm)
6' 6-3/4" (2000mm)	5' 3" (1600mm)
7' 2-5/8" (2200mm)	5' 10-7/8" (1800mm)
7' 10-1/2" (2400mm)	6' 6-3/4" (2000mm)
8' 6-3/8" (2600mm)	7' 2-5/8" (2200mm)
9' 2-1/4" (2800mm)	7' 10-1/2" (2400mm)
9' 10-1/8" (3000mm)	8' 6-3/8" (2600mm)

NOTE: Load sections with a lowered loading height of 2' 7-1/2" (800mm) are available for specific applications, such as when the loading area is underneath a table or tray conveyor. Consult MEIKO for details.

Recommended load sections:

- Single worker loading items while standing at the end of the machine - **L** = 3' 11-1/4" (1200mm)
- Two workers loading items, each standing on one side of the machine - **L** = 4' 7-1/8" (1400mm)
- Large items placed flat on the belt (totes, containers, etc.) - **LA** = 2' (600mm) longer than the item
- Operations with special delivery systems and/or multiple workers loading items may require extended load sections. Consult MEIKO for assistance.

Contact-plus zone 1 (Na)

Contact-plus zone 1 (Na)	Contact-plus zone 2 (Nb)	Model number code
None	7-7/8" (200mm)	B-M74 V? N02 P8
7-7/8" (200mm)	7-7/8" (200mm)	B-M74 V? N22 P8
11-7/8" (300mm)	11-7/8" (300mm)	B-M74 V? N33 P8
1' 3-3/4" (400mm)	1' 3-3/4" (400mm)	B-M74 V? N44 P8
1' 7-5/8" (500mm)	1' 7-5/8" (500mm)	B-M74 V? N55 P8
1' 11-5/8" (600mm)	1' 11-5/8" (600mm)	B-M74 V? N66 P8
2' 7-1/2" (800mm)	2' 7-1/2" (800mm)	B-M74 V? N88 P8
3' 3-3/8" (1000mm)	3' 3-3/8" (1000mm)	B-M74 V? N1010 P8

NOTE: As ware proceeds through the machine and closer to the final rinse, the water contacting the ware becomes warmer and cleaner. Large items and flat items (particularly sheet pans, trays, totes, etc.) can carry over cooler, soiled water forward in the machine. The contact-plus zone provides a landing area for this water, allowing it to return to the previous tank. This reduces detergent consumption and tank heating energy use.

Wider contact-plus zones also provide a surface that may be used to front-mount detergent or rinse aid systems.

Recommended contact-plus zone configurations:

- For machines washing plates/glasswares - **N02**
- For machines washing a typical ware mix - cafeteria trays and some sheet pans in addition to plates and glasswares - **N22**
- For machines washing a high proportion of sheet pans - **N33**
- For machines washing large containers - **N44** or larger, depending on the size of the container
- For machines with front-mounted detergent and rinse aid dispensers - **N33** or larger, depending on the size of the dispensing systems

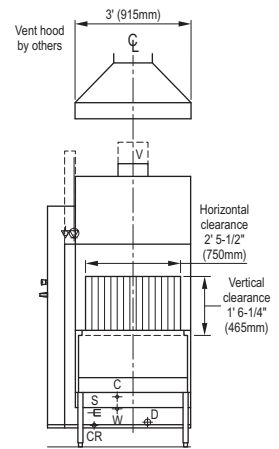
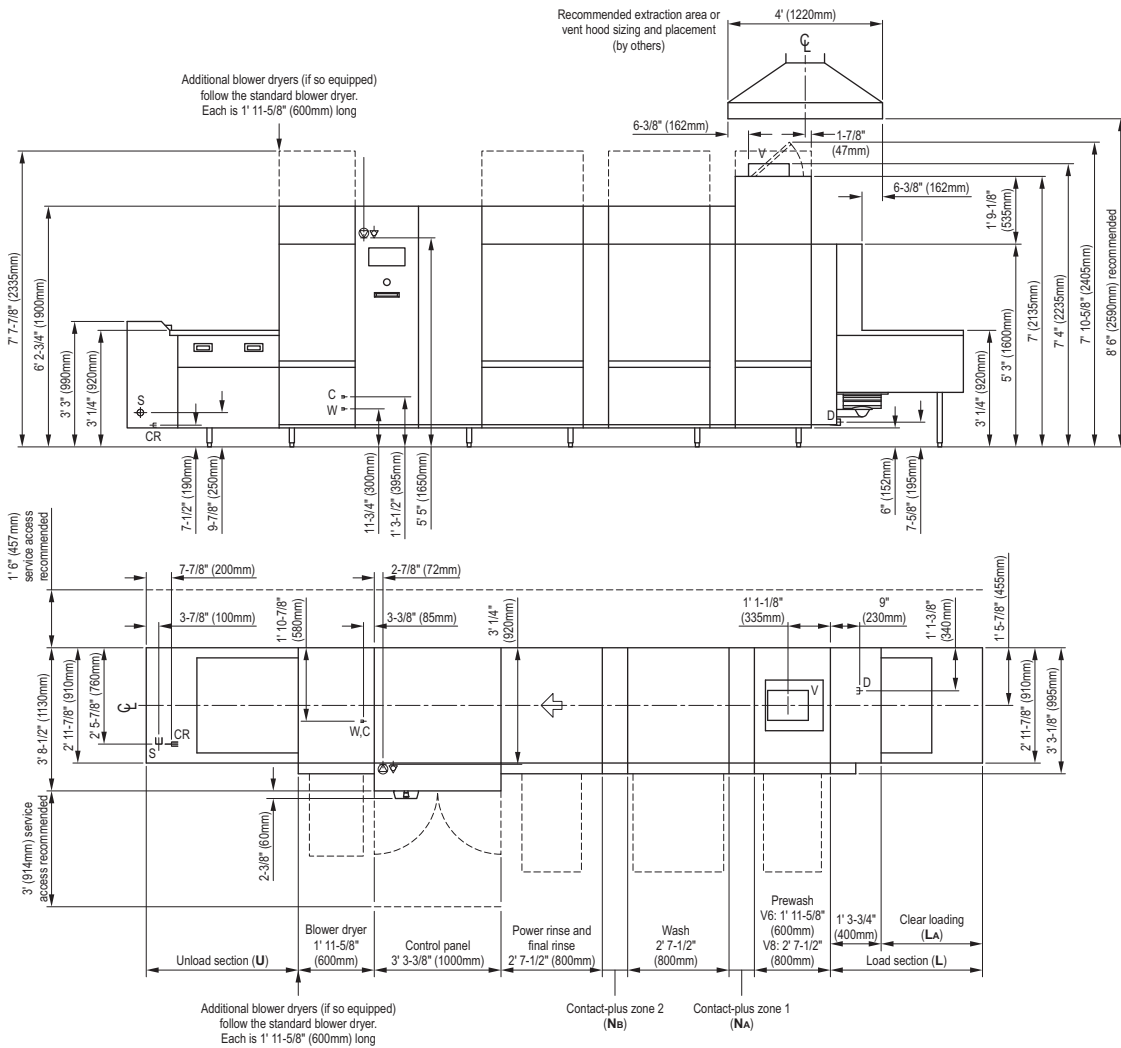
Unload sections (U)

2' 7-1/2" (800mm)
3' 3-3/8" (1000mm)
3' 11-1/4" (1200mm)
4' 7-1/8" (1400mm)
5' 3" (1600mm)
5' 10-7/8" (1800mm)
6' 6-3/4" (2000mm)
7' 2-5/8" (2200mm)
7' 10-1/2" (2400mm)
8' 6-3/8" (2600mm)
9' 2-1/4" (2800mm)
9' 10-1/8" (3000mm)

Recommended unload sections:

- Typical ware mix, limited space available - **U** = 3' 11-1/4" (1200mm)
- Typical ware mix, more space available - **U** = 4' 7-1/8" (1400mm) or longer for improved drying
- Large items placed flat on the belt (totes, containers, etc.) - **U** = at least 1' (300mm) longer than *twice* the length of the item

M-iQ Flight - B-M74 Series - Steam heat, right to left



Blower dryers

NOTE: All M-iQ flight type warewashers feature at least one heated blower dryer section. One blower dryer provides good results for plates, cutlery and glassware in most cases. For melamine ware or plastics (trays, insulated items, etc.) a second blower dryer is available, adding 1' 11-5/8" (600mm) to overall machine length. For some special ware types, additional blower dryer zone(s) beyond the second may provide improved drying results. Consult MEIKO for assistance.

Load sections (L)	Clear loading (LA)
3' 3-3/8" (1000mm)	1' 11-5/8" (600mm)
3' 11-1/4" (1200mm)	2' 7-1/2" (800mm)
4' 7-1/8" (1400mm)	3' 3-3/8" (1000mm)
5' 3" (1600mm)	3' 11-1/4" (1200mm)
5' 10-7/8" (1800mm)	4' 7-1/8" (1400mm)
6' 6-3/4" (2000mm)	5' 3" (1600mm)
7' 2-5/8" (2200mm)	5' 10-7/8" (1800mm)
7' 10-1/2" (2400mm)	6' 6-3/4" (2000mm)
8' 6-3/8" (2600mm)	7' 2-5/8" (2200mm)
9' 2-1/4" (2800mm)	7' 10-1/2" (2400mm)
9' 10-1/8" (3000mm)	8' 6-3/8" (2600mm)

NOTE: Load sections with a lowered loading height of 2' 7-1/2" (800mm) are available for specific applications, such as when the loading area is underneath a table or tray conveyor. Consult MEIKO for details.

Recommended load sections:

- Single worker loading items while standing at the end of the machine - **L** = 3' 11-1/4" (1200mm)
- Two workers loading items, each standing on one side of the machine - **L** = 4' 7-1/8" (1400mm)
- Large items placed flat on the belt (totes, containers, etc.) - **LA** = 2' (600mm) longer than the item
- Operations with special delivery systems and/or multiple workers loading items may require extended load sections. Consult MEIKO for assistance.

Contact-plus 1 (NA)	Contact-plus 2 (Nb)	Model number code
None	7-7/8" (200mm)	B-M74 V? N02 P8
7-7/8" (200mm)	7-7/8" (200mm)	B-M74 V? N22 P8
11-7/8" (300mm)	11-7/8" (300mm)	B-M74 V? N33 P8
1' 3-3/4" (400mm)	1' 3-3/4" (400mm)	B-M74 V? N44 P8
1' 7-5/8" (500mm)	1' 7-5/8" (500mm)	B-M74 V? N55 P8
1' 11-5/8" (600mm)	1' 11-5/8" (600mm)	B-M74 V? N66 P8
2' 7-1/2" (800mm)	2' 7-1/2" (800mm)	B-M74 V? N88 P8
3' 3-3/8" (1000mm)	3' 3-3/8" (1000mm)	B-M74 V? N1010 P8

NOTE: As ware proceeds through the machine and closer to the final rinse, the water contacting the ware becomes warmer and cleaner. Large items and flat items (particularly sheet pans, trays, totes, etc.) can carry over cooler, soiled water forward in the machine. The contact-plus zone provides a landing area for this water, allowing it to return to the previous tank. This reduces detergent consumption and tank heating energy use.

Wider contact-plus zones also provide a surface that may be used to front-mount detergent or rinse aid systems.

Recommended contact-plus zone configurations:

- For machines washing plates/glasswares - **N02**
- For machines washing a typical ware mix - cafeteria trays and some sheet pans in addition to plates and glasswares - **N22**
- For machines washing a high proportion of sheet pans - **N33**
- For machines washing large containers - **N44** or larger, depending on the size of the container
- For machines with front-mounted detergent and rinse aid dispensers - **N33** or larger, depending on the size of the dispensing systems

M-iQ Flight - B-M74 Series - Utility Legend

- E** Electrical connection(s)
- Electrically-heated machines have four (4) connections. Steam-heated machines have one (1) connection. Incoming leads must be appropriately sized for electrical supply. Individual circuit breaker/disconnects with lockout/tagout strongly recommended (provided by others).
 - Ampacity shown on utility chart, Page 7
- D** Drain connection
- Connection to 2" (50mm) OD horizontal drain outlet (HDPE piping).
 - Indirect routing to 4" (100mm) floor drain recommended. Pipe to be connected to 2" (50mm) OD line (or 1-1/2" pipe) via no-hub. Additional piping to drain to be supplied by others.
- S** Steam connection (steam-heated machines only)
- Connection 1-1/2" NPT
 - Constant steam pressure is REQUIRED (pressure to be specified at time of order). If pressure is below minimum shown, consult factory. If pressure is above maximum shown, use of a regulator is REQUIRED (supplied by others).
 - Pressure ranges (specify at time of order):
 - 7-14 PSI (0.51-1.0 bars)
 - 15-22 PSI (1.1-1.5 bars)
 - 23-29 PSI (1.6-2.0 bars)
 - Consumption on utility chart, Page 7
- W** Water, warm (initial fill connection)
- Connection 1/2" NPT
 - Temperature 110-140°F (43-60°C). 140°F (60°C) recommended to reduce start-up time
 - Recommended water hardness 1-3 grains per U.S. gal.
 - Initial fill volume on utility chart, Page 7
- C** Water, cold (final rinse connection)
- Connection 1/2" NPT
 - Temperature cold as available. 50°F/10°C recommended to reduce steam emissions
 - Recommended water hardness 1-3 grains per U.S. gal.
 - Final rinse consumption on utility chart, Page 7
- CR** Condensate return connection (steam-heated machines only)
- Connection 1" NPT
 - Condensate return line must be pressure-free
- V** Vent connection
- Machine vent is powered, intended for indirect vent connection
 - Extraction area detailed on drawings (pages 2-5) and utility chart (page 7)
 - Exhaust air volume on utility chart (page 7)

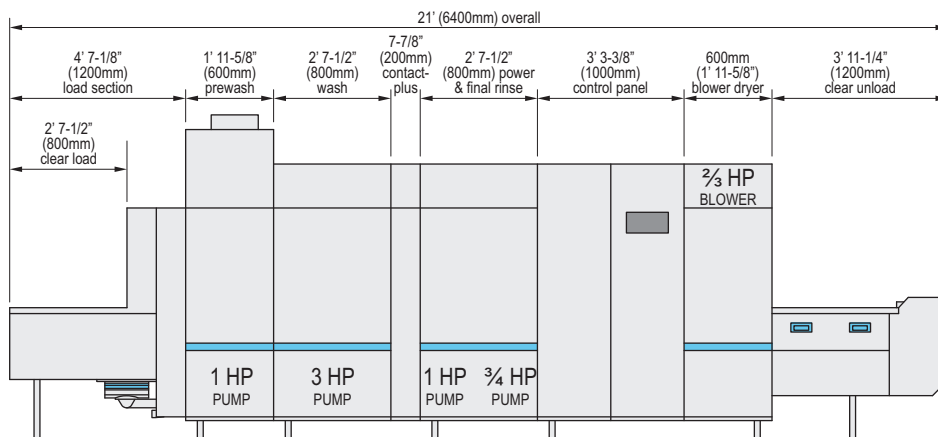
M-iQ Flight - B-M74 Series - Standard MTS Configurations

MEIKO M-iQ series dishwashers are available in a wide variety of configurations. For easier machine selection, the "MTS" configurations shown below are standard configurations optimized for common washing requirements. Non-standard configurations are also possible, as shown in the option tables on the preceding pages. Consult MEIKO for assistance with machine selection.

MTS1

M-iQ B-M74 V6 N02 P8

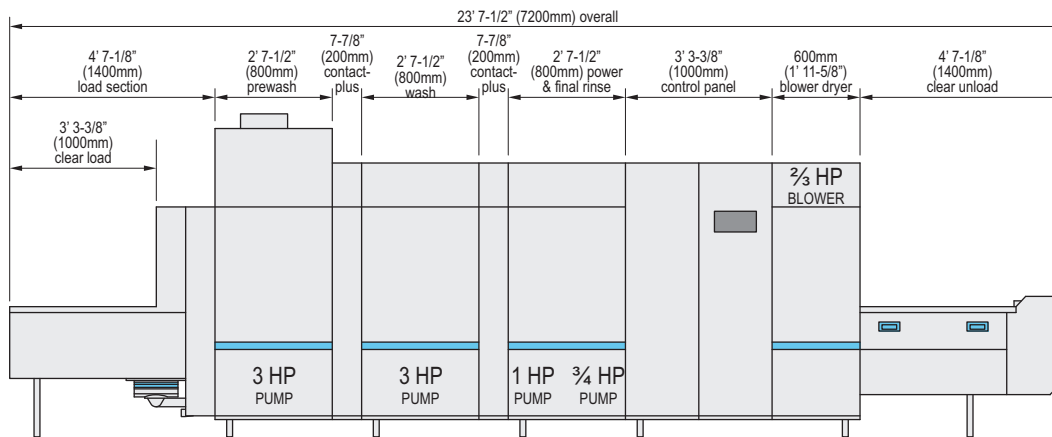
Trayless cafeterias or limited length available



MTS2

M-iQ B-M74 V8 N22 P8

General purpose - cafeterias with large numbers of trays, hospitals, limited numbers of sheet pans



M-iQ Flight - B-M74 Series - Technical Specifications

Operating Capacities and Conveyor Specifications (NSF Rated)

	B-M74 V6 N** P8	B-M74 V8 N** P8
Conveyor belt speed (max.)	6.0' (1.8m)/min.	6.5' (2.0m)/min.
Dishes per hour (max.) ¹	9,995	10,828
Water consumption/hr. (max)	56.2 gal. (212.7 liters)	56.8 gal. (215.0 liters)
Horizontal clearance	2' 5-1/2" (750mm)	2' 5-1/2" (750mm)
Vertical clearance	1' 6-1/4" (465mm)	1' 6-1/4" (465mm)
Minimum peg spacing	2-1/8" (54mm)	2-1/8" (54mm)

¹ Maximum dishes per hour as calculated with NSF formula (120 x CS x CW / PD), where CS = conveyor speed in ft/min, CW = conveyor width in inches and PD = peg distance in inches. This formula assumes full belt utilization regardless of conveyor speed or ware size. This loading generally cannot be achieved under actual operating conditions. For assistance with ware throughput calculations and machine selection, contact MEIKO at sales@meiko.us.

² Heat load shown is for dishwasher only and does not include heat emitted by ware exiting the machine. Heat emitted by ware is site-specific and outside the scope of this spec sheet. For assistance, contact MEIKO at sales@meiko.us.

Venting Specifications

	With standard loading sections (load height 3' 1/4" / 920mm)	With lowered loading sections (load height 2' 7-1/2" (800mm))	
Machine exhaust	155 CFM (263m ³ /h)	155 CFM (263m ³ /h)	
Recommended room air	345 CFM (586m ³ /h)	445 CFM (756m ³ /h)	
Recommended total	500 CFM (850m ³ /h)	600 CFM (1019m ³ /h)	
Recommended extraction area	3' (900mm) W x 4' (1220mm) L	3' (900mm) W x 5' (1520mm) L	
Machine heat load ²	<i>Sensible</i>	<i>Latent</i>	<i>Total</i>
@ 208V/60Hz/3Ph	19,108 BTU/hr (5.6 kW)	9,554 BTU/hr (2.8 kW)	28,662 BTU/hr (8.4 kW)
Per add'l blwr dryer	+ 1,024 BTU (0.3 kW)	+ 341 BTU (0.1 kW)	+ 1,365 BTU (0.4 kW)
@ 230V/60Hz/3Ph	18,426 BTU/hr (5.4 kW)	9,213 BTU/hr (2.7 kW)	27,639 BTU/hr (8.1 kW)
Per add'l blwr dryer	+ 1,024 BTU (0.3 kW)	+ 682 BTU (0.2 kW)	+ 1,706 BTU (0.5 kW)
@ 460V/60Hz/3Ph	19,449 BTU/hr (5.7 kW)	9,554 BTU/hr (2.8 kW)	29,003 BTU/hr (8.5 kW)
Per add'l blwr dryer	+ 1,365 BTU (0.4 kW)	+ 1,024 BTU (0.3 kW)	+ 2,389 BTU (0.7 kW)

Water and Drain Specifications

Minimum water temperatures:

- Prewash tank No minimum - 110-140°F (43-60°C) typical
- Wash tank 150°F (66°C)
- Power rinse 162°F (72°C)
- Final rinse 180°F (82°C)

Incoming water temperatures:

- Initial fill line 110°-140°F (43°-60°C)
- Final rinse line Cold as available, 50°F (10°C) recommended

Incoming water line sizes:

- Initial fill line 1/2" NPT
- Final rinse line 1/2" NPT

	B-M74 V6 N** P8	B-M74 V8 N** P8
Initial fill	67.6 gal. (276.0 liters)	76.1 gal. (288.0 liters)
Consumption at 100% cap.	56.2 gal. (212.7 liters)/hr	56.8 gal. (215.0 liters)/hr
Recommended water hardness	1-3 grains/gal	
Drain specifications:		
• Connection (standard)	2" (50mm) OD	
• Connection (with no-hub)	1-1/2" pipe	
• Recommended floor drain (min.)	4" (100mm)	
• Maximum drain flow rate	15 gals. (56.8 liters) per minute	

Machine Electrical Specifications

	208 V/60 Hz/3 Ph				230 V/60 Hz/3 Ph				460 V/60 Hz/3 Ph			
	TB1	TB2	TB3	TB4	TB1	TB2	TB3	TB4	TB1	TB2	TB3	TB4
Electric tank heat, B-M74 V6 N** P8	29.15 A	94.33 A	9.00 A	52.50 A	29.05 A	84.60 A	7.50 A	45.60 A	19.91 A	43.50 A	5.00 A	23.70 A
Electric tank heat, B-M74 V8 N** P8	35.25 A	94.33 A	9.00 A	52.50 A	35.15 A	84.60 A	7.50 A	45.60 A	23.06 A	43.50 A	5.00 A	23.70 A
Steam tank heat/elec. blower dryer, B-M74 V6 N** P8	45.11 A	--	--	--	42.59 A	--	--	--	27.19 A	--	--	--
Steam tank heat/steam blower dryer, B-M74 V6 N** P8	36.11 A	--	--	--	35.09 A	--	--	--	22.19 A	--	--	--
Steam tank heat/elec. blower dryer, B-M74 V8 N** P8	51.21 A	--	--	--	48.69 A	--	--	--	30.34 A	--	--	--
Steam tank heat/steam blower dryer, B-M74 V8 N** P8	42.21 A	--	--	--	41.19 A	--	--	--	25.34 A	--	--	--
Per additional elec. blower dryer section (electric machine)	+ 2.25 A	--	+9.00 A	--	+ 2.25 A	--	+ 7.50 A	--	+ 1.30 A	--	+ 5.00 A	--
Per additional elec. blower dryer section (steam machine)	+ 11.25 A	--	--	--	+ 9.75 A	--	--	--	+ 6.30 A	--	--	--
Per additional steam blower dryer section	+ 2.25 A	--	--	--	+ 2.25 A	--	--	--	+ 1.30 A	--	--	--

Component Electrical Specifications

Prewash pump motor, B-M74 V6 N** P8	1.0 hp (0.75 kW)
Prewash pump motor, B-M74 V8 N** P8	3.0 hp (2.20 kW)
Wash pump motor	3.0 hp (2.20 kW)
Power rinse pump motor	1.0 hp (0.75 kW)
Final rinse pump motor	0.75 hp (0.55 kW)
Vent motor	0.17 hp (0.13 kW)
Conveyor motor	0.34 hp (0.25 kW)
Blower dryer motor (each)	0.67 hp (0.50 kW)
Loading deck flushing pump	0.134 hp (0.10 kW)
M-Filter pump, prewash	0.134 hp (0.10 kW)
M-Filter pump, wash	0.134 hp (0.10 kW)
M-Filter pump, power rinse	0.134 hp (0.10 kW)
Control system, 208V/60Hz/3Ph or 230V/60Hz/3Ph	0.48 kW
Control system, 460V/60Hz/3Ph	3.30 kW

Electric Heating Elements (electrically-heated units only)

	208 V/60 Hz/3 Ph	230 V/60 Hz/3 Ph	460 V/60 Hz/3 Ph
Wash tank heat	14.88 kW	15.52 kW	15.40 kW
Power rinse tank heat	19.12 kW	18.18 kW	19.20 kW
Booster heater (max.) ¹	18.90 kW	18.30 kW	18.90 kW
Blower dryer heat (each)	3.20 kW	3.00 kW	4.00 kW

¹ Maximum heater output shown. Incoming cold water is pre-heated by heat captured from machine exhaust air prior to being heated to sanitizing 180°F (82°C) by booster heater. Booster heater incorporates variable output and is automatically regulated to ensure proper final rinse temperature, regardless of incoming water temperature or machine operating status (startup, operation, idle).

Typical booster output at operating temperature:

- B-M74 V6 N** P8 7.025 kW
- B-M74 V8 N** P8 7.100 kW

Steam Specifications (steam-heated units only)

Steam supply connection	1-1/2" NPT		
Condensate return connection	1" NPT		
Steam supply pressure (must be specified):			
7-14 PSI (0.51-1.0 bars)	15-22 PSI (1.1-1.5 bars)	23-29 PSI (1.6-2.0 bars)	

Steam consumption (max.):

- Machine with electric blower dryer 195 lbs/hr (56.47 kW)
- Machine with steam heated blower dryer 206 lbs/hr (59.66 kW)
- Per additional steam blower dryer section + 11 lbs/hr (3.20 kW)

Note: All specifications are subject to change without notice based on MEIKO's dedicated product improvement program.

Equipment Specification: M-iQ B-M74 V ___ N ___ P8 - Item No. _____

Unit will be a:

___ MEIKO M-iQ B-M74 V6 N___ P8 multiple tank flight type rackless conveyor dishmachine, consisting of a load section, 1' 11-5/8" (600mm) prewash compartment with 1 hp (0.75 kW) pump motor, 2' 7-1/2" (800mm) wash compartment with 3 hp (2.2 kW) pump motor, contact-plus zone between wash and rinse sections, 2' 7-1/2" (800mm) combination rinse compartment (with 1 hp /0.75 kW power rinse pump motor and 3/4 hp / 0.55 kW final rinse pump motor), 5' 3" (1600mm) combination control panel / heated blower drying zone, and a clear, level unloading area. Unit will be NSF rated at a maximum conveyor belt speed of 6.0' (1.8m)/minute. Final rinse water consumption will not exceed a maximum of 56.2 U.S. gal. (212.7 liters)/hour.

___ MEIKO M-iQ B-M74 V8 N___ P8 multiple tank flight type rackless conveyor dishmachine, consisting of a load section, 2' 7-1/2" (800mm) prewash compartment with 3 hp (2.2 kW) pump motor, 2' 7-1/2" (800mm) wash compartment with 3 hp (2.2 kW) pump motor, contact-plus zone between wash and rinse sections, 2' 7-1/2" (800mm) combination rinse compartment (with 1 hp / 0.75 kW power rinse pump motor and 3/4 hp / 0.55 kW final rinse pump motor), 5' 3" (1600mm) combination control panel / heated blower drying zone, and a clear, level unloading area. Unit will be NSF rated at a maximum conveyor belt speed of 6.5' (2.0m)/minute. Final rinse water consumption will not exceed a maximum of 56.8 U.S. gal. (215.0 liters)/hour.

Unit will be NSF and ETL listed. Unit will have a conveyor belt width of 29-1/2" (750mm) and a conveyor peg spacing of 2-1/8" (54mm).

Unit will utilize an internal booster heater to maintain a minimum 180°F (82°C) minimum fresh water sanitizing rinse. Wash tank temperature will be automatically maintained at a minimum temperature of 150°F (66°C). Power rinse tank temperature will be automatically maintained at a minimum temperature of 162°F (72°C).

All tank, final rinse and blower dryer heating will be accomplished by:

___ Electric heaters ___ Steam coil heaters *

* *NOTE: Some steam-heated machine configurations use electrically-heated blower dryers. Consult MEIKO for additional information.*

If steam, specify pressure:

___ 7-14 PSI ___ 15-22 PSI ___ 23-29 PSI
(0.51-1.0 bars) (1.1-1.5 bars) (1.6-2.0 bars)

Operating voltage will be:

___ 208V/60Hz/3Ph ___ 230V/60Hz/3Ph ___ 460V/60 Hz/3 Ph

Direction of operation will be:

___ Left to right ___ Right to left

Unit will be equipped with the following blower dryer system:

___ A single heated blower dryer for complete drying of all dishes, crockery and silverware, with a 0.67 hp blower dryer motor. Drying tunnel will be 1' 11-5/8" (600mm) in length.

___ Dual adjacent heated blower dryers for complete drying of all dishes, crockery and silverware, and improved drying of plastic trays. Each drying tunnel will feature a 0.67 hp blower dryer motor and will be 1' 11-5/8" (600mm) in length.

Unit will feature a glass touch screen control panel and display. Display will provide customized information based on the machine operating mode, including tank and final rinse temperatures and selection of three different operating speeds. Display will provide service diagnostic information, automatic logging of operating history, and the ability for the operator to enter manual log entries for later retrieval.

Unit will feature a single-point drain connection and single-point indirect ventilation connections. Steam-heated machines will feature a single-point electrical connection.

Unit will have the following standard features:

Operating Features

Unit will feature fully automatic operation. Ware placed on the belt and entering machine will activate water flow and pump operation. Ware sensing will be by mechanical limit arm for reliable operation under exposure to steam and water droplets. Final rinse activates only when ware is located in the machine to conserve water, chemicals and heating energy. Pumped final rinse provides consistent results and water consumption regardless of variations in supply water pressure. Waste Air Heat Recovery System reclaims waste heat generated by the machine as free energy to preheat the incoming rinse water, reducing energy consumption and allowing hot-water sanitizing from a cold water supply (minimum 50°F / 10°C). Water will be delivered from Waste Air Heat Recovery System exchanger to an internal booster heater to provide the required rise for a minimum 180°F (82°C) sanitizing final rinse. Booster heater will incorporate variable output and will be automatically regulated to ensure optimum performance regardless of incoming water temperature or machine operating status (startup, operation, idle).

Unit will feature fully automatic operation with one-touch selection of three different conveyor speeds. Unit will feature a main control panel on the front of the machine to include a push-pull emergency stop switch, and separate start-stop controls at each end of the machine for operator convenience. Main control panel will be a glass touch screen display providing access to temperature displays, machine status, service diagnostics and machine logs as well as operating controls. Display will be capable of displaying information in multiple selectable languages to include English, French, Spanish and German.

Construction Features

Conveyor will be 29-1/2" (750mm) in width, and will accommodate flat trays, dishes, 18x26" (460x660mm) sheet pans, and standard 20x20" (500x500mm) dishracks. Clearance height for ware within the machine will be 1' 6-1/4" (465mm). Unless optional lowered load end is selected, conveyor loading and unloading height will be 3' 1/4" (920mm) A.F.F. (+/- 1/2" / 12mm from adjustable legs), and conveyor will maintain level height throughout machine without gradients for easier loading/unloading and ware stability.

Unit will feature double-wall, insulated stainless steel construction on front, top and rear panels to retain heat inside the machine, conserve energy and provide a cool-to-the-touch exterior. Prewash, wash and power rinse manifolds will be internally mounted to ensure a cool-to-the-touch rear panel, and will be spaced from rear wall of tank for easier cleaning.

Tank drains will feature magnetic switches to prevent operation if drain plug is not in place. Tank pump motors will be vertically-installed for easier serviceability and self-draining. Motors will include a safety switch to automatically signal the operator if a leaking pump seal is detected.

Wash arms of unit will be mounted in easily-removed assemblies, and will feature concave, slotted nozzles to minimize clogging. All prewash, wash, power rinse and final rinse arms will be of stainless steel construction. Final rinse nozzles to feature individual, screw-in stainless steel orifices for durability and simple cleaning. Front-sloping wash tanks will be of all 304-series stainless steel construction.

Cleaning Features

Load section of unit will include an interval-based cascade of water to push food soil directly into a single, front-accessible scrap tray. Prewash, wash and power rinse tanks will each feature a multi-stage filtration system with multiple, nesting scrap screens. Food soil will be collected and sorted by nested scrap screens and flushed into the drain line using a dedicated 0.134 hp M-Filter active filtration pump. Active M-iQ filtration will completely eliminate the need to manually remove and empty scrap baskets during operation. Upon shutdown, unit will use water already inside the machine, as well as a minimal amount of fresh water, for an automatic cleaning mode to reduce the need for manual cleaning. All components of unit that require regular manual cleaning will be marked in a blue accent color for easy identification. Prewash, wash and power rinse arm end caps will be tethered to arms with braided stainless steel wire to prevent loss during cleaning.

Efficiency Features

Unit will feature a single-point vent connection. Heat will be drawn the length of the machine to the load end vent for superior temperature distribution, reduced air emissions and reduced energy consumption. Load end vent will incorporate a MEIKO Waste Air Heat Recovery System heat exchanger to preheat incoming final rinse water and cool exhaust air, permitting final rinse operation using a cold water supply. Unit will employ active soil filtration and removal in each tank to reduce detergent consumption by up to 50%.

Unit will have the following optional features:

- ___ Drain water tempering - reduces drain water below 140°F (60°C)
- ___ Single-point electrical connection (electrically-heated machines only)
- ___ Flanged, bolt-down feet

Unit will include the following doors:

- ___ Spring-loaded lifting doors extending the full width of each applicable section (prewash, wash, rinse, blower dryer). All doors will feature dual-wall, insulated construction, and door safety switches to prevent operation while in the open position.
- ___ Hinged doors extending the full width of each applicable section (prewash, wash, rinse, blower dryer). All doors will feature dual-wall, insulated construction, and door safety switches to prevent operation while in the open position. Tanks and sections 2' (600mm) in length or shorter will feature a single door. Longer tanks and sections will feature dual doors.

Unit will have the following contact-plus zones:

Contact-plus zones between prewash and wash sections (optional) and between wash and rinse sections (standard) minimize cool/soiled water carryover between tanks, which reduces heating energy and detergent consumption.

Between prewash and wash sections (first digit after "N" in model number)

- ___ 0: None (standard) ___ 2: 7-7/8" (200mm) ___ 3: 11-7/8" (300mm)
- ___ 4: 15-3/4" (400mm) ___ 5: 19-5/8" (500mm) ___ 6: 23-5/8" (600mm)
- ___ 8: 31-1/2" (800mm) ___ 10: 39-3/8" (1000mm)

Between wash and rinse sections (second digit after "N" in model number)

- ___ 2: 7-7/8" (200mm, standard) ___ 3: 11-7/8" (300mm)
- ___ 4: 15-3/4" (400mm) ___ 5: 19-5/8" (500mm) ___ 6: 23-5/8" (600mm)
- ___ 8: 31-1/2" (800mm) ___ 10: 39-3/8" (1000mm)

Submittal Sheet

01/16/2020

ITEM# 4A - CONDENSATE HOOD (1 EA REQ'D)

BY OTHER CUSTOM

Provide as per custom Halton Shop Drawings and the following:

ACCESSORIES

Mfr	Qty	Model	Spec
			<p>Due to ceiling height restrictions a standard hood will not fit. HVAC contractor will provide custom ventilation solution for this machine.</p> <p>Pipe condensate drain to dishtable below.</p> <p>Provide unit with hood mounted fan switch.</p> <p>Provide unit to meet all local, state and federal codes.</p> <p>Provide steel hanger rods and brackets.</p> <p>Provide stainless steel closure panels to ceiling on front, sides and between adjacent hoods; verify ceiling height with the General Contractor.</p> <p>Coordinate power shut-off and integration with building system by General Contractor.</p> <p>Verify and coordinate the fabrication with regard to delivery and access into building.</p>

Submittal Sheet

01/16/2020

ITEM# 5 - DISH CART (3 EA REQ'D)

Cambro (or equal) ADCS110

Dish Cart, adjustable, 28-5/8"W x 37-7/8"L x 31-7/8"H, (6) towers, minimum dish size 4-5/8", maximum dish size 13", includes vinyl dust cover, (2) 5" swivel casters with brakes and (2) 10" Easy Wheels, polyethylene construction, black, NSF

CAMBRO**Adjustable Dish Caddy****For 4⁵/₈" to 13" (11,7 to 33 cm) Plates**

Model ADCS

StoreSafe**Features & Benefits**

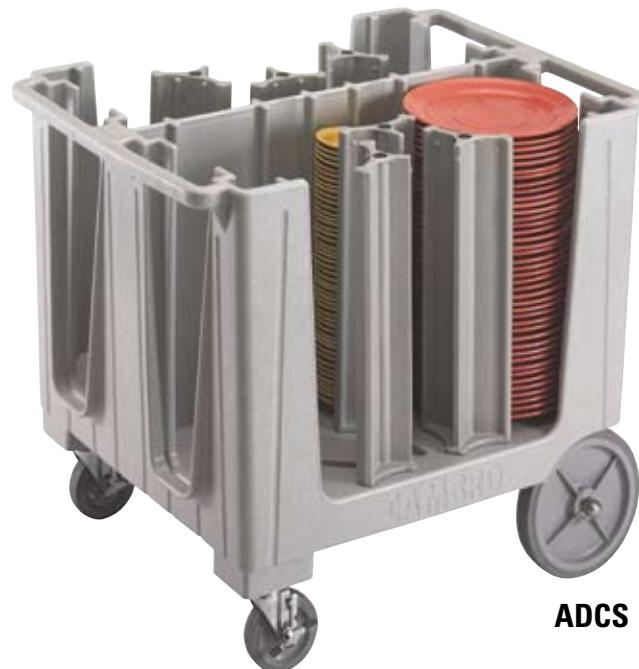
- Adjusts to hold plates from 4⁵/₈" - 13" (11,7 to 33 cm) in diameter.
- Each caddy includes six adjustable towers. Each storage column is 19¹/₂" (49,5 cm) deep for safe stacking capacity of approximately 45 - 60 plates per column.
- Poker chip style offers greater access for easy plate removal.
- Structural web molded of heavy-duty polyethylene. Will not rust, crack or chip. Easy to clean.
- A ³/₄" (1,9 cm) plated steel rear axle offers solid strength.
- One ¹/₂" (1,3 cm) metal rod runs inside each tower from top to bottom for stable and secure positioning.
- Molded-in handles on both ends provide sturdy and controlled handling. Will not bend or break.
- 500 lb. (226,8 Kg) load capacity.
- Non-marking wheels and casters ensure smooth maneuvering over any surface. Two each 5" (12,7 cm) swivel w/ brake front casters and 2 each 10" (25,4 cm) rear Easy Wheels.
- Vinyl cover included for sanitary storage.
- No assembly required.
- Available in 4 colors.

Item No. _____

Specifier Identification No. _____

Model No. _____

Quantity _____

**ADCS****Approvals**

CAMBRO
MANUFACTURING COMPANY
www.cambro.com

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Telephone (1)714 848 1555 Toll Free 800 854 7631 Customer Service Hot Line 800 833 3003
LIT FCST - 0506

Adjustable Dish Caddy

For 4⁵/₈" to 13" (11,7 to 33 cm) Plates
Model ADCS

Item No. _____

Specifier Identification No. _____

Model No. _____

Quantity _____

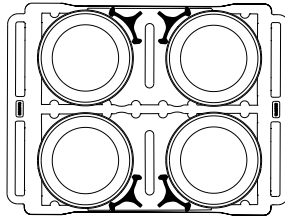
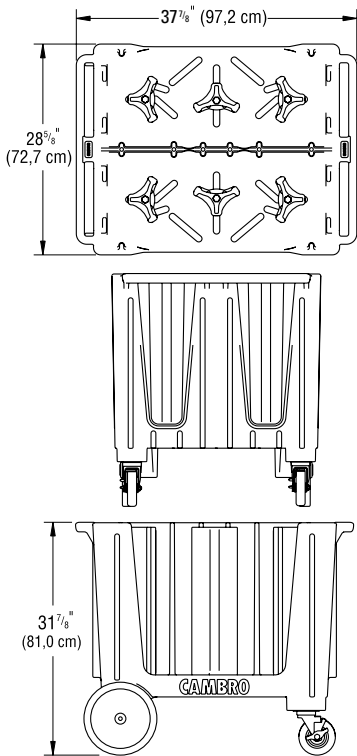


Plate Sizes: 9¹/₄"-13"
 4 Columns (60 ea.)
 Capacity = 240

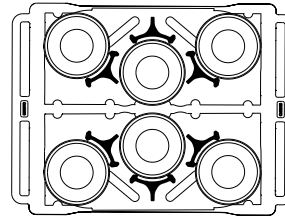


Plate Sizes: 7¹/₄"-9"
 6 Columns (60 ea.)
 Capacity = 360

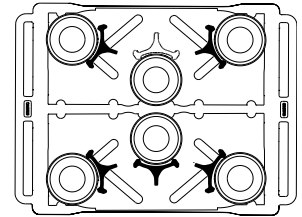
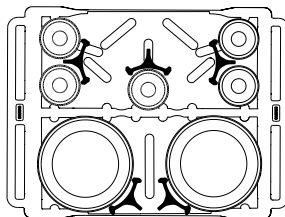
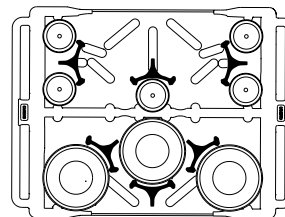


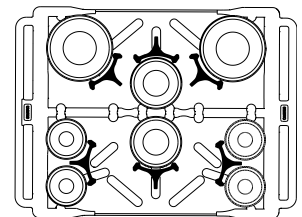
Plate Sizes: 5³/₄"-7"
 6 Columns (45 ea.)
 Capacity = 270



2 Columns 9¹/₄"-13" (60 ea.)
 5 Columns 4³/₄" (45 ea.)
 Capacity = 345



3 Columns 7¹/₄"-9" (60 ea.)
 5 Columns 4³/₄" (45 ea.)
 Capacity = 405



2 Columns 7¹/₄"-9" (60 ea.)
 2 Columns 5³/₄"-7" (45 ea.)
 4 Columns 4³/₄" (45 ea.)
 Capacity = 390

Capacities are approximate and will vary depending upon thickness and shape of china.

Specifications

Dimension Tolerance: +/- 1/4" (0,64 cm)

Code	Description	Plate Size	Towers Per Caddy	Max Stacking Height Per Column	Approx. Depth Per Column	Dimensions W x L x H	Case lbs./Cube Kg/m ³
ADCS	S-Series Adjustable Dish Caddy	4 ⁵ / ₈ " to 13" 11,7 cm to 33 cm	6	Approximately 45-60 dishes	19 ¹ / ₂ " (49,5 cm)	28 ⁵ / ₈ " x 37 ¹ / ₈ " x 31 ¹ / ₈ " 72,7 x 97,2 x 81,0 cm	128 (19.9)/ 58,2 (0,56)

Standard Colors

- Black (110)
- Speckled Gray (480)
- Slate Blue (401)
- Dark Brown (131)

Architect Specs

The plate storage and transport cart shall be an S-Series Adjustable Dish Caddy, Model ADCS, manufactured by Cambro Mfg. Co., Huntington Beach, CA 92647 U.S.A. It shall be made of structural web molded polyethylene. It shall have 6 each adjustable towers. It shall offer per column storage of 19¹/₂" (49,5 cm) safe stacking height and shall offer plate-stacking capacity of approx. 45-60 plates per column. It shall accommodate 4⁵/₈" - 13" (11,7 - 33 cm) plates. Towers will feature a 3/4" (1,3 cm) metal rod from top to bottom. It shall have a 3/4" (1,9 cm) plated steel rear axle and 2 each 5" (12,7 cm) front swivel casters w/ brakes and 2 each 10" (25,4 cm) rear Easy Wheels. It shall have a load capacity of 500 lbs. (226,8 Kg). It shall include one vinyl cover. It shall be available in 4 colors.

Approvals



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Telephone (1)714 848 1555 **Toll Free** 800 854 7631 **Customer Service Hot Line** 800 833 3003
 LIT FCST - 0506

Submittal Sheet

01/16/2020

ITEM# 6 - TRAY CONVEYOR (1 REQ'D)

Avtec (or equal) CUSTOM

Provide as per custom Avtec Shop Drawings on sheet K6.1

Submittal Sheet

01/16/2020

ITEM# 7 - SILVER SOAK SINK (2 REQ'D)

Avtec (or equal) CUSTOM

Provide as per custom Avtec Shop Drawings on sheet K6.1

Submittal Sheet

01/16/2020

ITEM# 8 - SINK WITH DRAINBOARD (1 EA REQ'D)

EXISTING TO BE RELOCATED EXISTIN

Existing to be relocated - Verify and coordinate all details dimensions and utility requirements in the field with the GC/CM.

Unit is to be disconnected by the appropriate trades, stored during construction, cleaned and reinstalled as per new plans and all utilities are to be reconnected by the appropriate trades.

Submittal Sheet

01/16/2020

ITEM# 9 - MOP SINK (1 EA REQ'D)

Advance Tabco 9-OP-20

Mop Sink, floor mounted, 25"W x 21"D x 10"H (overall), 20"W x 16" front-to-back x 6" deep (bowl size), free flow drain with 2" IPS outlet, stainless steel construction

ACCESSORIES

Mfr	Qty	Model	Spec
Advance Tabco	1	K-240	Service Sink Faucet, wall mount, 8" OC, 6-1/2" spout, with hose thread & pail hook, vacuum breaker spout, wall braced, chrome-plated brass
Advance Tabco	1	K-03	Vacuum Breaker Repair Kit (fits Advance Tabco K-240 service faucet only)
Advance Tabco	1	K-76	Paint-on sound deadening under top (each)



STAINLESS STEEL FABRICATED FLOOR MOP SINKS

Item #: _____	Qty #: _____
Model #: _____	
Project #: _____	



Standard Mop Sink
9-OP-20 Shown



Drop Front Mop Sink
9-OP-40DF Shown

FEATURES:

Floor mounted unit eliminates the need of lifting heavy containers.
 Tile edge furnished on the rear.
 Bowls rectangular in design for increased capacity.
K-16 Free Flow Drain is included with each mop sink.
-DF models feature a notched out front which allows for ease of emptying mop bucket)

CONSTRUCTION:

All TIG welded.
 Welded areas blended to match adjacent surfaces and to a satin finish.

MATERIAL:

16 Gauge type "304" series stainless steel sink bowl & Apron.



Notched Out Front Allows Ease of Emptying Mop Bucket



Fabricated Bowls are Welded Together at the Seams

	Model #	Bowl Size (A x B x C)	O.A. Dimension (W x L x H)	Drain Distance (E)	Drain Distance (F)	Approx. Wt.	Approx. Cu.
STANDARD	9-OP-20	16" x 20" x 6"	21" x 25" x 10"	10-1/2"	12-1/2"	33 lbs.	4
	9-OP-28	20" x 28" x 6"	25" x 33" x 10"	12-1/2"	16-1/2"	47 lbs.	7
	9-OP-40	16" x 20" x 12"	21" x 25" x 16"	10-1/2"	12-1/2"	45 lbs.	6
	9-OP-48	20" x 28" x 12"	25" x 33" x 16"	12-1/2"	16-1/2"	62 lbs.	9
LARGE BOWL	9-OP-44	24" x 24" x 12"	29" x 29" x 16"	14-1/2"	14-1/2"	70 lbs.	9
DROP FRONT	9-OP-40DF	16" x 20" x 12"	18-1/2" x 25" x 16"	10-1/2"	12-1/2"	85 lbs.	9
	9-OP-48DF	20" x 28" x 12"	22-1/2" x 33" x 16"	12-1/2"	16-1/2"	110 lbs.	15

MOP SINK ACCESSORIES

16" High Side & Back Splashes for 9-OP Series Mop Sinks Splashes on All 3 Sides

Model #	Fits Units:	Model #	Fits Units:
K-298	9-OP-20	K-298D	9-OP-40DF
	9-OP-40		
K-299	9-OP-28	K-299D	9-OP-48DF
	9-OP-48		
K-300	9-OP-44	-	-

Splash on Left or Right & Back

Model #	Fits Units:	Model #	Fits Units:
K-288LorR	9-OP-20	K-288LDorRD	9-OP-40DF
	9-OP-40		
K-290LorR	9-OP-28	K-290LDorRD	9-OP-48DF
	9-OP-48		
K-291LorR	9-OP-44	-	-



Left & Right Splashes Shown

- K-16** Replacement drain for floor mop sinks
- K-240** Service Faucet*
- K-242** 23" wide mop hanger
- K-243** Stainless steel mop drainage tray
- K-244** Hose and hanger
- K-245** 8" x 24" utility shelf
- K-246** 8" x 36" utility shelf

*Does not meet Federal Lead Free Standards as it is not intended for potable water.



Customer Service Available To Assist You 1-800-645-3166 8:30 am - 7:00 pm E.S.T.

For Orders & Customer Service:

Email: customer@advancetabco.com or Fax: 631-242-6900

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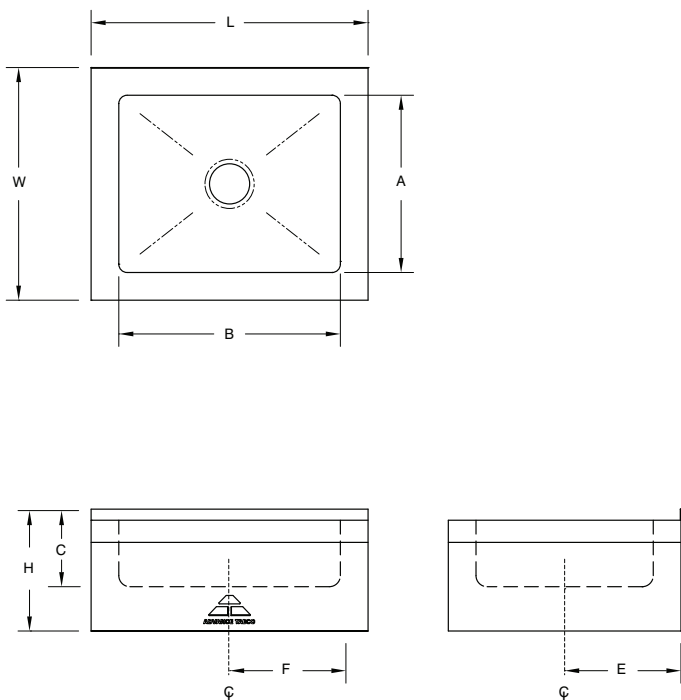


DIMENSIONS and SPECIFICATIONS

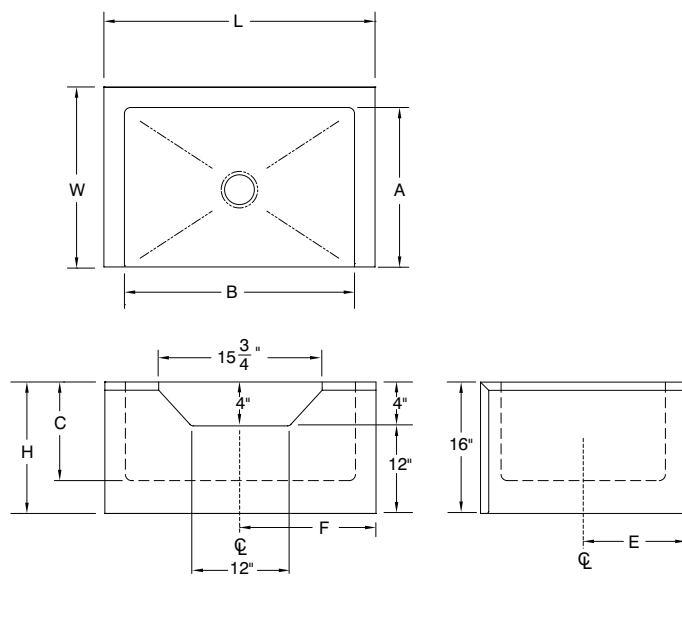
TOL Overall: ± .500"
 Interior: ± .250"

ALL DIMENSIONS ARE TYPICAL

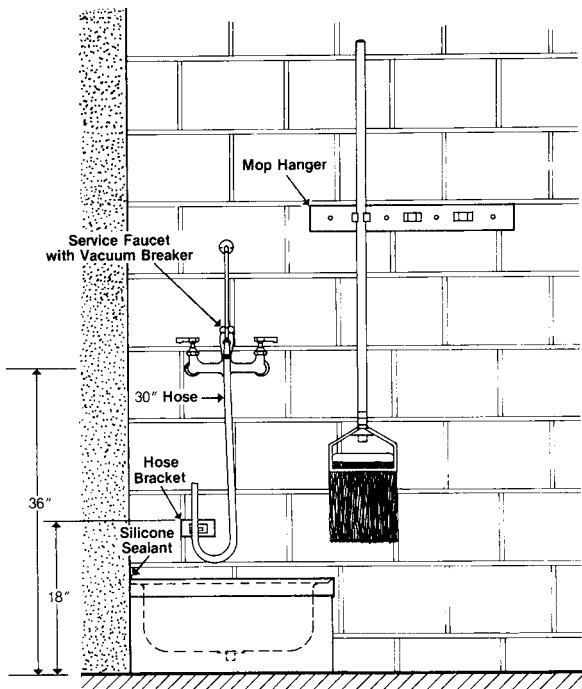
STANDARD MOP SINK



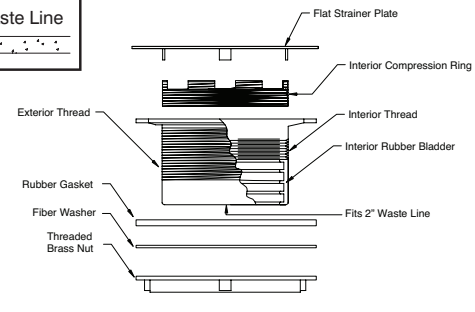
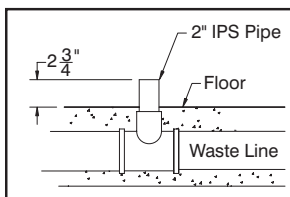
DROP FRONT MOP SINK



SUGGESTED INSTALLATION

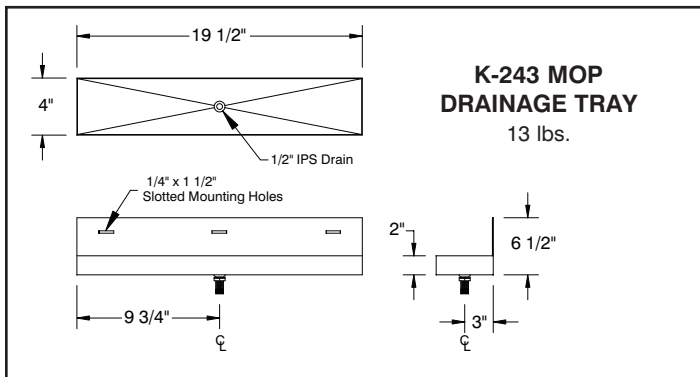


MOP SINK DRAIN ASSEMBLY



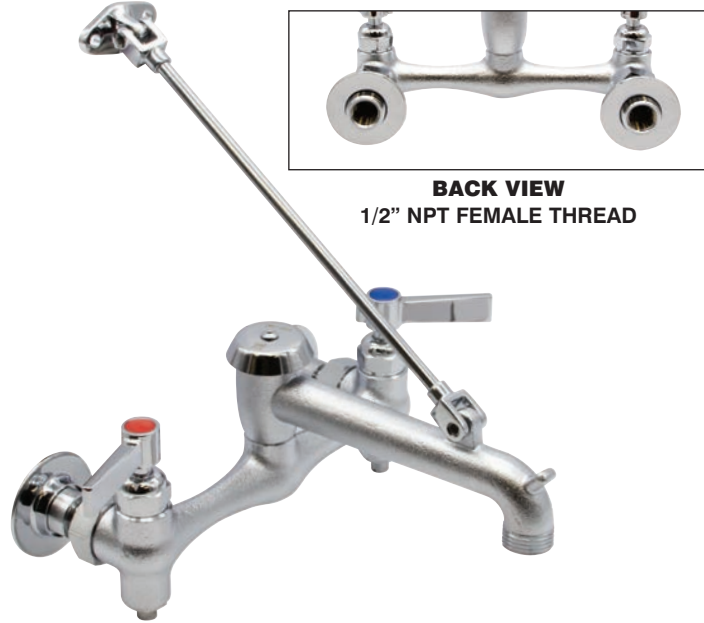
K-243 MOP DRAINAGE TRAY

13 lbs.





K-240 SERVICE FAUCET FOR MOP SINKS



BACK VIEW
1/2" NPT FEMALE THREAD

Item #: _____ Qty #: _____
 Model #: _____
 Project #: _____

FEATURES:

- 8" O.C. water supply.
- Quarter turn wedge style handles with colored hot & cold indexes.
- 9.6 GPM/36.3 LPM.
- Wall support bracket & pail hook.
- Vacuum breaker. Built-in stops.
- Garden hose outlet.

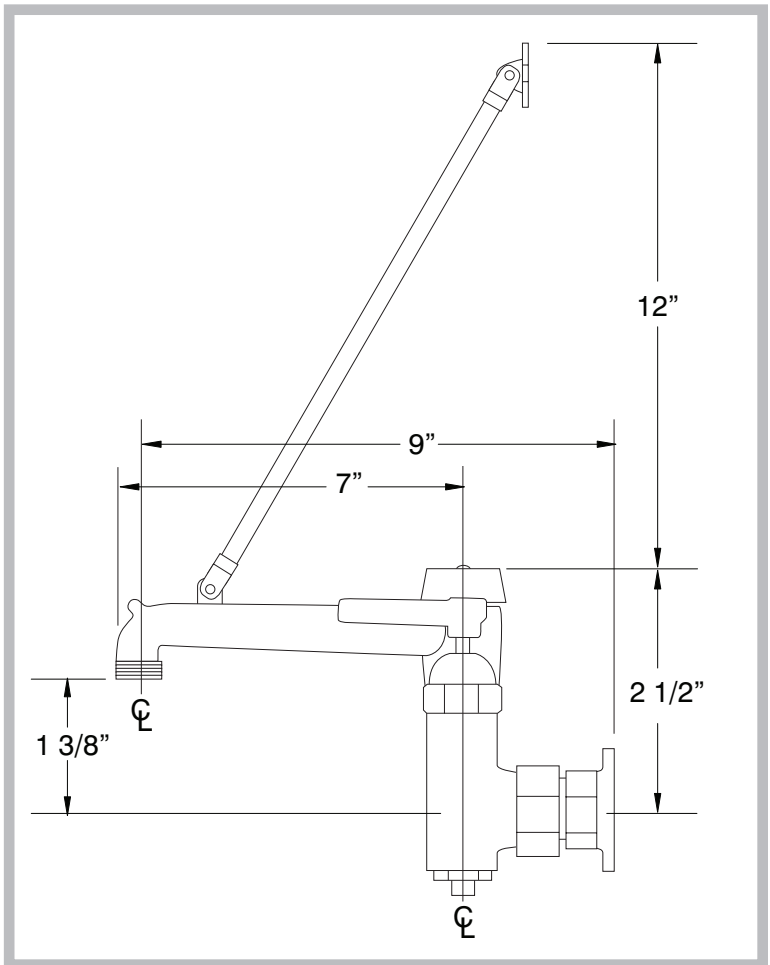
MATERIAL:

- Brass chrome plated body & spout.
- Chrome plated handles.



Click This Link To View Assembly Sheet

DIMENSIONS and SPECIFICATIONS



Options & Accessories

Replacement Vacuum Breaker Repair Kit For K-240

K-03



Faucet Repair Kit* K-00B (Set of 2)

Includes 2 Cartridges and 2 Handles With Red & Blue Indexes



**Can Only Be Used On Faucets Purchased After January 2016. For Older Faucets, Consult Customer Service.*

⚠ WARNING:

Faucet(s) on this page may expose you to chemicals, including lead, that are known to the State of California to cause cancer or birth defects or other reproductive harm. For more info, visit www.p65warnings.ca.gov.



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For Smart Fabrication™ Quotes:

Email: smartfab@advancetabco.com or Fax: 631-586-2933

FAUCET PARTS & ACCESSORIES

Faucet Repair Kit

For K-22, K-59, K-123, K-125, K-126, K-206 & K-316 Faucets
Includes 2 Cartridges and Handles

*Can Only Be Used On Faucets Purchased After January 2016. For Older Faucets, Consult Customer Service.

K-00A (Set of 2)



Faucet Repair Kit

For K-1, K-11, K-50, K-51, K-52, K-53, K-56, K-124, K-101, K-160, K-208 & K-240 Faucets
Includes 2 Cartridges and Handles

*Can Only Be Used On Faucets Purchased After January 2016. For Older Faucets, Consult Customer Service.

K-00B (Set of 2)



Service Faucet Vacuum Breaker Repair Kit

For K-240 Faucet

*Can Only Be Used On Faucets Purchased After January 2016. For Older Faucets, Consult Customer Service.

K-03



K-02 Filler Faucet Repair Kit

For K-54 & K-54A Faucets

*Can Only Be Used On Faucets Purchased From 2016 - 2019. For Older Faucets, See Below.



K-02A Filler Faucet Repair Kit

For K-54 & K-54A Faucets

*Can Only Be Used On Faucets Purchased Before January 2016 or After 2019.

Pedal/Knee Valve Replacement Parts

Replacement Bonnet for Pedal/Knee Valve

For K-103, K-104, 7-PS-32 & 7-PS-39

K-01



Replacement Check Valves

For K-103, K-104, 7-PS-32 & 7-PS-39

K-19



Thermostatic Mixing Valve

For K-103, K-104, 7-PS-32 & 7-PS-39

K-425



Mixing Valve & Retainer

For K-103, K-104, 7-PS-32 & 7-PS-39

K-19A



Faucet Options & Accessories

Hands-Free Wand



K-400



Low Flow Aerator



K-08

.5 GPM

Wrist Handles (Pair)



K-316-LU

*Can Only Be Used On Faucets Purchased After January 2016. For Older Faucets, Consult Customer Service.

Wrist Handles (Pair)

For Heavy Duty 8" O.C. Faucets



K-416-LU

Splash Mount Faucet Mounting Kit

K-1, K-11, K-101, K-105, K-112, K-119 & K-211

K-06



Faucet Wall Mounting Bracket

8" O.C.

K-30



Customer Service Available To Assist You **1-800-645-3166** 8:30 am - 7:00 pm E.S.T.

For Orders & Customer Service:

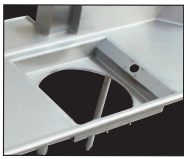
Email: customer@advancetabco.com or Fax: 631-242-6900

For Smart Fabrication™ Quotes:

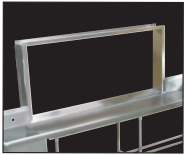
Email: smartfab@advancetabco.com or Fax: 631-586-2933

DISHTABLE MODS

Dishtable Modifications & Accessories



DTA-95



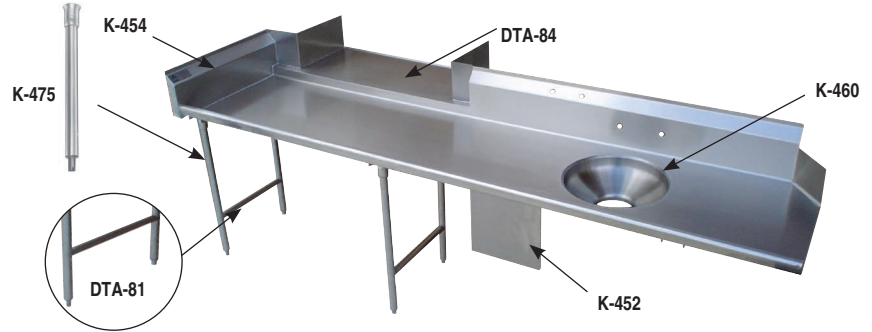
DTA-87



DTA-82



DTA-45



MODIFICATIONS

K-23	Welded Set-Up/Crated		
K-24	Shell Crating		
K-37	Anti-Siphon Vacuum Breaker Hole		
K-57	Welded Field Joint (Welded In Field By Others)		
K-76	Paint On Sound Deadening		
K-77	Splash Cut-Out (Pipe Chase)		
K-440	Waste Trough Installation Welded Into Table And Furnished With A 2" Deep Removable Basket		
K-452	Control Bracket 8" x 12"		
K-453	Control Bracket 14" x 16"		
K-454	Side Splash		
K-456	Scrap Block Installed (Includes Rubber Scrap Block)		
K-460	Disposal Cone Welded Into Table And Furnished With 8" x 12" Control Bracket & Faucet Holes (Supplied By Others)		
K-460A	Installation Of Disposal Cone With 14" x 16" Control Bracket, Faucet Holes (Cone Supplied By Others)		
K-461	Disposal Collar Welded Into Sink Bowl And Furnished With 8" x 12" Control Bracket (Supplied By Others)		
K-461A	Disposal Collar Welded Into Sink Bowl And Furnished With 14" x 16" Control Bracket (Supplied By Others)		
K-472	Special Faucet Hole Location		
K-495	Turn Down Backsplash (Incl. 2 Brackets. See K-397 For Add'l Sets)		
K-508A	Special Modification Charge		
K-550	Stainless Steel Tubular Rack Storage		
DTA-40	Drain Hole (For Sorting Table)		
DTA-45	Scrap Trough Welded To Dump Sink - Min. Scrap Trough Length Is 3'. Max. Length Is 8'. For 20" x 20" x 8" Bowl Spec-Line Soil S30 Series Only. - Consult Factory For Trough Lengths Exceeding 8 Feet		
DTA-46	Inside Mitered Corner		
DTA-66	Provision For Dishlanding On Straight Soil Table (Min 4')		
DTA-70	Install Booster Heater Brackets (Brackets By Others)		
DTA-72	Provision For Side Loader		
DTA-75	Provision For Limit Switch (Limit Switch By Others)		
DTA-76	Move Prerinse Sink To Conform To Dishmachine Requirements. Please Specify Machine When Placing Order		
DTA-78	Notch In Backsplash Return To Clear Handle Please Specify Machine When Placing Order		
DTA-81	S/S Welded Leg Assembly with S/S Feet		
DTA-82	15" x 20" x 8" Undercounter Dump Sink		
DTA-84	Simple Pass-Thru (Specify Wall Thickness - Min. Length 36")		
DTA-87	Pass-Thru Wall Frame (Specify Wall Thickness - Min. Length 36")		
DTA-95	Install Scrapper Top		
DTA-96	Install Trough Collector		
DTA-99A	16" x 20" x 12" Sink Bowls		
DTA-99B	20" x 20" x 12" Sink Bowls		
DTA-99C	10" x 14" x 5" Dump Sink		
DTA-99D	18" x 24" x 14" Sink		
DTA-99E	24" x 24" x 14" Sink		
DTA-106	Mirror Highlight To Dishtable Upgrade		

ACCESSORIES

K-4	Lever Drain Bracket	DTA-52	Pre-Rinse Slide Bar for 24" x 24" Fab. Sink Bowls
K-5	Twist Handle Operated Drain	DTA-55	Column Notch (Includes Splash)
K-15	Twist Handle Operated Drain With Overflow	DTA-56	Add'l Length On 59" Side Of Corner Or Straight Tables
K-397	Wall Brackets (2 Each. Brackets Included With K-495)	DTA-58	Pre-Rinse Basket w/ Slide Bar for 18" x 24" Fab. Sink Bowls
K-455C	Stainless Steel Sink Cover 16" x 20"	DTA-59	Pre-Rinse Basket w/ Slide Bar for 24" x 24" Fab. Sink Bowls
K-455E	Stainless Steel Sink Cover 20" x 20"	DTA-60	Prerinse Slide Bar for 20" x 20" Fab. Sink Bowls
K-457	Replacement Rubber Scrap Block (See K-456 For Install Cost)	DTA-62	Prerinse Basket For 20" x 20" Deep Drawn Bowls
K-475	Replacement S/S Leg With Stainless Steel Bullet Foot	DTA-63	Prerinse Slide Bar For 20" x 20" Deep Drawn Bowls
K-478	Replacement Stainless Steel Bullet Foot	DTA-64	Prerinse Slide Bar For 16" x 20" Fab. Sink Bowls
K-488	Flanged S/S Bullet Foot	DTA-65	Prerinse Slide Bar For 16" x 20" Deep Drawn Bowls
K-550	Stainless Steel Tubular Rack Storage	DTA-67	Stainless Steel Rear Cross-Bracing (Factory Installed Only)
K-610	Perforated Stainless Steel Sink Grid (Specify Bowl Size)	DTA-69	Prerinse Basket For 16" x 20" Deep Drawn Bowls
K-700D	12" High Removable Side Splash For Dishtables (Specify Model)	DTA-100	Prerinse Basket with Slide Bar for 20" x 20" Fab. Sink Bowls
DTA-53	SPEC-LINE Heavy Duty Prerinse Faucet	DTA-125	Prerinse Basket with Slide Bar for 16" x 20" Fab. Sink Bowls
DTA-51	Pre-Rinse Slide Bar for 18" x 24" Fab. Sink Bowls	DTA-125A	Perforated Basket for DTA-82 Dump Sink



ADDITIONAL DISHTABLE ACCESSORIES

For More Faucet Options & Faucet Specs,
See Faucet Specifications

⚠ WARNING:
Faucet(s) on this page may expose you to chemicals, including lead, that are known to the State of California to cause cancer or birth defects or other reproductive harm. For more info, visit www.p65warnings.ca.gov.

Prerinse Baskets with Welded Slide Bar For Fabricated Bowls

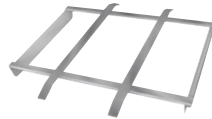
Model #	Fits Bowls	Wt.	Cu.
DTA-125	16" x 20" x 4"	9 lbs.	1
DTA-100	20" x 20" x 4"	12 lbs.	1
Large Size Baskets			
DTA-58	18" x 24" x 4"	11 lbs.	1
DTA-59	24" x 24" x 4"	20 lbs.	1



DTA-100 Shown

Prerinse Slide Bars For Fabricated Bowls

Model #	Fits Bowls	Wt.	Cu.
DTA-64	16" x 20"	7 lbs.	1
DTA-60	20" x 20"	9 lbs.	1
Large Size Prerinse Slide Bars			
DTA-51	18" x 24"	8 lbs.	1
DTA-52	24" x 24"	10 lbs.	1



Prerinse Baskets with Welded Slide Bar For Deep Drawn Bowls

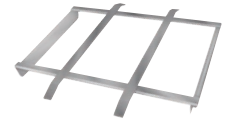
Model #	Fits Bowls	Wt.	Cu.
DTA-69	16" x 20" x 4"	9 lbs.	1
DTA-62	20" x 20" x 4"	12 lbs.	1



DTA-62 Shown

Prerinse Slide Bars for Deep Drawn Bowls

Model #	Fits Bowls	Wt.	Cu.
DTA-65	16" x 20"	7 lbs.	1
DTA-63	20" x 20"	9 lbs.	1



Splash Mounted Faucet EXTRA HEAVY DUTY

K-119
8" O.C.



16" Spout

Splash Mounted Faucet

K-101
8" O.C.



8" Spout

SPEC-LINE EXTRA HEAVY DUTY

Prerinse Faucet

DTA-53
8" O.C.

Wall Bracket Included

Splash Mounted

Interchangeable with
T&S Brand Faucets
T&S Equivalent = B133-B



Prerinse Faucet



K-116
8" O.C.

Wall Bracket Included

Splash Mtd.



Add-A-Faucet for DTA-53 Prerinse Faucet K-117



Add-A-Faucet for K-116 Prerinse Faucet K-117-TS



Stainless Steel Sink Compartment Covers

K-455
16" x 20" Cover
or
20" x 20"
Specify Size



Lever Operated Drain

K-5



Twist Handle 2" IPS

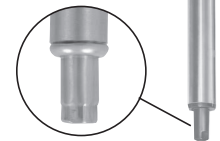
Lever Drain Support Bracket

K-4



INDIVIDUAL Stainless Steel Legs with Stainless Steel Adjustable Bullet Feet

K-475



Customer Service Available To Assist You **1-800-645-3166** 8:30 am - 8:00 pm E.S.T.

Email Orders To: customer@advancetabco.com. For Smart Fabrication™ Quotes, Email To: smartfab@advancetabco.com or Fax To: 631-586-2933

NEW YORK
Fax: (631) 242-6900

GEORGIA
Fax: (770) 775-5625

TEXAS
Fax: (972) 932-4795

NEVADA
Fax: (775) 972-1578

Submittal Sheet

01/16/2020

ITEM# 10 - MOBILE WORK TABLE (4 EA REQ'D)

Eagle Group BPT-2460SL-X

(IMPORTED) BlendPort® SL Series All-Stainless Steel Work Table with Flat Top, 60"W x 24"D, 18/430 stainless steel, hemmed rolled rim edge on front & rear, with square bend on sides, reinforced top, 1-5/8" diameter stainless steel legs, gussets, adjustable stainless steel bullet feet, 18 gauge stainless steel undershelf, NSF (Flyer NET Pricing)

ACCESSORIES

Mfr	Qty	Model	Spec
Eagle Group	16	CSB5-300-X	Stem Caster with Brake, 5" wheel diameter, 1-1/4" wheel face, 300 lb. capacity, resilient tread, donut bumper included, EAGLEbrite® zinc, NSF (FLYER)

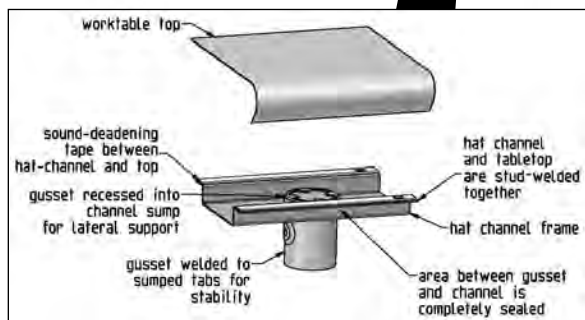


An Eagle Group Company

Specification Sheet

Short Form Specifications

BlendPort™ SL Series Worktables with Flat Top, model _____, 18 gauge type 430 stainless steel construction. Top features rolled rim on front and rear, with square bend on ends. 1½"-diameter stainless steel legs. 18 gauge stainless steel undershelf. Adjustable stainless steel bullet feet.



Optional Drawers for SL Series Worktables

16" x 20".
Fully enclosed.
Features roller slides.



description	model #
For 24"-wide tables	BPD-1620-24T
For 30"-wide tables	BPD-1620-30T

Item No.: _____
Project No.: _____
S.I.S. No.: _____

BlendPort™ SL Series All-Stainless Steel Worktables with Flat Top

- 18 gauge type 430 stainless steel construction.
- Top features hemmed rolled rim edge on front and rear, with square bend on sides, and is sound-deadened.
- Top reinforced with welded-on hat channels, which allow for mounting optional drawers.
- 1½"-diameter stainless steel legs.
- Stainless steel gussets.
- Adjustable stainless steel bullet feet.
- 18 gauge stainless steel undershelf.

width x length	weight	model #
24" x 24"	42 lbs.	BPT-2424SL
24" x 30"	45 lbs.	BPT-2430SL
24" x 36"	50 lbs.	BPT-2436SL
24" x 48"	61 lbs.	BPT-2448SL
24" x 60"	71 lbs.	BPT-2460SL
24" x 72"	82 lbs.	BPT-2472SL
24" x 96"	114 lbs.	BPT-2496SL
30" x 24"	48 lbs.	BPT-3024SL
30" x 30"	49 lbs.	BPT-3030SL
30" x 36"	52 lbs.	BPT-3036SL
30" x 48"	68 lbs.	BPT-3048SL
30" x 60"	79 lbs.	BPT-3060SL
30" x 72"	92 lbs.	BPT-3072SL
30" x 96"	126 lbs.	BPT-3096SL

BlendPort™

An Eagle Group Company
100 Industrial Boulevard, Clayton, DE 19938-8903 USA
Phone: 800-441-8440 • Fax: 302-653-2065

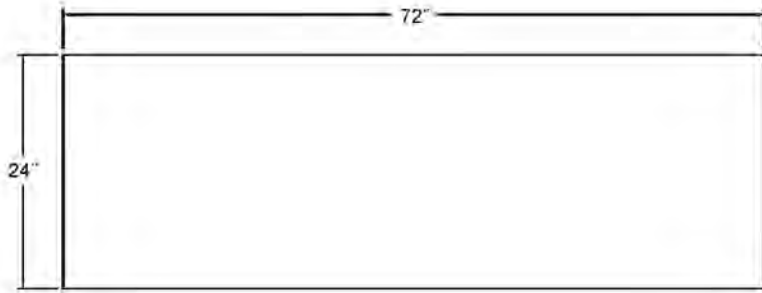
Certifications / Approvals



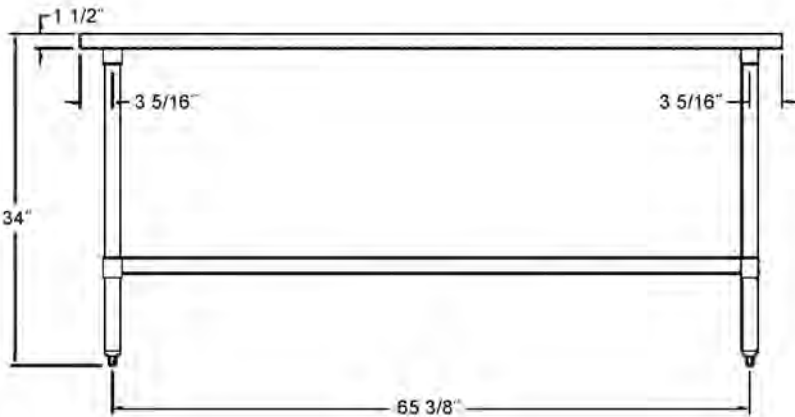


Item No.: _____
 Project No.: _____
 S.I.S. No.: _____

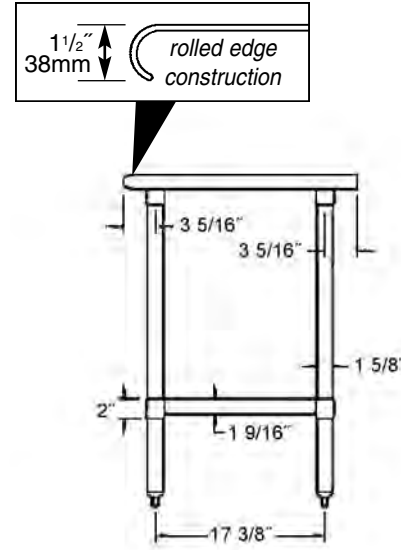
BlendPort™ SL Series All-Stainless Steel Worktables with Flat Top



TOP VIEW



FRONT VIEW



SIDE VIEW

(Note: #BPT-2472SL shown)

BlendPort™
 An Eagle Group Company
 100 Industrial Boulevard, Clayton, DE 19938-8903 USA
 Phone: 800-441-8440 • Fax: 302-653-2065

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 Rev. 11/11

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Profit from the Eagle Advantage®

Specification Sheet

Short Form Specifications

Eagle Stem Caster, model _____. For use with 1"-diameter posts. Resilient or polyurethane tread. Casters with zinc, stainless steel, and polymer boot available. For electronic handling, conductive casters available. Donut bumper included with all stem casters. Swivel casters have a temperature rating of -15°F (-26°C). Note: These stem casters cannot be used with Master Trak® Shelving.

Item No.:	_____
Project No.:	_____
S.I.S. No.:	_____

Stem Casters

MODELS:

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> CSS4-125 | <input type="checkbox"/> CSB5P-* | <input type="checkbox"/> CSPB5-300 | <input type="checkbox"/> A201008 |
| <input type="checkbox"/> CSS5* | <input type="checkbox"/> CSR5P-* | <input type="checkbox"/> CPSS5PS-* | <input type="checkbox"/> A201009 |
| <input type="checkbox"/> CSB5* | <input type="checkbox"/> CSS5PS-* | <input type="checkbox"/> CPSB5PS-* | <input type="checkbox"/> A204795 |
| <input type="checkbox"/> CSR5* | <input type="checkbox"/> CSB5PS-* | <input type="checkbox"/> A201706 | <input type="checkbox"/> A207562 |
| <input type="checkbox"/> CSS5P-* | <input type="checkbox"/> CSR5PS-* | <input type="checkbox"/> A201007 | <input type="checkbox"/> A200019 |
| | | | <input type="checkbox"/> A213261 |

* See charts for complete model numbers.



swivel caster
with resilient tread



(nickel-plated) caster
with polyurethane tread



conductive caster

Casters with Resilient Tread

type	EAGLEbrite® zinc capacity			stainless steel capacity			wheel diameter		wheel face		weight	
	model #	lbs.	kg	model #	lbs.	kg	in.	mm	in.	mm	lbs.	kg
swivel	CSS4-125	125	56.7	n/a			4"	102	1"	25	1.1	0.5
swivel	CSS5-125	125	56.7	n/a			5"	127	1"	25	2.0	0.9
swivel	CSS5-300	300	136.1	CSS5S-200	200	90.7	5"	127	1 1/4"	32	2.5	1.2
w/brake	CSB5-300	300	136.1	CSB5S-200	200	90.7	5"	127	1 1/4"	32	2.8	1.3
w/step-pedal brake	CSPB5-300	300	136.1	n/a			5"	127	1 1/4"	32	2.8	1.3
rigid ▼	CSR5-300	300	136.1	CSR5S-200	200	90.7	5"	127	1 1/4"	32	3.5	1.6

Casters with Polyurethane Tread

type	nickel-plated model #	stainless steel capacity		wheel diameter		wheel face		weight		
		model #	lbs.	kg	in.	mm	in.	mm	lbs.	kg
swivel	CSS5P-300	CSS5PS-300	300	136.1	5"	127	1 1/4"	32	2.5	1.1
w/brake	CSB5P-300	CSB5PS-300	300	136.1	5"	127	1 1/4"	32	2.8	1.3
rigid ▼	CSR5P-300	CSR5PS-300	300	136.1	5"	127	1 1/4"	32	3.5	1.6

Conductive Casters For electronic handling only.

type	EAGLEbrite® zinc model #	capacity		wheel diameter		wheel face		weight	
		lbs.	kg	in.	mm	in.	mm	lbs.	kg
swivel	CSS5-CC	200	90.7	5"	127	1 1/4"	32	2.5	1.1
w/brake	CSB5-CC	200	90.7	5"	127	1 1/4"	32	2.8	1.3
rigid ▼	CSR5-CC	200	90.7	5"	127	1 1/4"	32	3.5	1.6

▼ See back page for optional Channel Frames available for use with rigid casters.

EAGLE GROUP

100 Industrial Boulevard, Clayton, DE 19938-8903 USA

Phone: 302-653-3000 • Fax: 302-653-2065

www.eaglegrp.com • www.eaglehmc.com

Foodservice Division: Phone 800-441-8440

MHC Division: Phone 800-637-5100

For custom configuration or fabrication needs, contact our SpecFAB® Division.

Phone: 302-653-3000 • Fax: 302-653-2065 • e-mail: quotes@eaglegrp.com

Certifications / Approvals



AutoQuotes



EG01.05A Rev. 09/19

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Profit from the Eagle Advantage®

Item No.: _____
 Project No.: _____
 S.I.S. No.: _____

Stem Casters



cart-washable
caster

Cart-Washable Casters

Features stainless steel boot, swivel stem, sealed precision bearings, and polyurethane wheel.

type	stainless steel model #	capacity		wheel diameter		wheel face		weight	
		lbs.	kg	in.	mm	in.	mm	lbs.	kg
swivel	CSS5WPS-300	300	136.1	5"	127	1 1/4"	32	2.0	0.9
brake	CSB5WPS-300	300	136.1	5"	127	1 1/4"	32	2.0	0.9



polymer caster

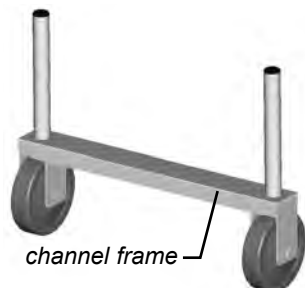
Polymer Casters

With polyurethane tread.

type	model #	type of bearing	capacity		wheel diameter		wheel face		weight	
			lbs.	kg	in.	mm	in.	mm	lbs.	kg
swivel	CPSS5-250	delrin	250	113.4	5"	127	1 1/4"	32	2.0	0.9
brake	CPSB5-250	delrin	250	113.4	5"	127	1 1/4"	32	2.0	0.9

Channel Frames—for Rigid Stem Casters

Please note that shelf width must be known when ordering rigid stem casters in order to ship appropriate channel frame to lock rigid casters.



channel frame

model #	shelf width		weight	
	in.	mm	lbs.	kg
A201706	14"	356	1.5	0.7
A201007	18"	457	2.0	0.9
A201008	21"	533	2.5	1.1
A201009	24"	610	2.8	1.3
A204795	30"	762	3.5	1.6
A207562	36"	914	4.0	1.8



donut bumper
#A200019

Donut Bumpers—for all Stem Casters

description	model #
3 1/2" (89mm) diameter	A200019
5" (127mm) diameter, with swivel center	A213261

EAGLE GROUP

100 Industrial Boulevard, Clayton, DE 19938-8903 USA

Phone: 302-653-3000 • Fax: 302-653-2065

www.eaglegrp.com • www.eaglegrp.com

Foodservice Division: Phone 800-441-8440

MHC Division: Phone 800-637-5100

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Rev. 09/19

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Submittal Sheet

01/16/2020

ITEM# 11 - SPARE NO.

<Spare No.>

Submittal Sheet

01/16/2020

ITEM# 12 - SPARE NO.

<Spare No.>

Submittal Sheet

01/16/2020

ITEM# 13 - HOSE REEL ASSEMBLY (1 EA REQ'D)

T&S Brass B-1444

Hose Reel Assembly, enclosed, 3/8" x 50 ft. hose with blue spray valve, 8" wall mount mixing faucet, adjustable centers, quarter-turn Eterna cartridges with spring checks, lever handles with color coded indexes, EasyInstall 16" and rigid 40" risers, 36" flexible water hose connector with stainless steel quick disconnect, with ratcheting system & adjustable hose bumper, (2) 2-3/8" wall brackets, stainless steel hose reel, 1/2" NPT

ACCESSORIES

Mfr	Qty	Model	Spec
T&S Brass	1	B-0230-K	Installation Kit, (2) 1/2" NPT nipples, lock nuts & washers, (2) short "EII" 1/2" NPT female x male
T&S Brass	1	G019430-45	EasyInstall Universal Hose Reel Swing Bracket, fits 1/2" & 3/8" hose reels, includes mounting hardware, stainless steel



T&S BRASS AND BRONZE WORKS, INC.

2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Model No.

B-1444

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

This Space for Architect/Engineer Approval

Job Name _____ Date _____

Model Specified _____ Quantity _____

Customer/Wholesaler _____

Contractor _____

Architect/Engineer _____

B-0963
Continuous Pressure
Vacuum Breaker w/
Integral Check Valve

3/8" NPT x 36"
Flexible Water
Hose

3/8" NPT x 40" Riser

Stainless Steel
Quick Disconnect

Control Valve

(2) B-0109-07
Wall Brackets

EasyInstall
3/8" NPT x 16" Riser

3 11/16"
[94mm]

Adjustable From
7 3/4" to 8 1/4"
[197mm to 210mm]

8" Wall Mount
Mixing Faucet,
Quarter-Turn
Eterna Cartridges
w/ Spring Checks
& Lever Handles
w/ Color Coded
Indexes

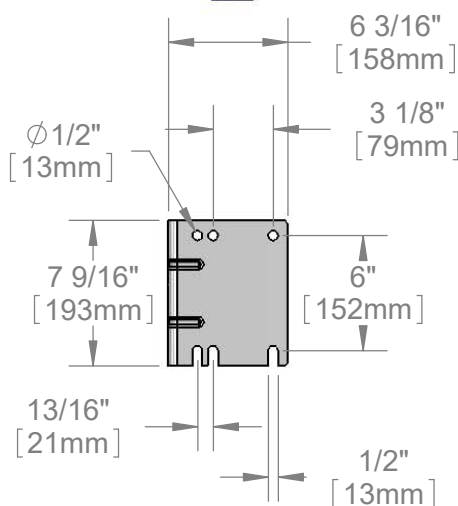
12 5/8"
[321mm]

Ø 2" [51mm]
Flanges w/
1/2" NPT
Female Inlets

Enclosed Stainless Steel
Hose Reel w/ 50' of 3/8" Hose

019652-40
3/8" NPT
Live Swivel

EB-0107
High Flow
Spray Valve



63 5/16"
[1609mm]

Product Specifications:

Enclosed Stainless Steel Hose Reel w/ 50' of 3/8" Hose, High Flow Spray Valve w/ Swivel, Vacuum Breaker, 3/8" NPT Flexible Connector, 8" Wall Mount Mixing Faucet & Control Valve

Product Compliance:

NSF 61 Exempt (Non-Potable)
EPA Act 2005 Non-Compliant (PRSV)
ASSE 1056 (VB)



T&S BRASS AND BRONZE WORKS, INC.

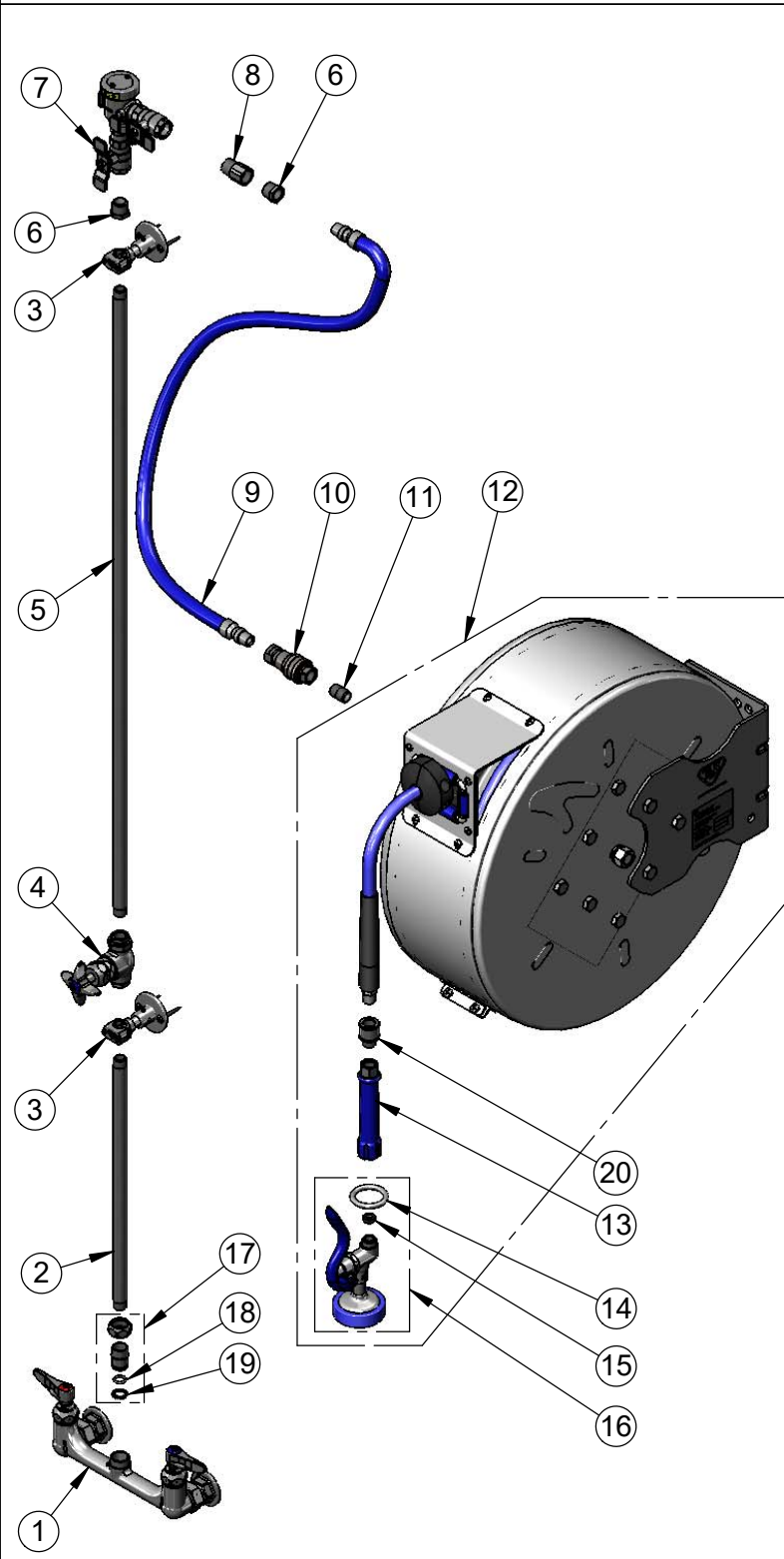
2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Model No.

B-1444

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com



ITEM NO.	SALES NO.	DESCRIPTION
1	002832-40	8" Wall Mount Mixing Faucet
2	000368-40	3/8" NPT x 16" Riser
3	B-0109-07	Wall Bracket
4	0RK3	Control Valve
5	002558-40	3/8" NPT x 40" Riser
6	001359-40	1/2" NPT Male x 3/8" NPT Female Hex Bushing
7	B-0963	1/2" NPT Continuous Pressure VB w/ Integral Check Valve
8	015073-40	Check Valve w/ 1/2" NPT Adapter
9	HW-2B-36	3/8" NPT x 36" Flexible Water Hose
10	AW-5B	3/8" NPT Quick Disconnect
11	002535-25	3/8" Close Nipple
12	B-7142-C01	Enclosed Stainless Steel Reel 50' of 3/8" Hose
13	012504-40	Grip Handle (Blue), 3/8" NPT
14	000907-45	Spray Valve Hold Down Ring
15	010476-45	#27 Washer
16	EB-0107	High Flow Spray Valve (Blue)
17	EZ-K	EasyInstall Kit
18	001065-45	O-Ring
19	014200-45	Lock Washer
20	019652-40	3/8" NPT Live Swivel

Product Specifications:
 Enclosed Stainless Steel Hose Reel w/ 50' of 3/8" Hose, High Flow Spray Valve w/ Swivel, Vacuum Breaker, 3/8" NPT Flexible Connector, 8" Wall Mount Mixing Faucet & Control Valve

Product Compliance:
 NSF 61 Exempt (Non-Potable)
 EPA Act 2005 Non-Compliant (PRSV)
 ASSE 1056 (VB)

Drawn: DMH Checked: JRM Approved: JHB Date: 06/15/18 Scale: NTS Sheet: 2 of 2



T&S BRASS AND BRONZE WORKS, INC.

2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

Model No.

B-0230-K

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

This Space for Architect/Engineer Approval

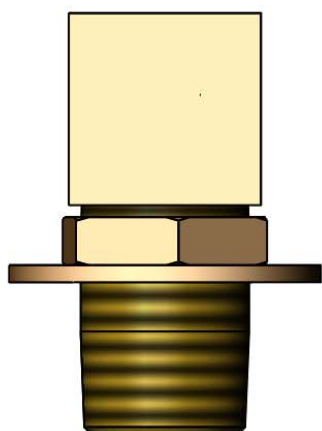
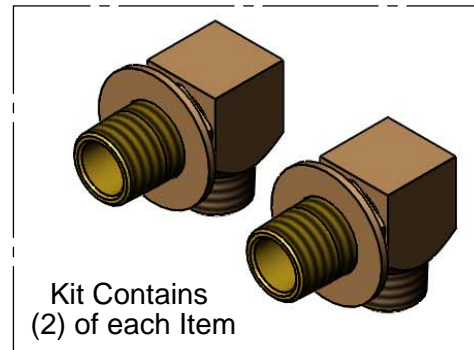
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Model Specified _____ Quantity _____

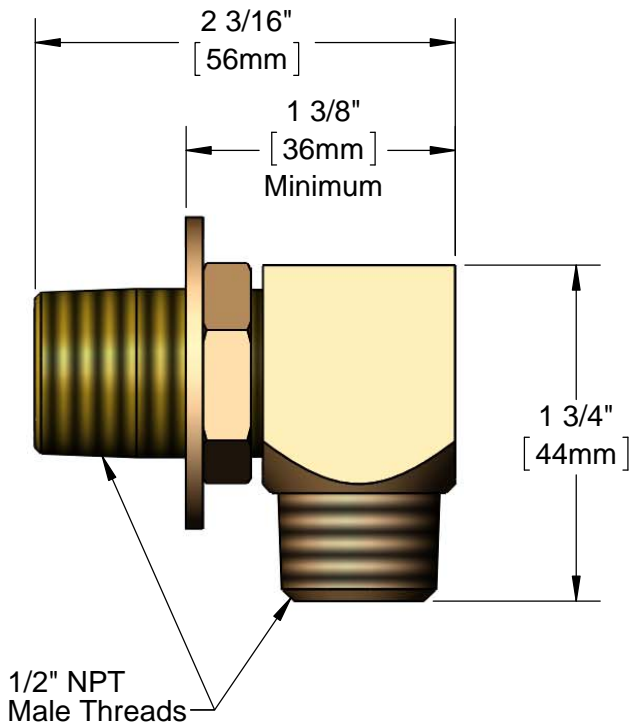
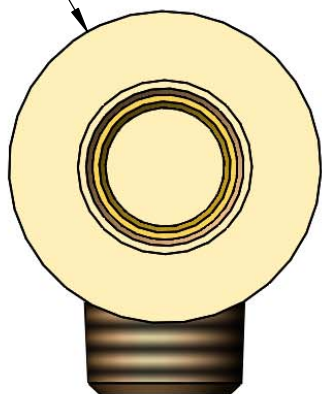
Customer/Wholesaler _____

Contractor _____

Architect/Engineer _____



Ø 1 5/8"
[41mm]



Product Specifications:
1/2" NPT Male Elbow Kit w/ Lock Nut & Washer

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)



T&S BRASS AND BRONZE WORKS, INC.

2 Saddleback Cove / P.O. Box 1088
Travelers Rest, SC 29690

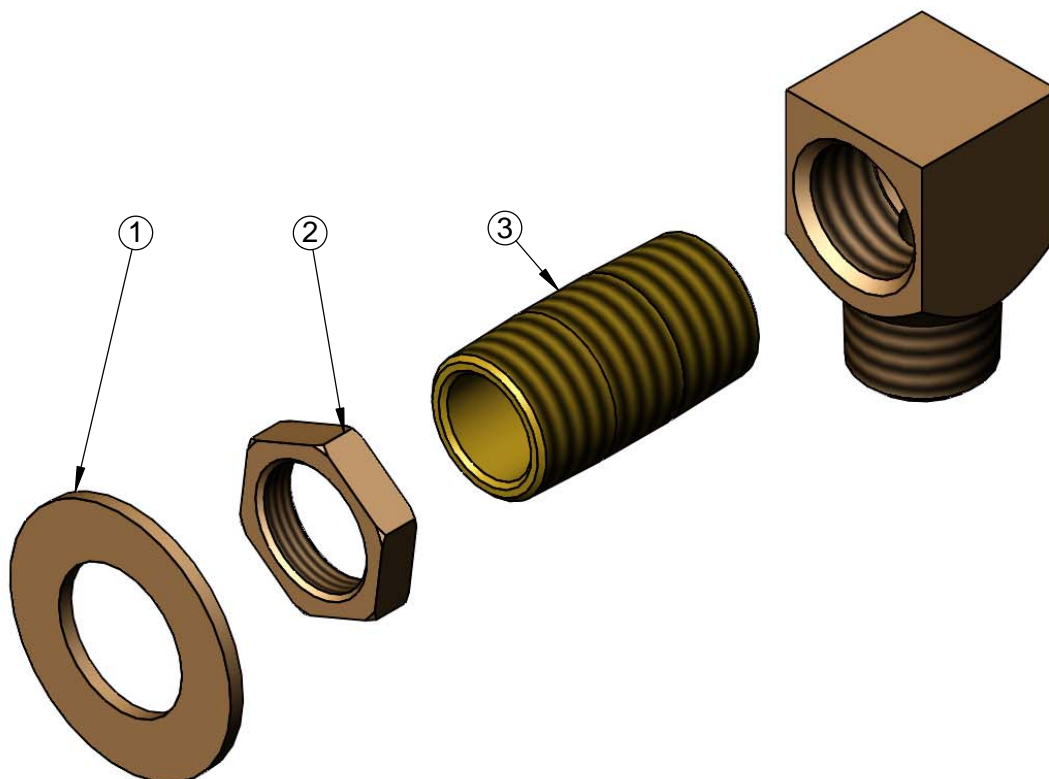
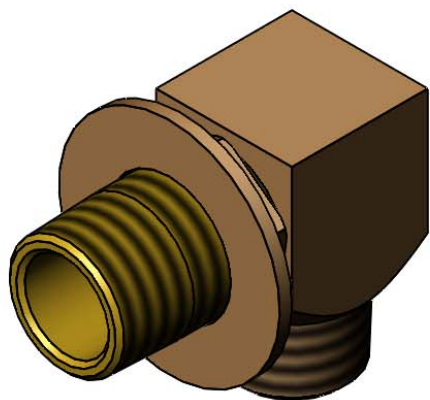
Model No.

B-0230-K

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

ITEM NO.	SALES NO.	DESCRIPTION
1	000999-45	Brass Lock Washer
2	002954-45	Shank Lock Nut
3	013357-20	1/2" NPT x 1-5/8" Lg. Close Nipple



Product Specifications:
1/2" NPT Male Elbow Kit w/ Lock Nut & Washer

Product Compliance:
ASME A112.18.1 / CSA B125.1
NSF 61 - Section 9
NSF 372 (Low Lead Content)



T&S BRASS AND BRONZE WORKS, INC.
 2 Saddleback Cove / P.O. Box 1088
 Travelers Rest, SC 29690

Model No.
G019430-45

Item No.

Travelers Rest, SC: 800-476-4103 • Simi Valley, CA: 800-423-0150 • Fax: 864-834-3518 • www.tsbrass.com

This Space for Architect/Engineer Approval

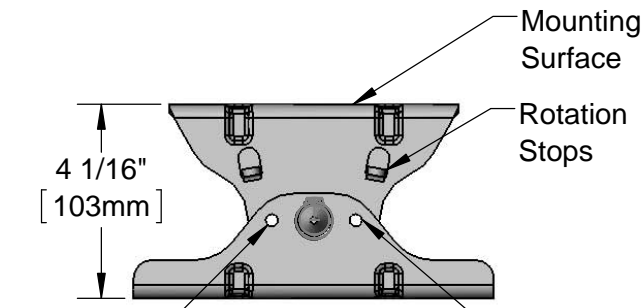
Job Name _____ Date _____

Model Specified _____ Quantity _____

Customer/Wholesaler _____

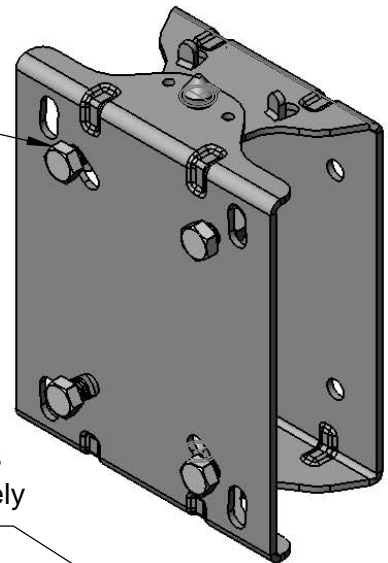
Contractor _____

Architect/Engineer _____

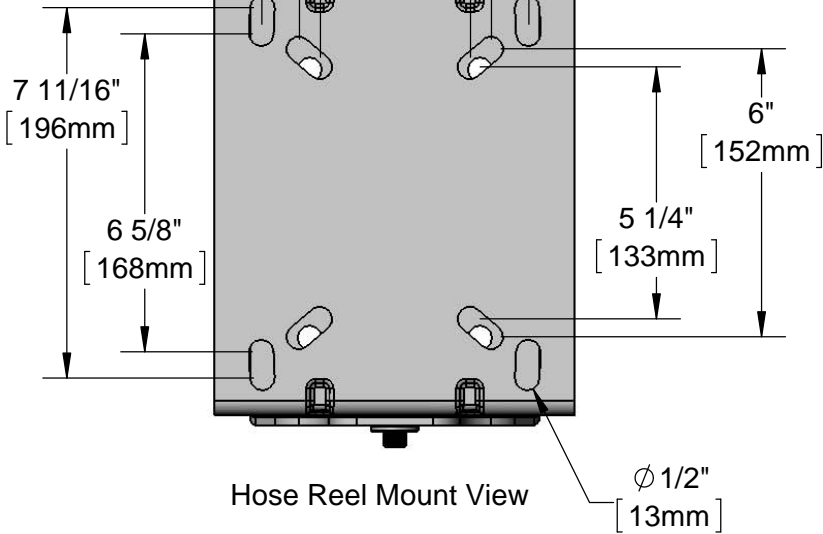
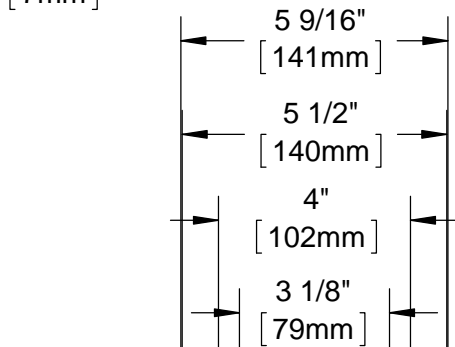


Reel-to-Bracket Mounting Hardware Included

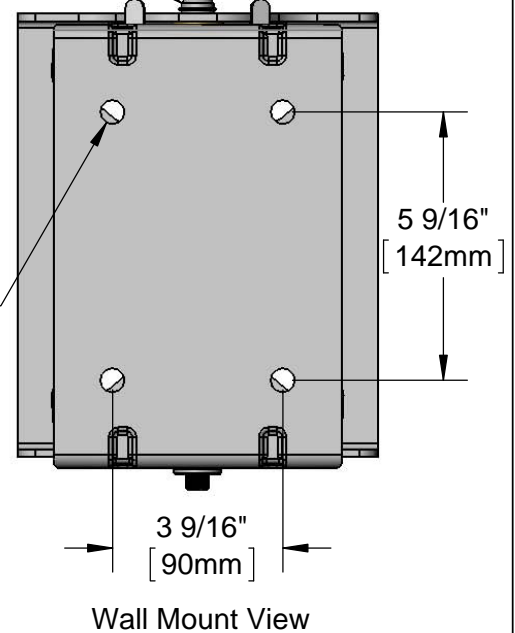
Place 1/4" Bolts in Holes to Have Stationary Positioning (Not Supplied)



Both Upper & Lower C-Clips Must Be Installed Immediately after Hose Reel Installation



ϕ 1/2" [13mm] Typ



Product Specifications:
 EasyInstall Universal Stainless Steel Hose Reel Bracket, Fits all T&S 3/8" & 1/2" Reels, One Person Installation. Includes Safety C-Clips for Securing the Hose Reel Mount to Base & Reel-to-Bracket Mounting Hardware

Product Compliance:
 N/A

STATE OF CONNECTICUT UNIVERSITY OF CONNECTICUT



THOMAS C. KATSOULEAS
PRESIDENT

McCONAUGHY DINING HALL DISH ROOM RENOVATIONS

STORRS CAMPUS
NORTH HALL DINING HALL
BUILDING #:
STORRS, CT 06269

PROJECT NO.: 300161

AREA OF RENOVATION :

PREPARED FOR:

Planning, Architectural and Engineering Services

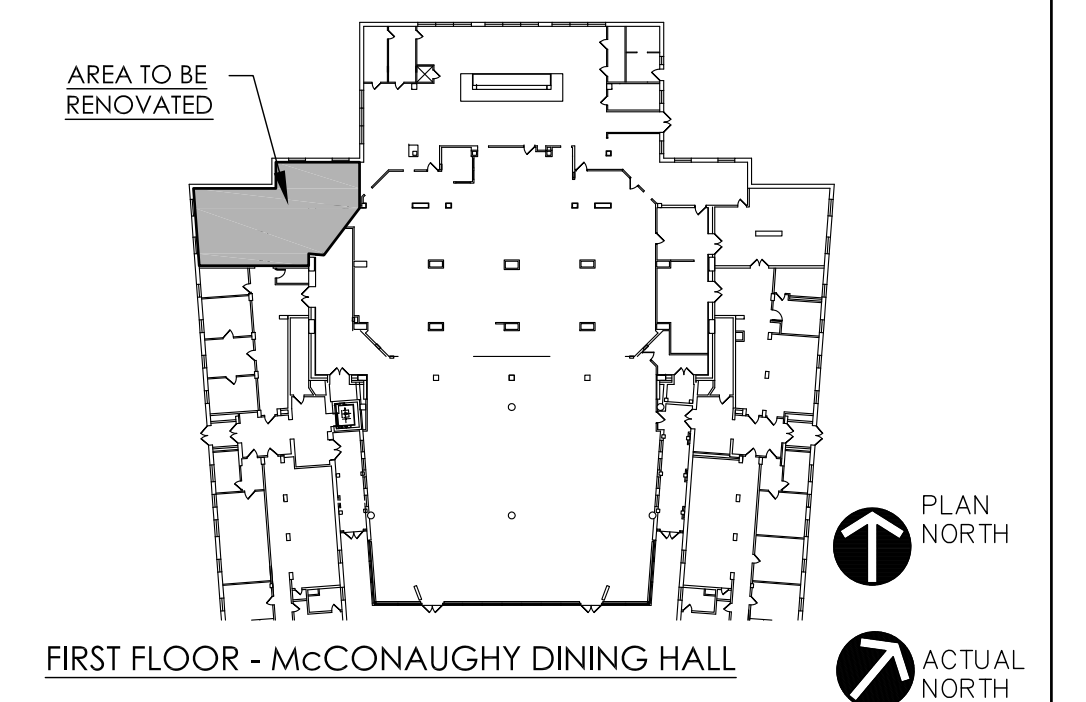
34 LeDoyt Road UNIT 3038
STORRS, CT 06269
860-486-5930

January 24, 2020

DRAWING INDEX

T-1	COVER
T-2	Specifications and Site Logistics Map
D101	Demolition Plan
D201	Reflected Ceiling Demolition Plan
A101	Construction Plan
A201	Reflected Ceiling Plan
E100	Electrical Legend and Specifications
ED100	Electrical Lighting Demo Plan
ED200	Electrical Power Demo Plan
E100	Electrical Lighting Plan
E200	Electrical Power Plan
M000	Mechanical General Notes and Legend
M100	Mechanical Demolition and New Plans
M200	Mechanical Details
M300	Mechanical Specifications
P001	Plumbing General Notes and Legends
P100	Plumbing Demolition and New Plans
P200	Plumbing Details and Schedule
P300	Plumbing Specifications
K1.1	Foodservice Equipment Layout and Utility Schedule
K2.1	Foodservice Building Conditions and Plumbing Plans
K2.2	Foodservice Electrical Plan
K6.1	Foodservice Details
K6.2	Foodservice Details
K6.3	Foodservice Details

Permit Set
January 24, 2020



FOOD SERVICE CONSULTANT

Colburn & Guyette
100 LedgeWood Place
Rockland, MA

ARCHITECT



34 Sequassen Street, Second Floor, Hartford, CT 06106
Tel: 860.293.0093 / Fax: 860.293.0094

MEP ENGINEER

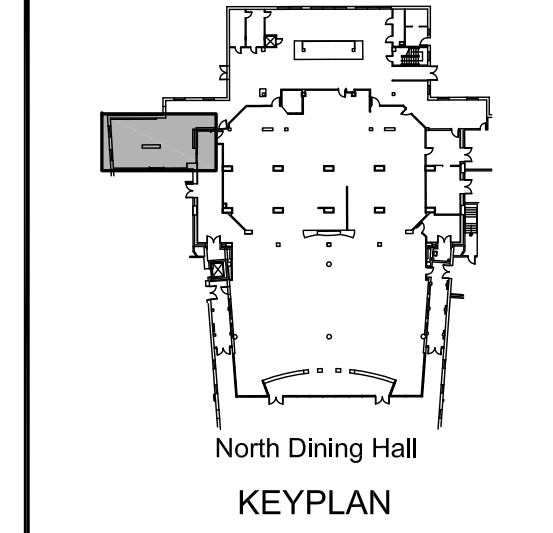
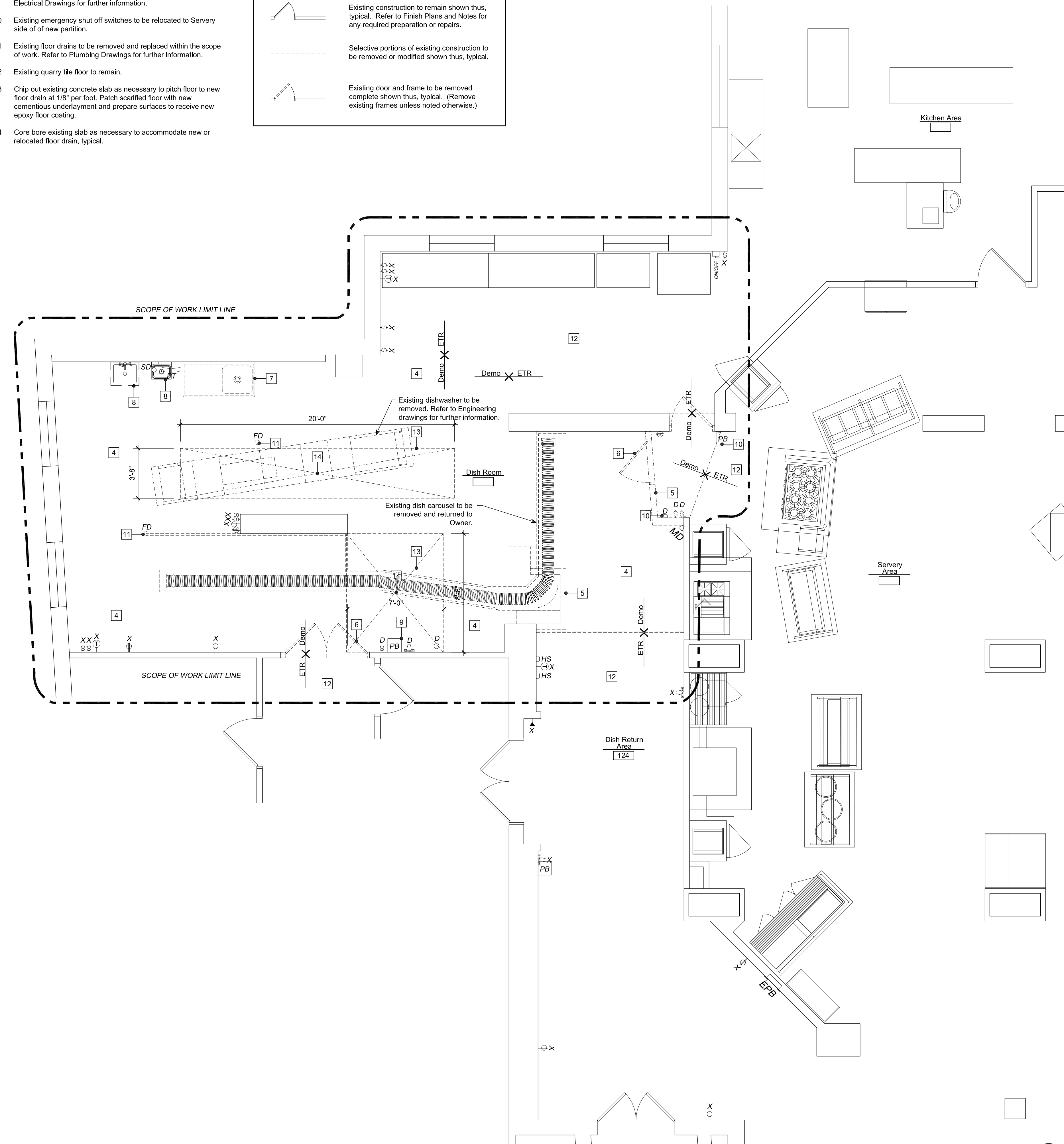
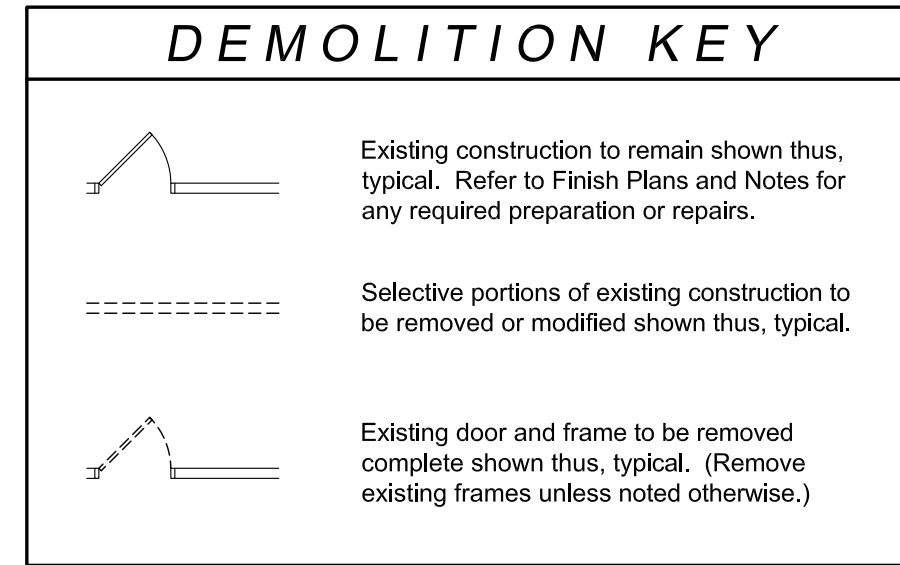


PROJECT SITE LOCATION
NO SCALE

DEMOLITION NOTES:

- Demo 1 Numbered Notes refer to this sheet only unless specifically indicated otherwise.
- Demo 2 The Contractor shall thoroughly familiarize himself with the facility and the drawings prior to beginning any demolition. All work shall be coordinated with the designated Project Manager and Building Management.
- Demo 3 Dashed lines indicate existing construction to be removed or modified. Exercise care during demolition activities to maintain adjacent spaces and construction designated to remain. Take care during selective demolition not to damage or disturb any items to remain.
- Demo 4 Existing tile and tile cove base to be removed. Prepare concrete slab to receive new epoxy floor coating as specified.
- Demo 5 Existing partitions to be removed as shown.
- Demo 6 Existing door, frame, hardware and threshold to be removed complete.
- Demo 7 Existing stainless steel table and sink to be removed and reinstalled as shown on Construction Plan. Cap all supply, waste and vent piping in wall and repair wall surface as necessary.
- Demo 8 Existing hand sink, floor sink and wall mounted accessories to be removed and returned to Owner.

- Demo 9 Existing electrical devices to be removed and relocated, refer to Electrical Drawings for further information.
- Demo 10 Existing emergency shut off switches to be relocated to Servery side of new partition.
- Demo 11 Existing floor drains to be removed and replaced within the scope of work. Refer to Plumbing Drawings for further information.
- Demo 12 Existing quarry tile floor to remain.
- Demo 13 Chip out existing concrete slab as necessary to pitch floor to new floor drain at 1/8" per foot. Patch scarified floor with new cementitious underlayment and prepare surfaces to receive new epoxy floor coating.
- Demo 14 Core bore existing slab as necessary to accommodate new or relocated floor drain.



Colburn & Guyette
100 Ledgewood Place
Rockland, MA

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MECHANICAL AND ELECTRICAL
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750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
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Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
Storrs, CT 06269

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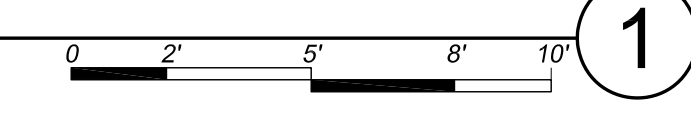
34 Sequassen Street, Second Floor, Hartford, CT 06106
Tel: 860.293.0073 / Fax: 860.293.0094

DEMOLITION PLAN

Project Number: 2018.029	Issue Date: 24 JAN 2020
Scale: 1/8" = 1'-0"	CAD File: 18029_D101.dwg
Drawn By: AP	Checked By: EAL

Revisions:

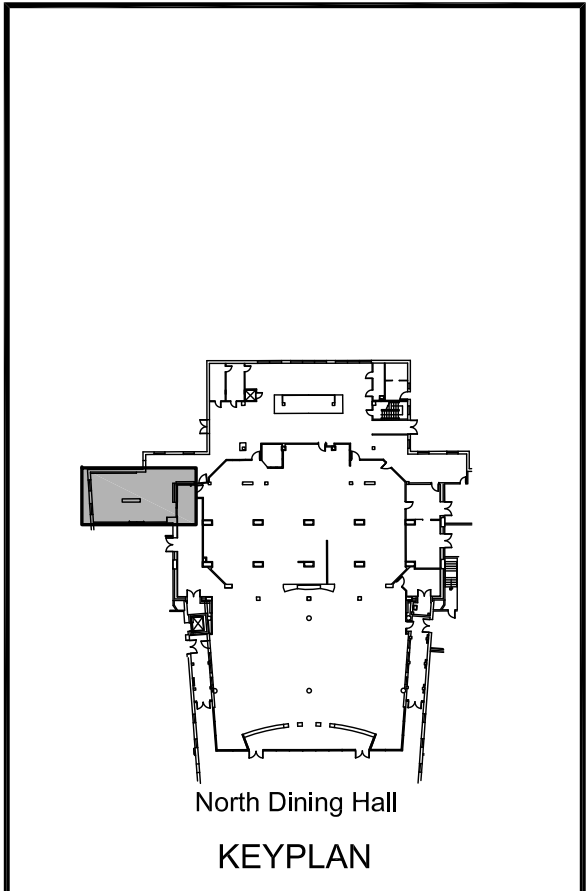
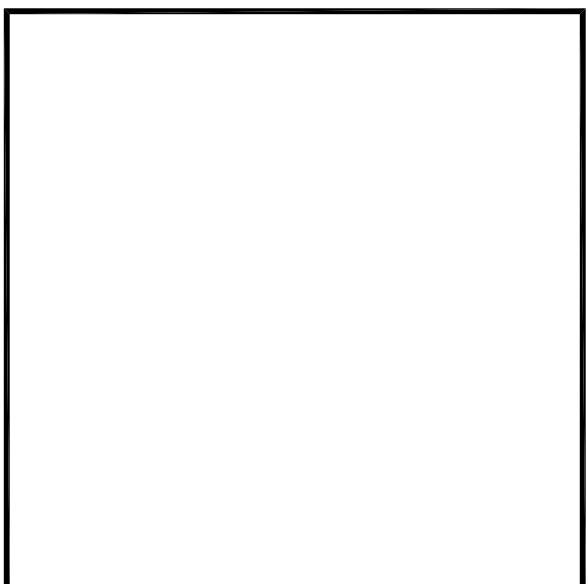
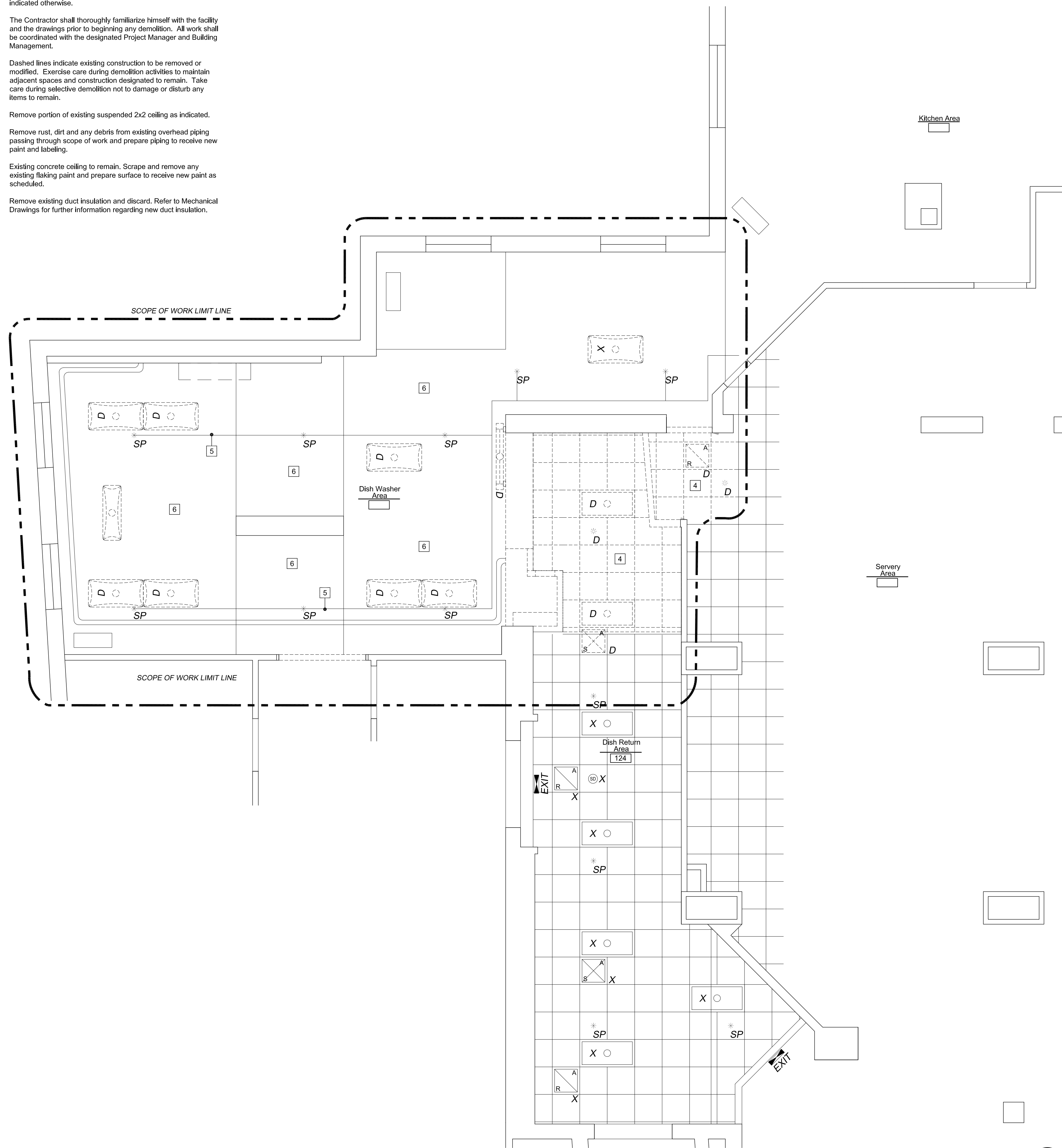
DEMOLITION PLAN
SCALE: 1/4"=1'-0"



CEILING DEMOLITION LEGEND	
SYMBOL	DESCRIPTION
	Existing 2' x 2' ceiling tiles and grid to remain
	Existing 2' x 2' ceiling tiles to be removed. Grid to be removed.
	Existing 2' x 4' Light Fixture to be removed.
	Existing 1' x 4' Light Fixture to be removed.
	Existing wall hung light fixture shown thus. X = Existing to remain, D = Remove existing
	Supply air diffuser to remain. X = Existing to remain, D = Remove existing
	Return air grille to remain. X = Existing to remain, D = Remove existing
	Existing emergency fixture shown thus. X = Existing to remain, D = Remove existing
	Existing emergency fixture shown thus. X = Existing to remain, D = Remove existing
	Existing horn and strobe shown thus. X = Existing to remain, D = Remove existing
	Existing ceiling sprinkler shown thus. SP = Sprinkler to remain, D = Remove existing

DEMOLITION NOTES:

- Demo 1 Numbered Notes refer to this sheet only unless specifically indicated otherwise.
- Demo 2 The Contractor shall thoroughly familiarize himself with the facility and the drawings prior to beginning any demolition. All work shall be coordinated with the designated Project Manager and Building Management.
- Demo 3 Dashed lines indicate existing construction to be removed or modified. Exercise care during demolition activities to maintain adjacent spaces and construction designated to remain. Take care during selective demolition not to damage or disturb any items to remain.
- Demo 4 Remove portion of existing suspended 2x2 ceiling as indicated.
- Demo 5 Remove rust, dirt and any debris from existing overhead piping passing through scope of work and prepare piping to receive new paint and labeling.
- Demo 6 Existing concrete ceiling to remain. Scrape and remove any existing flaking paint and prepare surface to receive new paint as scheduled.
- Demo 7 Remove existing duct insulation and discard. Refer to Mechanical Drawings for further information regarding new duct insulation.



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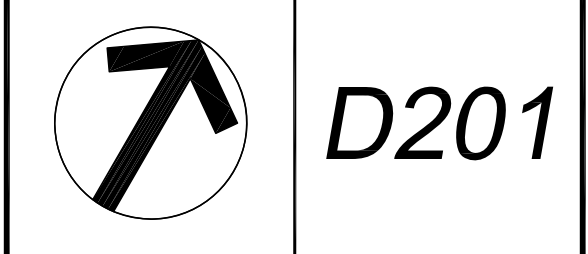
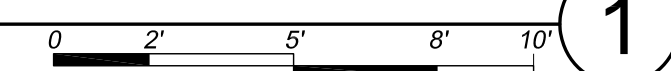
34 Sequassen Street, Second Floor, Hartford, CT 06106
 Tel: 860.293.0073 / Fax: 860.293.0094

**REFLECTED CEILING
 DEMOLITION PLAN**

Project Number: 2018.029 Issue Date: 24 JAN 2020
 Scale: 1/8" = 1'-0" CAD File: 18029_D201.dwg
 Drawn By: AP Checked By: EAL

Revisions:

REFLECTED CEILING DEMOLITION PLAN
 SCALE: 1/4"=1'-0"

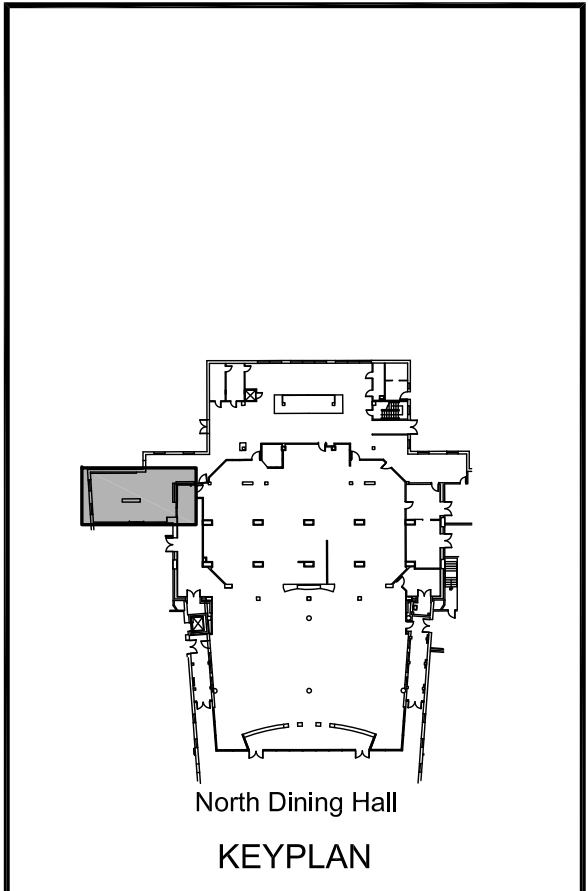
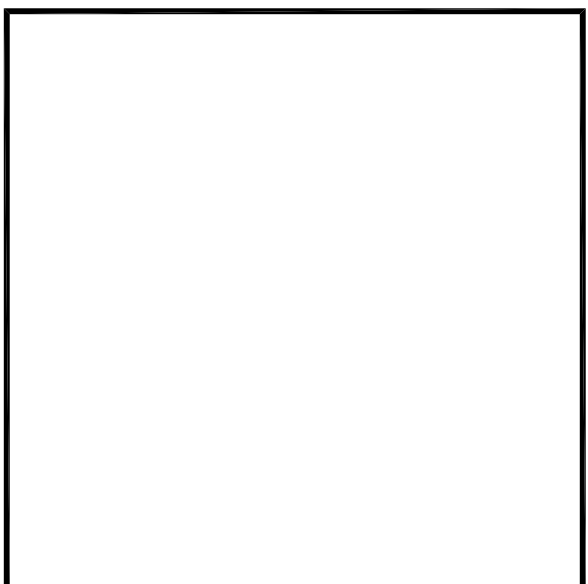
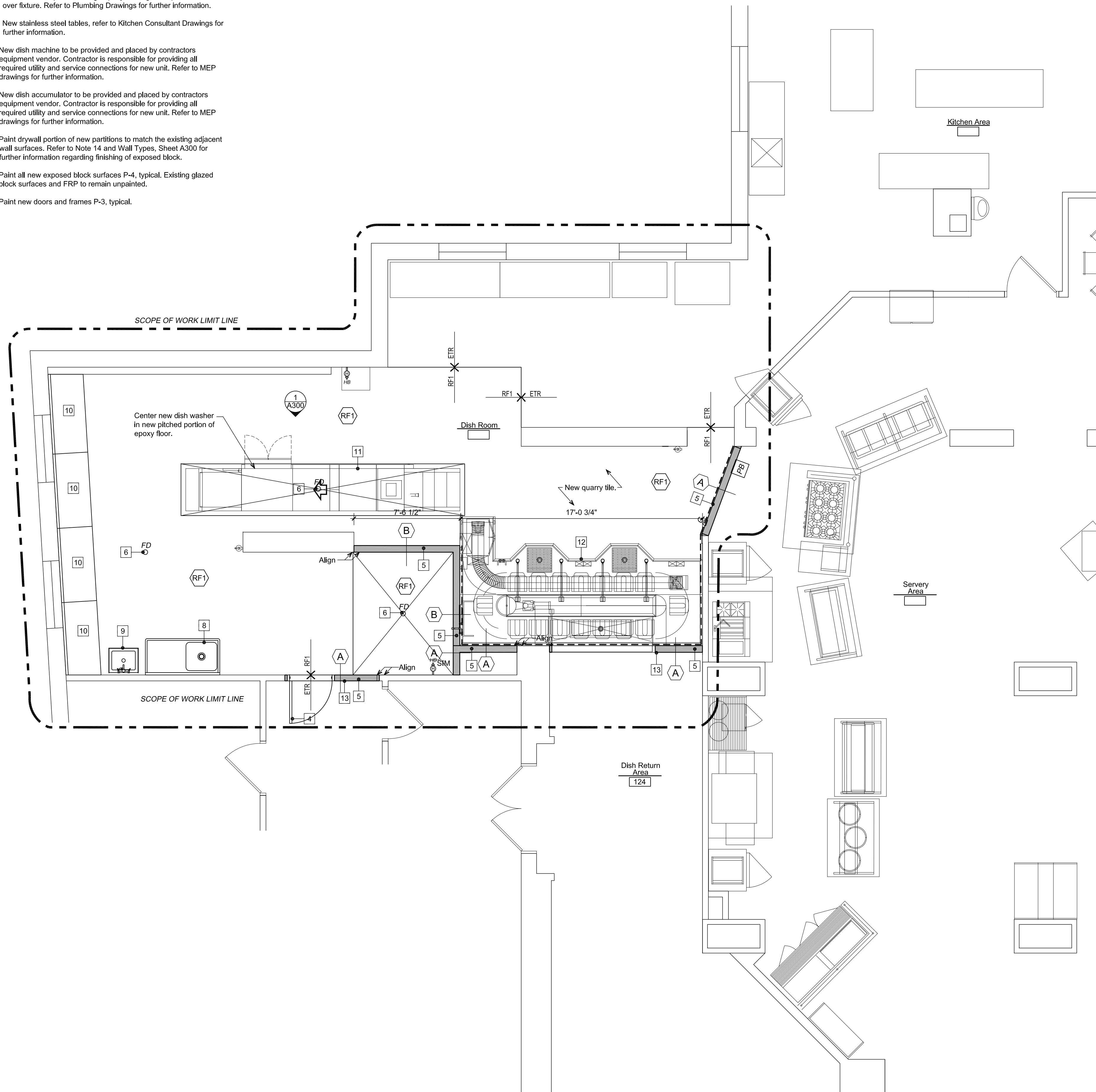


CONSTRUCTION NOTES:

- Con 1 Numbered Notes refer to this sheet only unless specifically indicated otherwise.
- Con 2 Hatched area indicates locations to be backfield and to receive new concrete slab. Refer to Detail 3/A101 for further information. New concrete to receive new Summerville 6"x6" quarry tile. Color to match existing flashed with abrasive finish or approved equal, on mortar base, refer to specification section 093013 for mortar, grout and tile information.
- Con 3 New equipment shown for coordination purposes only. Refer to Engineering Drawings for further information.
- Con 4 New 3'-0" wide by 7'-0" hollow metal door with 10" x 10" vision lite in hollow metal masonry frame with masonry head. Door to have 3 architectural five knuckle hinges, rim mounted panic device with no handle on pull side, ADA compliant overhead closer with door stop, silencers, weather stripping and bottom sweep, marble 1/2" high ADA compliant threshold and 32" x 30" high stainless steel kick plate on push side.
- Con 5 All new partitions to be 6" wide concrete block with vertical and ladder reinforcing as specified. Paint exposed surfaces of completed walls with block filler prior to applying final paint or paneled finishes.
- Con 6 New or replaced floor drain, typical throughout scope of work. Refer to Plumbing Drawings for further information.
- Con 7 Pitch new epoxy floor to floor drain at 1/8" per foot. Coordinate location of pitched floor with dish machine.
- Con 8 Relocated stainless steel table and sink shown thus. Refer to Plumbing Drawings for further information.
- Con 9 New floor sink, provide 5' high epoxy flooring backplash on wall over fixture. Refer to Plumbing Drawings for further information.
- Con 10 New stainless steel tables, refer to Kitchen Consultant Drawings for further information.
- Con 11 New dish machine to be provided and placed by contractors equipment vendor. Contractor is responsible for providing all required utility and service connections for new unit. Refer to MEP drawings for further information.
- Con 12 New dish accumulator to be provided and placed by contractors equipment vendor. Contractor is responsible for providing all required utility and service connections for new unit. Refer to MEP drawings for further information.
- Con 13 Paint drywall portion of new partitions to match the existing adjacent wall surfaces. Refer to Note 14 and Wall Types, Sheet A300 for further information regarding finishing of exposed block.
- Con 14 Paint all new exposed block surfaces P-4, typical. Existing glazed block surfaces and FRP to remain unpainted.
- Con 15 Paint new doors and frames P-3, typical.

CONSTRUCTION KEY

- Existing door and frame to remain shown thus, typical.
- New door and frame shown thus, typical.
- Existing partition to remain, patch and repair as necessary to prepare surface for new finishes scheduled.
- New partition construction shown thus, typical. Refer to wall types on Sheet A400 for further information.
- Existing recessed fire extinguisher cabinet
- Interior Elevation Flag
- Door Opening Tag, refer to Door Schedule for further information
- Wall Type Indicator
- Denotes dimension from face of framing to face of existing finished surface unless specifically noted otherwise.
- Denotes dimension between two centerlines.
- Spot elevation indicated thus. Dimensions in parenthesis are negative numbers.



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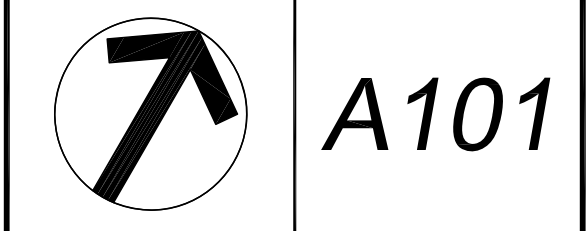
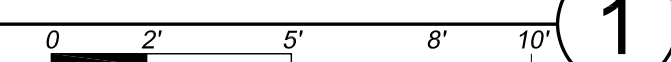
100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0093 / Fax: 860.293.0094

Title: **CONSTRUCTION PLAN**

Project Number: 2018.029 Issue Date: 24 JAN 2020
Scale: 1/8" = 1'-0" CAD File: 18029_A101.dwg
Drawn By: RK Checked By: EAL

Revisions:

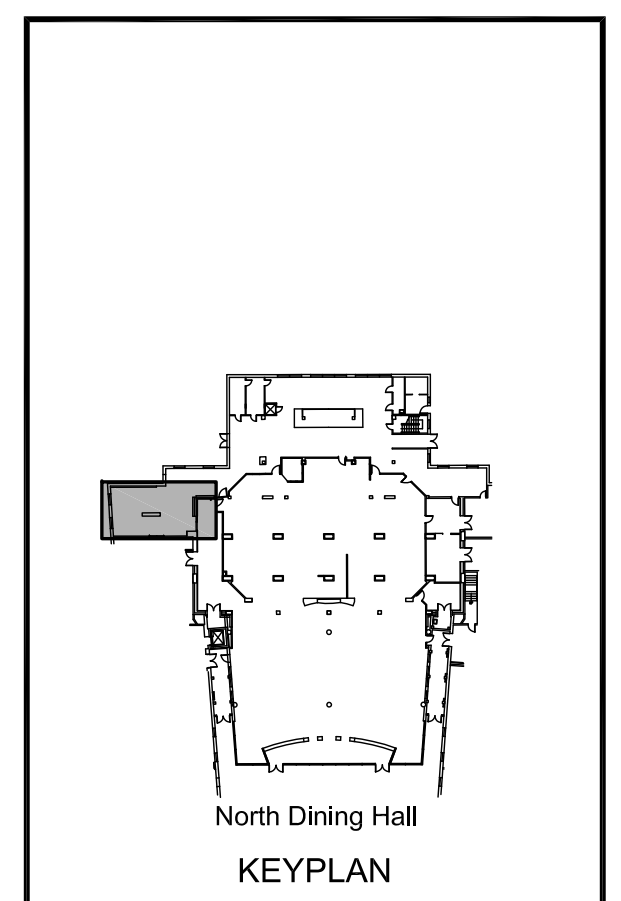
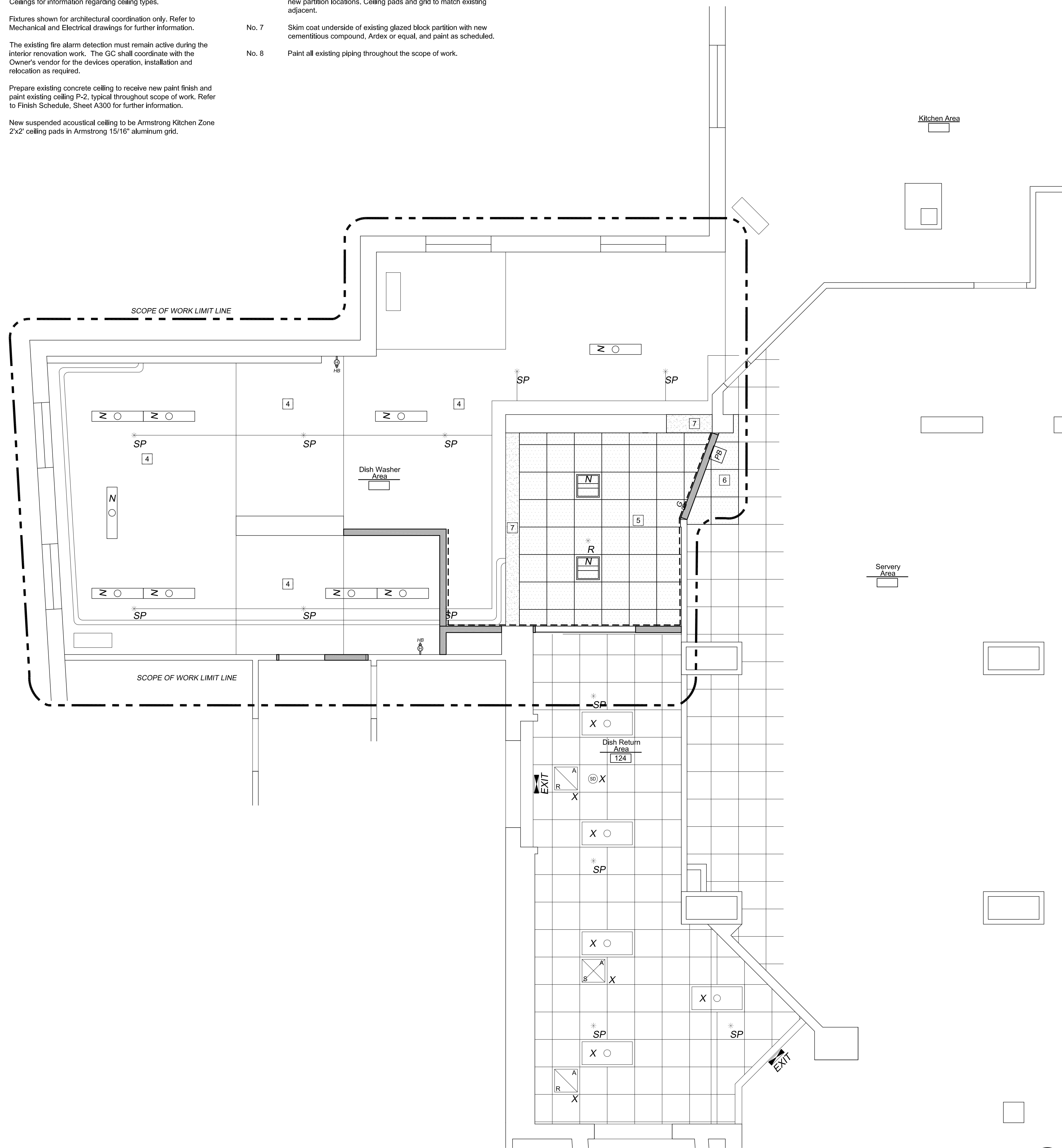
CONSTRUCTION PLAN
SCALE: 1/4"=1'-0"



CEILING LEGEND	
SYMBOL	DESCRIPTION
	New 2' x 2' ceiling tiles as specified.
	Existing ceiling tiles and grid to remain.
	Existing 2' x 4' light fixture shown thus. N = New, X = Existing to remain, R = Relocated.
	Existing 1' x 4' light fixture shown thus. N = New, X = Existing to remain, R = Relocated.
	New 1' x 4' LED Light Fixture. N = New, X = Existing to remain, R = Relocated.
	Existing wall hung light fixture shown thus. N = New, X = Existing to remain, R = Relocated.
	Supply air diffuser to remain. N = New, X = Existing to remain, R = Relocated.
	Return air grille to remain. N = New, X = Existing to remain, R = Relocated.
	Existing emergency fixture shown thus. N = New, X = Existing to remain, R = Relocated.
	Existing emergency fixture shown thus. N = New, X = Existing to remain, R = Relocated.
	Existing horn and strobe shown thus. N = New, X = Existing to remain, R = Relocated.
	Existing ceiling sprinkler shown thus. N = New, X = Existing to remain, R = Relocated.

CEILING NOTES:

- No. 1 Refer to specification section 09511- Suspended Acoustical Ceilings for information regarding ceiling types.
- No. 2 Fixtures shown for architectural coordination only. Refer to Mechanical and Electrical drawings for further information.
- No. 3 The existing fire alarm detection must remain active during the interior renovation work. The GC shall coordinate with the Owner's vendor for the devices operation, installation and relocation as required.
- No. 4 Prepare existing concrete ceiling to receive new paint finish and paint existing ceiling P-2, typical throughout scope of work. Refer to Finish Schedule, Sheet A300 for further information.
- No. 5 New suspended acoustical ceiling to be Armstrong Kitchen Zone 2x2' ceiling pads in Armstrong 15/16" aluminum grid.
- No. 6 Extend and repair existing servery ceiling system to accommodate new partition locations. Ceiling pads and grid to match existing adjacent.
- No. 7 Skim coat underside of existing glazed block partition with new cementitious compound, Ardex or equal, and paint as scheduled.
- No. 8 Paint all existing piping throughout the scope of work.



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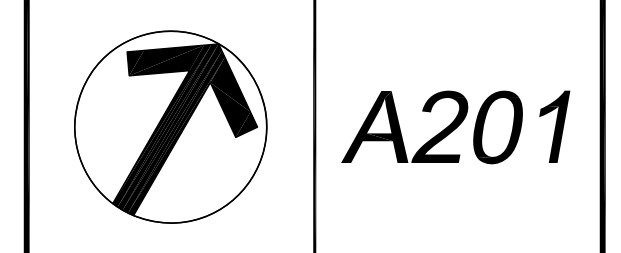
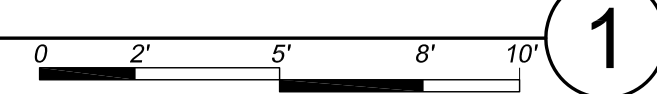
34 Sequassen Street, Second Floor, Hartford, CT 06106
Tel: 860.293.0073 / Fax: 860.293.0094

REFLECTED CEILING PLAN

Project Number: 2018.029 Issue Date: 24 JAN 2020
Scale: 1/8" = 1'-0" CAD File: 18029_A201.dwg
Drawn By: RK Checked By: EAL

Revisions:

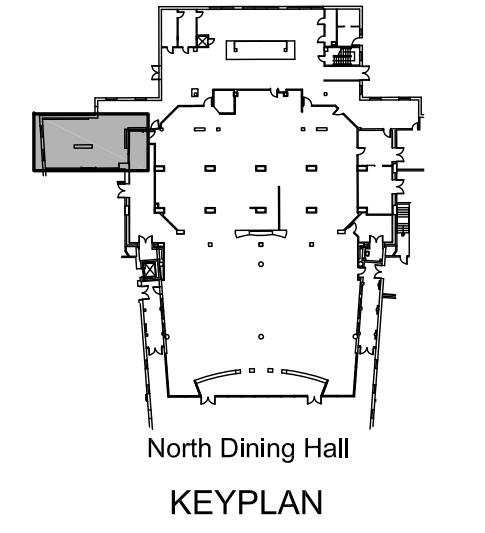
REFLECTED CEILING PLAN
SCALE: 1/4"=1'-0"



FINISH SCHEDULE					
CODE	ITEM	MANUFACTURER/STYLE/COLOR	DESCRIPTION	FLAME SPREAD CLASSIFICATION	REMARKS
RF-1	Resinous Flooring	Procrete Color: TBD	-		
P-1	Ceiling Paint	Benjamin Moore Color: TBD	Satin Finish		
P-2	Wall Paint (Gyp.)	Benjamin Moore Color: TBD	Eggshell Finish		
P-3	Door & Frame Paint	Benjamin Moore Color: TBD	Semigloss Finish		
P-4	Wall Paint (CMU)	Benjamin Moore Color: TBD	Satin Finish		

FINISH NOTES:

- | | | |
|---|--|--|
| <p>FIN 1 Refer to Specifications prior to beginning any work. Conflicts between the drawings and the specifications shall be brought to the attention of the Architect immediately.</p> <p>FIN 2 Finish notes refer to all Finish Sheets unless specifically noted otherwise.</p> <p>FIN 3 See Finish Schedule for additional information and description of finishes. In the event of a conflict between the specifications and the Finish Schedule, the scheduled finish shall be assumed to apply for pricing purposes but notify Architect for clarification.</p> <p>FIN 4 Verify all conditions in the field prior to proceeding with any work. Notify Architect of any discrepancies or conditions that would affect the work.</p> <p>FIN 5 All existing finishes in rooms and areas scheduled to receive new finishes shall be properly removed and or prepared to receive new work.</p> <p>FIN 6 Do not remove any suspected hazardous building materials without testing and verification that materials may be safely and legally removed. Coordinate finish removal with the Owner's Hazardous Materials Report, report any un-documented suspected material to the Architect.</p> | <p>FIN 7 All finishes in rooms and spaces directly adjacent to the scope of work shall be assumed to be existing to remain. All existing finishes identified in the drawings as existing to remain shall be protected from damage during the execution of the work and shall be cleaned prior to Project Close-out. Any finishes damaged by construction shall be repaired or replaced as directed by the Architect with new finishes to match and align with existing. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections. Where a change of plane of 1/4 inch or more occurs, request instructions from Architect</p> <p>FIN 8 DO NOT apply new finishes to any wall mounted electrical device unless specifically noted otherwise. Remove all cover plates and mask off all devices when applying new finishes and reinstall or replace cover plates prior to Project Closeout.</p> <p>FIN 9 All wall surfaces scheduled to receive new finishes shall be properly cleaned and prepared in accordance with the finish manufacturer's written instructions. Include any necessary primers or preparation materials as necessary to properly install the scheduled finish product.</p> | <p>FIN 10 All floor surfaces scheduled to receive new finishes shall be properly cleaned and prepared in accordance with the finish manufacturer's written instructions. Floors shall be clean, level and dry. Remove all foreign substances such as grease, wax, dirt and any other substance or chemical that would interfere with a good installation of specified finish material. Fill all holes and cracks with a cement based patching compound unless specifically instructed to use an alternate material elsewhere in these documents. Include any necessary primers or preparation materials as necessary to properly install the scheduled finish product. Where floors do not meet specified requirements for flatness or level, provide floor preparation as specified in Section 03540.</p> <p>FIN 11 Prepare any floor level transitions up to 1/2 inch high with a single component, high compressive strength, trowel-on, non-leveling, "flash-patching" material that can feather to zero or near zero. The finish slope of any transitions shall have a slope not to exceed FF 50 (1/8" in 10 FT).</p> <p>FIN 12 Provide transition strips at all changes of floor finish materials that result in a change in floor elevation. Submit proposed transition strips to the Architect for approval prior to ordering any material. Where transitions occur between rooms with doors, center transitions at the centerline of door slabs in closed position. Where transitions occur at casework openings, center transition in the opening unless noted otherwise.</p> |
|---|--|--|



Colburn & Guyette
100 Ledgewood Place
Rockland, MA

RZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
Storrs, CT 06269

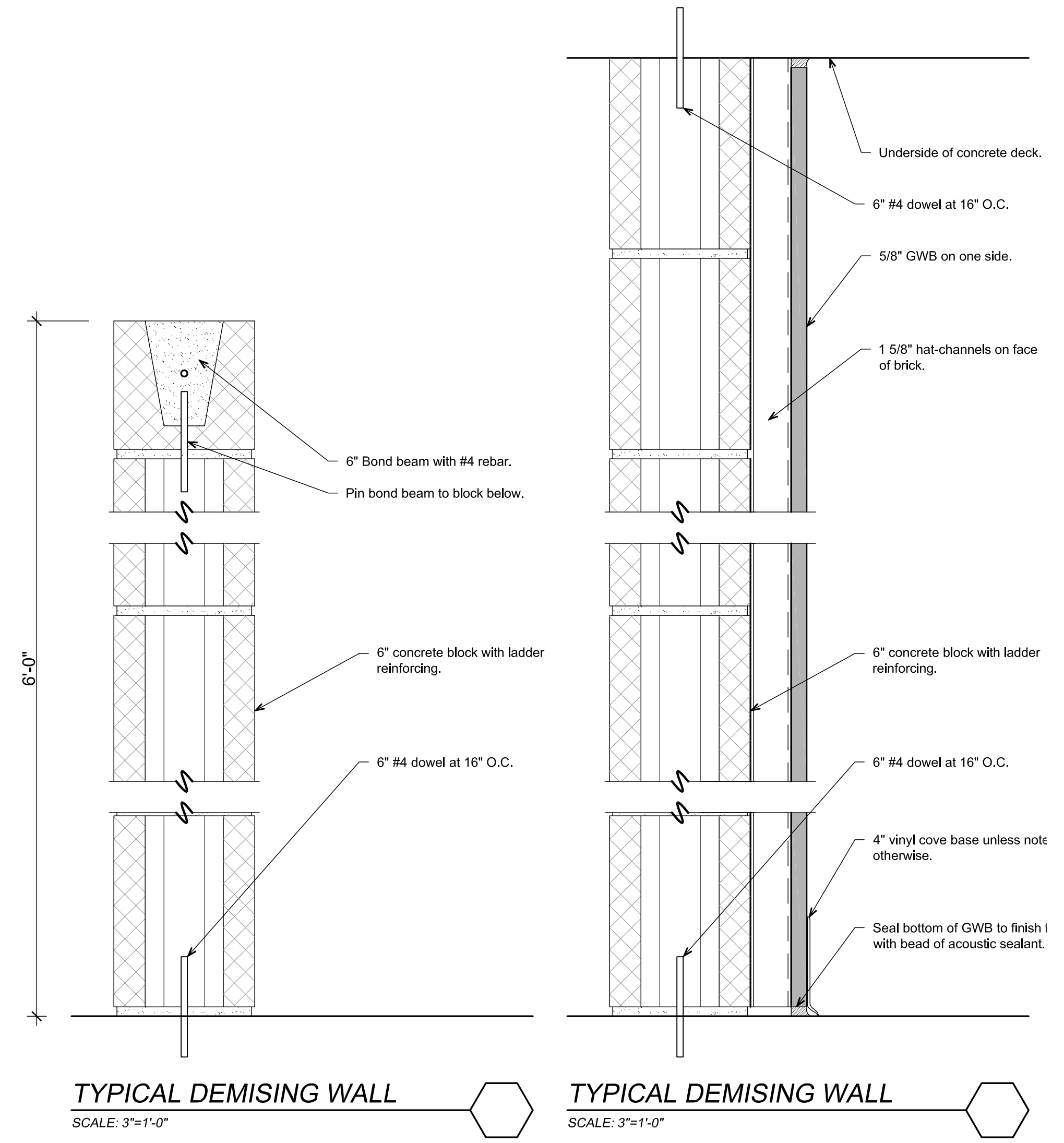
MAIER design group, llc.
architecture & interiors

100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0093 / Fax: 860.293.0094

WALL TYPES AND DETAILS

Project Number: 2018.029 Issue Date: 24 JAN 2020
Scale: As Noted CAD File: 18029_A300.dwg
Drawn By: EAL Checked By: EAL

Revisions:



A300

GENERAL PROVISIONS

A. GENERAL

- 1. REQUIREMENTS SPECIFIED ON COVER SHEET, ALONG WITH ELECTRICAL SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE ELECTRICAL CONTRACT, DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE, AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.
2. THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH KNOWLEDGE.
3. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT, AS PURCHASED, FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.
4. UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACT.
5. THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT OBVIOUSLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST.
6. ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID INTERFERENCE.
7. EXAMINE THE WORK OF OTHER TRADES INsofar AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES.
8. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTEGRAL WITH EQUIPMENT PACKAGE.
9. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE JOB.
B. VISIT TO THE SITE
1. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS.
C. CODE AND PERMITS
1. INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.
2. COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS.
3. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK, REQUIRED BY THE FOREGOING AUTHORITIES. BEFORE FINAL PAYMENT OF THE CONTRACT IS ALLOWED, ALL CERTIFICATES SHALL BE DELIVERED TO THE ARCHITECT IN DUPLICATE.
4. ELECTRICAL MATERIAL AND EQUIPMENT SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH TYPES OF MATERIAL AND EQUIPMENT.
D. SHOP DRAWINGS SUBMITTALS
1. THE ELECTRICAL CONTRACTOR SHALL SUBMIT FIVE (5) SETS OF SHOP DRAWINGS. THE SHOP DRAWINGS OF THE FOLLOWING EQUIPMENT USING THE INDICATED NUMBERING SYSTEM AND TITLES, SHALL BE SUBMITTED THROUGH THE ARCHITECT TO THE ENGINEER AND THEN RESUBMITTED FOR FINAL APPROVAL, IF NECESSARY. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
a. WIRING DEVICES
b. PANELBOARDS AND SAFETY SWITCHES INCLUDING FAULT CURRENT STUDY BASED ON EQUIPMENT BEING SUPPLIED.
2. ALL SUBMITTED SHOP DRAWINGS (MANUFACTURERS "EQUIPMENT DESCRIPTIVE SHEETS OR VENDORS" PREPARED DRAWINGS) SHALL HAVE THE GENERAL CONTRACTOR'S OR SUBCONTRACTOR'S "STAMP OF APPROVAL" INDICATING THAT THE ITEM SUBMITTED IS AS CALLED FOR ON THE PLANS AND SPECIFICATIONS, IS APPROVED BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR, THE DATE OF APPROVAL AND INITIALED BY THE PERSON APPROVING THE SUBMITTAL AND THE NAME OF THE COMPANY SUBMITTING SAID EQUIPMENT FOR APPROVAL.
3. SUBMIT BOUND BROCHURES COMPLETE WITH A TABLE OF CONTENTS. LOOSE OR STAPLED TOGETHER SHEETS ARE NOT ACCEPTABLE. ANY SUBMITTALS NOT IN BROCHURE FORM OR NOT AS SPECIFIED SHALL BE RETURNED AT THE CONTRACTOR'S EXPENSE FOR RESUBMITTAL.
4. ALL DESCRIPTIVE LITERATURE SHALL BE SUBMITTED IN A THREE (3) HOLE BROCHURE WITH A COVER IDENTIFYING THE FOLLOWING:
a. NAME OF THE JOB.
b. LOCATION OF THE JOB, ADDRESS, CITY AND STATE.
c. NAME AND ADDRESS OF THE COMPANY SUBMITTING THE BROCHURES.
d. DATE OF THE SUBMITTAL.
5. EVERY EFFORT SHALL BE MADE, IN CHECKING THE SHOP DRAWINGS, TO DETECT AND CORRECT ALL ERRORS, OMISSIONS AND INACCURACIES. FAILURE TO DO THIS WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY FOR THE PROPER AND COMPLETE INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
E. RECORD DRAWINGS
1. SUBMIT TO THE ARCHITECT ONE SET OF REPRODUCIBLE (MYLARS) ELECTRICAL DRAWINGS SHOWING THE RECORD CONDITIONS.
F. STANDARDS AND SUBSTITUTIONS
1. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD".
2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION, SAMPLES OF PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.
3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.
4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL ALLIED TRADES INVOLVED.
5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.
6. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED, INCLUDING ALL ARCH/ENGINEER FEES ASSOCIATED WITH CHANGE.
G. TESTING AND PLACING IN SERVICE
1. ANY MATERIAL OR EQUIPMENT FAILING A TEST SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
2. TESTS SHALL INCLUDE THE FOLLOWING:
a. MEASURE THE LOAD ON EACH PHASE OF THE MAIN SERVICE AND EACH PHASE OF EVERY FEEDER UNDER FULL LOAD CONDITIONS.
b. MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND FOR EACH PHASE OF EACH SERVICE, OF EACH SEPARATELY DERIVED SYSTEM, AND AT EACH PANELBOARD OR TRANSFORMER).
c. MEASURE THE GROUND RESISTANCE OF THE MAIN SERVICE GROUNDING ELECTRODE AND THE GROUND RESISTANCE OF EACH SEPARATELY DERIVED SYSTEM'S GROUNDING ELECTRODE.
d. MAKE INSULATION RESISTANCE TESTS ON ALL DRY TYPE TRANSFORMERS AND MOTORS.

H. INTERFERENCES

- 1. BEFORE THE INSTALLATION OF ANY ITEM BEGINS, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT IT DOES NOT INTERFERE WITH CLEARANCES FOR THE ERECTION OF FINISH BEAMS, COLUMNS, PILASTERS, WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
2. IT SHALL BE THE DUTY OF THIS CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. HIS DECISION WILL BE FINAL.
I. QUALITY ASSURANCE
ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS, EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OF CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.

BASIC ELECTRICAL MATERIALS AND METHODS

A. NAMEPLATES

- 1. GENERAL: FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.
2. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH. FASTEN THE NAMEPLATES WITH SCREWS AND AN ADHESIVE TYPE FASTENER.
B. MOUNTING ACCESSORIES
1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.
2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY BRINKLEY, STEEL CITY OR RACO WILL BE ACCEPTABLE.
3. ALL SURFACE-MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PLYWOOD BACKBOARD. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" HIGH CONCRETE HOUSEKEEPING PAD.

C. EXECUTION

- 1. THE ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC.
2. CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.
3. EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS INDICATED ON THE CONTRACT DRAWINGS.
4. ALL CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THEIR REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE-DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS.
5. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK. COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
D. MATERIALS AND WORKMANSHIP
1. ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE MANNER, BY MECHANICS SKILLED IN THE SEVERAL TRADES NECESSARY.
2. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR INDICATED ON THE DRAWINGS TO THE CONTRARY.
3. DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE THE AREA OF OPERATION BROOM CLEAN.
4. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OR ETL LABEL.
5. THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE.
E. SCOPE OF WORK
1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:
a. COMPLETE POWER SYSTEM INCLUDING ALL PANELS AND FEEDERS.
b. COMPLETE BRANCH CIRCUIT WIRING SYSTEM.
c. COMPLETE POWER WIRING FOR ALL KITCHEN EQUIPMENT.
d. TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED FOR CONSTRUCTION.
e. TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.
f. WIRING DEVICES.
g. GROUNDING OF THE ELECTRICAL SYSTEM.

GROUNDING AND BONDING

- A. GROUND ALL EQUIPMENT PER N.E.C.
B. ALL CONDUITS SHALL CONTAIN A CODE-SIZED GROUND WIRE SIZED PER N.E.C. IN ADDITION TO THE CONDUCTORS SHOWN ON THE PLANS. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY.
C. AFTER INSTALLING GROUNDING SYSTEM BUT BEFORE PERMANENT ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS.

WIRE AND CABLE

- A. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS: 208/120V SYSTEM=PHASE A BLACK; PHASE B RED; PHASE C BLUE; NEUTRAL WHITE; GROUND GREEN.
1. #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
2. COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE THE EQUAL OF 3M PRODUCTS SCOTCH #35.
3. CONDUCTORS SHALL BE SOFT ANNEALED COPPER INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE. ALUMINUM CONDUCTORS ARE NOT ALLOWED ON THIS PROJECT.
B. INSULATION TYPE SHALL BE TYPE THIN FOR WIRE SIZES #8 AWG AND LARGER AND THIN OR THIN FOR #10AWG AND SMALLER. THIN SHALL NOT BE USED IN WET OR DAMP LOCATIONS.
C. FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS.
D. PROVIDE #12 CONDUCTORS, UNLESS OTHERWISE INDICATED.
1. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS I AND #16 FOR NEC CLASS II.
E. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.
F. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.
G. INSTALL WIRING IN CONDUIT. CONCEALED WIRING IN WALLS OR ABOVE CEILINGS, OR EXPOSED IN UNFINISHED AREAS (WHERE NOT SUBJECT TO PHYSICAL DAMAGE) MAY BE RUN IN MC OR AC CABLE.
H. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS, "SCOTCHLOK" BY 3M OR B-CAP BY BUCHANAN.
I. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES AS MANUFACTURED BY BURNDY OR T&B.
J. INSULATE SPLICING CONNECTORS TO AT LEAST 200% OF THE WIRE INSULATION. USE PRE-STRETCHED TUBING CONNECTION INSULATORS, 3M PST FOR #2 AND LARGER CONDUCTORS.
K. PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.
1. CLEANOUT EACH CONDUIT SYSTEM BEFORE PULLING WIRE.
L. FORM AND TIE ALL WIRING IN PANELBOARDS.
M. THERE SHALL BE NO WIRE/UNT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS.
N. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 3%.
O. WIRE SIZES SHALL BE BASED ON THE 60 DEGREES C. AMPACITIES FOR WIRE SIZES NO. 14-1 AWG., AND 75 DEGREES C. AMPACITIES FOR WIRE SIZES #1/0 A.W.G. AND LARGER.
P. CIRCUITS MAY BE MULTI-PLEXED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCE SHALL MORE THAN (8) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.

RACEWAYS AND BOXES

A. RACEWAYS

- 1. ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN CORROSION RESISTANT, RIGID, THREADED, METAL CONDUIT OR ELECTRICAL METALLIC TUBING (E.M.T.) UNLESS OTHERWISE SPECIFICALLY STATED HEREIN.
a. CONDUIT IN EXTERIOR WALLS, BELOW FLOOR SLAB, OR UNDERGROUND SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE.
b. CARLON PVC TYPE 40 HEAVY WALL CONDUIT WITH GROUND WIRE MAY BE USED BELOW FLOOR SLAB OR UNDERGROUND IN LIEU OF RIGID, THREADED, GALVANIZED CONDUIT. PVC 40 CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL.
c. CONDUIT RUN EXPOSED TO THE WEATHER SHALL BE HEAVY WALL, METAL THREADED TYPE.
d. PROVIDE BRANCH CIRCUIT CONDUCTORS THAT ARE TYPE THIN OR THIN AS REQUIRED. MC CABLE CAN BE USED FOR LIGHT FIXTURE TO LIGHT FIXTURE.
2. CONDUIT SIZE SHALL BE 3/4" MINIMUM.
3. CONDUIT SHALL BE SECURELY FASTENED IN PLACE.
4. ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOOR AND CEILINGS WHEREVER POSSIBLE. EXPOSED CONDUIT IN FINISHED AREAS WILL NOT BE PERMITTED. EXPOSED CONDUIT WILL BE PERMITTED IN UNFINISHED AREAS WITH THE SPECIFIC APPROVAL OF THE ARCHITECT.
5. USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.
6. USE WATERTIGHT JOINTS WITH BURIED AND CONCRETE ENCASED CONDUIT. ALL BURIED CONDUITS OUTSIDE OF BUILDINGS SHALL HAVE A MINIMUM OF 24" OF COVER. METAL CONDUITS BURIED IN EARTH SHALL BE PAINTED (TWO COATS) WITH HEAVY ASPHALTUM PAINT.
7. SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE NATIONAL ELECTRICAL CODE (NEC).
8. INSTALL EXPOSED RUNS OF CONDUIT AND CONDUIT ABOVE LAY-IN CEILINGS PARALLEL OR PERPENDICULAR TO THE WALLS, STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1" OF ALL CHANGES IN DIRECTION.
9. IF A CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.
10. INSTALL EMPTY CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.
11. PROVIDE PITCHPOCKETS WHERE CONDUITS PENETRATE THE ROOF.
12. THREAD LUBRICATION/SEALANT IS REQUIRED ON OUTDOOR AND UNDERGROUND THREADED METAL JOINTS.
13. INSTALL FIRE SEAL FITTINGS WHERE CONDUITS PENETRATE CONCRETE FLOORS OR MASONRY WALLS REQUIRED TO BE FIRE RATED.
14. HORIZONTAL PORTION OF CONDUIT EXPOSED ON THE ROOF AND FEEDING EQUIPMENT SHALL NOT BE MORE THAN 5'-0" UNLESS THE WRITTEN APPROVAL FROM ARCHITECT OR ENGINEER IS OBTAINED.
B. PULL AND JUNCTION BOXES
1. INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES IN DIRECTION, AT JUNCTION POINTS, AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH NEC UNLESS LARGER BOXES ARE INDICATED.
2. PROVIDE STEEL BOXES AND REMOVABLE COVERS OF CODE GAGE, HOT ROLLED SHEET STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, FOR ABOVE GROUND WORK. FURNISH WEATHERPROOF BOXES WHEN INSTALLED ABOVE GROUND OUTSIDE.
3. PROVIDE CAST IRON BOXES, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE WHERE SHOWN ON THE DRAWINGS. FURNISH REMOVABLE COVERS WITH GASKETS AND STAINLESS STEEL, BRASS OR BRONZE SCREWS.
4. PROVIDE CONCRETE BOXES FOR UNDERGROUND WORK UNLESS OTHERWISE INDICATED ON THE DRAWINGS. FURNISH STEEL FRAMES AND COVERS WITH THE COVER ATTACHED TO THE FRAME WITH HEXAGON HEAD, BRASS OR BRONZE CAP SCREWS, 3/8" DIAMETER. PROVIDE A RUBBER GASKET FOR SEALING BETWEEN THE COVER AND THE FRAME. PAINT THE COVER WITH TWO COATS OF HEAVY ASPHALTUM.
C. OUTLET BOXES
1. USE SHEET STEEL BOXES, ZINC COATED OR CADMIUM PLATED, FOR CONCEALED INTERIOR WORK.
2. USE CAST BOXES, ZINC-CADMIUM FINISH MALLEABLE IRON, FOR EXPOSED INTERIOR WORK, AND FOR EXPOSED OR CONCEALED WORK IN WET, DAMP OR EXTERIOR LOCATIONS.
3. WALL BOX SIZES (MINIMUM) SHALL BE 4" SQUARE x 2-1/2" DEEP WHERE WALL CONSTRUCTION PERMITS. WHERE WALL CONSTRUCTION DICTATES, THE WIDTH MAY BE REDUCED TO 2-1/8" OR 1-1/2" UNDER SPECIAL CONDITIONS.
4. FIXTURE OUTLETS IN CEILINGS (MINIMUM) SHALL BE 4" OCTAGONAL x 1-1/2" DEEP (4-11/16" OCTAGONAL x 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES).
5. GANG BOXES SHALL BE ONE PIECE (MINIMUM), 2-1/8" DEEP.
6. FLUSH MOUNT BOXES IN ALL FINISHED WALLS. INSTALL THE PLASTER RINGS IN DRYWALL OR PLASTERED WALLS AND RAISED COVERS AS REQUIRED IN WALLS WITH OTHER FINISHES SO THAT THE COVER PLATES FIT TIGHTLY AGAINST BOXES OR RINGS, 3/16" MAXIMUM GAPS ARE ALLOWED FOR NONCOMBUSTIBLE WALLS.
7. ADJUST LOCATION OF OUTLETS IN MASONRY OR TILE CONSTRUCTION TO OCCUR IN THE NEAREST JOINT TO THE HEIGHT SPECIFIED. HEIGHTS SHALL MEET A.D.A. REQUIREMENTS.
8. SUPPORT ALL BOXES TO MAINTAIN PROPER ALIGNMENT AND RIGIDITY.
9. CLEAN BOXES OF ALL FOREIGN MATTER PRIOR TO THE INSTALLATION OR WIRING OF DEVICES.
11. MOUNTING HEIGHTS ON THE DRAWINGS ARE TO THE CENTERLINE OF THE BOX UNLESS OTHERWISE NOTED.

WIRING DEVICES

- A. WIRING DEVICE COLOR SHALL BE WHITE, UNLESS OTHERWISE INDICATED.
B. GENERAL SWITCHES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY PASS & SEYMOUR.
C. PROVIDE NEMA CONFIGURATION 5-20R DUPLEX 125 VOLT GROUNDING TYPE RECEPTACLES RATED FOR 20 AMPERES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
D. RECEPTACLES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY PASS & SEYMOUR. E. RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS.
F. PROVIDE OTHER RECEPTACLES OF A QUALITY, MATERIAL AND WORKMANSHIP EQUAL TO THAT SPECIFIED FOR DUPLEX CONVENIENCE RECEPTACLES.
G. PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE NOTED:
1. FINISHED AREAS: STAINLESS STEEL.
2. UNFINISHED AREAS: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL, AS APPROPRIATE FOR THE TYPE OF BOX.
3. EXTERIOR AREAS: COPPER FREE ALUMINUM WITH GRAY, POWDER EPOXY FINISH, GASKET, WEATHERPROOF.
4. WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED UNDER A COMMON COVERPLATE.
I. LOCATE THE SWITCHES APPROXIMATELY 4'-0" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS OTHERWISE INDICATED. THE LONG DIMENSION OF THE SWITCHES SHALL BE VERTICAL.
J. LOCATE RECEPTACLES APPROXIMATELY 1'-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS NOTED OTHERWISE. THE LONG DIMENSION OF RECEPTACLES SHALL BE VERTICAL.

SAFETY SWITCHES

- A. SAFETY SWITCHES SHALL BE THE ENCLOSED HEAVY-DUTY TYPE (TYPE HD) WITH QUICK-MAKE, QUICK-BREAK MECHANISM AND EXTERNAL PAD LOCKABLE OPERATING HANDLE.
B. SAFETY SWITCHES SHALL BE RATED FOR 240 OR 600 VOLTS AS APPLICABLE. THEY SHALL BE HORSEPOWER RATED WHEN USED IN MOTOR CIRCUITS.
C. SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE, 2, 3, OR 4 POLE AS INDICATED ON THE DRAWINGS.
D. SAFETY SWITCHES SHALL BE SINGLE THROW UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
E. ENCLOSURES SHALL BE NEMA 1 INDOORS AND NEMA 3R OUTDOORS UNLESS OTHERWISE INDICATED ON DRAWINGS.
F. MANUFACTURER SHALL BE SQUARE D, SIEMENS, OR CUTLER-HAMMER. ALL SAFETY SWITCHES SHALL BE BY ONE MANUFACTURER.
G. MOUNT THE SAFETY SWITCHES SECURELY BETWEEN 3' & 6' LEVELS ABOVE THE FLOOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
H. SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD, WHERE LOCATED INDOORS.

DISTRIBUTION AND PANELBOARDS

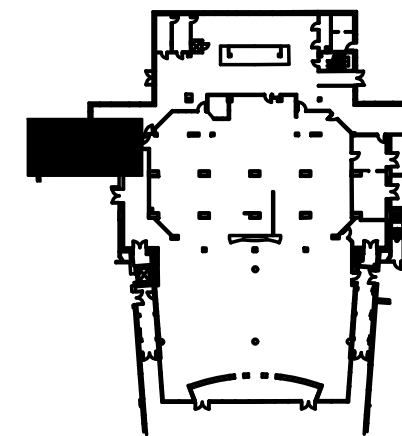
A. PANELBOARDS

- 1. PANELBOARDS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT AT THE TERMINALS.
2. PANELBOARDS SHALL BE LABELED WITH PHENOLIC NAMEPLATES INSCRIBED AS INDICATED ON THE DRAWINGS. PROVIDE LABELS AFFIXED TO PANELBOARDS AS REQUIRED BY NFPA 70E.
3. PANELBOARDS SHALL BE ENCLOSED DEAD FRONT SAFETY TYPE WITH FEATURES AND RATINGS AS SCHEDULED ON THE DRAWINGS.
4. MOLDED CASE CIRCUIT BREAKERS SHALL BE AS SCHEDULED ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION.
5. ALL BUS BARS SHALL BE RECTANGULAR TIN PLATED ALUMINUM.
6. SPACE, WHERE SHOWN IN PANEL SCHEDULES, DESIGNATES SPACE FOR FUTURE PROTECTIVE DEVICES AND SHALL INCLUDE BUS AND SUPPORT.
7. INSTALL CABINETS SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 6'-6" ABOVE THE FINISHED FLOOR.
8. ENTRIES ON DIRECTORY CARDS SHALL BE TYPED, COMPLETE AND ACCURATE.
9. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS.
10. ELECTRICAL CONTRACTOR SHALL ARRANGE CIRCUITS AS NEAR AS POSSIBLE TO CIRCUIT NUMBERS ON THE DRAWINGS. AT COMPLETION OF JOB, ELECTRICAL CONTRACTOR SHALL TAKE CURRENT READING CHECKS OF RESPECTIVE PHASES. A MINIMUM OF CIRCUIT CONNECTIONS SHALL BE REARRANGED TO BALANCE, AS CLOSELY AS POSSIBLE, THE LOAD IN THE PANEL.
11. ALL BREAKERS SHALL BE BOLT-ON TYPE.
12. MANUFACTURE SHALL BE SQUARE D AS THE PREFERRED SWITCHGEAR.

ELECTRICAL LEGEND table with columns SYMBOL and DESCRIPTION. Includes symbols for SINGLE POLE TOGGLE SWITCH, JUNCTION BOX, MOTOR, THERMAL OVERLOAD SWITCH, DISCONNECT SWITCH, ELECTRIC PANEL, AMPERE, ABOVE FINISHED FLOOR, CONDUIT, CIRCUIT BREAKER, CIRCUIT, ELECTRICAL METALLIC TUBING, JUNCTION BOX, POLE, UNLESS NOTED OTHERWISE, BRANCH CIRCUIT WIRING, BRANCH CIRCUIT FEEDER, UNSWITCHED BRANCH CIRCUIT WIRING, ELECTRICAL GROUND.

NOTES:

- 1. RECEPTACLES LOCATED WITHIN 6' OF A WATER SOURCE, LOCATED OUTSIDE AND WHERE REQUIRED BY CODE SHALL BE PROVIDED WITH A GFI TYPE RECEPTACLE WHETHER INDICATED OR NOT. ADDITIONALLY, THOSE EXTERIOR RECEPTACLES SHALL BE PROVIDED WITH COVERS RATED "WEATHER PROOF WHILE IN USE".
2. ALL BRANCH CIRCUITS TO BE PROVIDED WITH INDIVIDUAL DEDICATED NEUTRAL, MULTI-CIRCUIT FEEDERS UTILIZING COMMON NEUTRALS WILL NOT BE ACCEPTED.
3. ALL SYMBOLS MAY NOT BE USED.

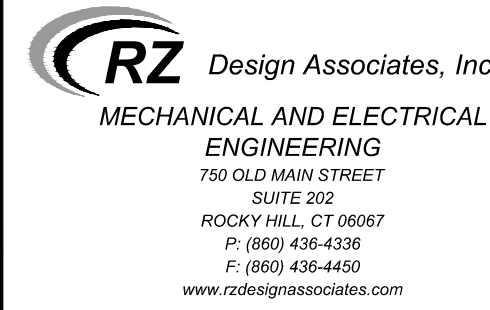


North Dining Hall

KEYPLAN

Colburn & Guyette

100 Ledgewood Place
Rockland, MA



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University of Connecticut
McConaughy Dining Hall Dish Room
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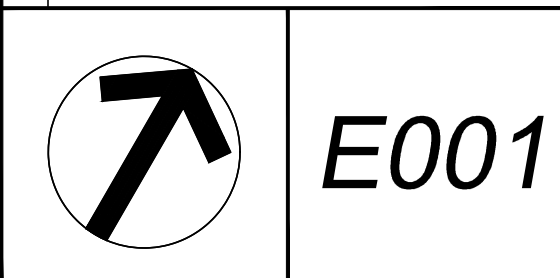


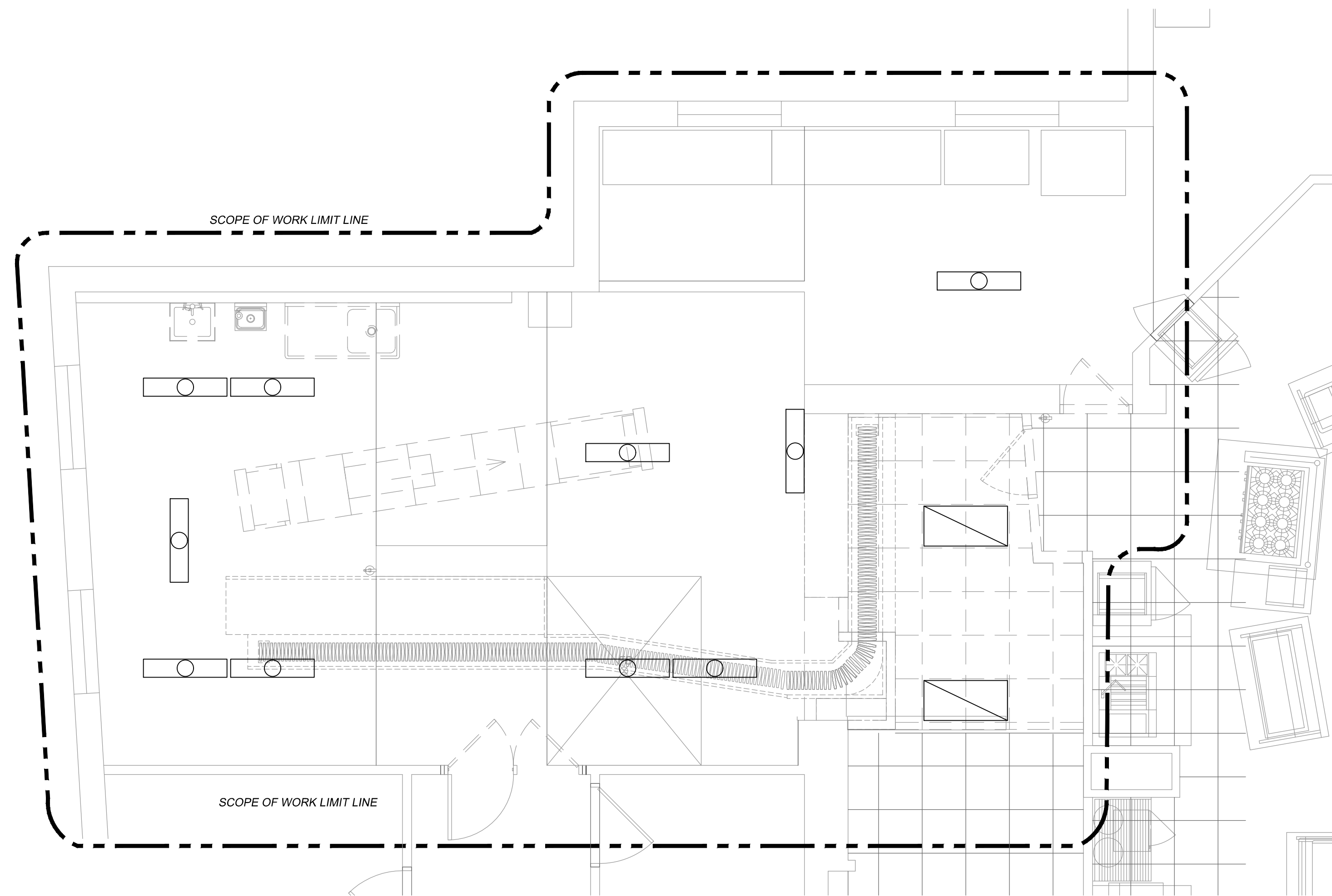
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Tel: 860.293.0093 / Fax: 860.293.0094

ELECTRICAL LEGEND AND SPECIFICATIONS

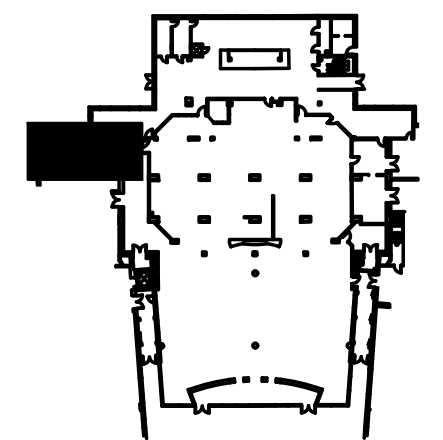
Project Number: 2018.029
Issue Date: 24 JAN 2020
Scale: NONE
CAD File: E001.dwg
Drawn By: JJZ
Checked By: BJZ

Revisions table with columns for revision number, description, and date.





- LIGHTING DEMOLITION NOTES:**
1. DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES SHOWN. MAINTAIN CIRCUITING FOR RECONNECTION TO NEW LIGHT FIXTURES IN SAME LOCATION.
 2. DISCONNECT AND REMOVE ASSOCIATED LIGHTING CONTROLS. REFER TO DRAWING E100 FOR NEW CONTROL SCHEME AND DEVICES.



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KEYPLAN

Colburn & Guyette
100 Ledgewood Place
Rockland, MA

RZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
Storrs, CT 06269

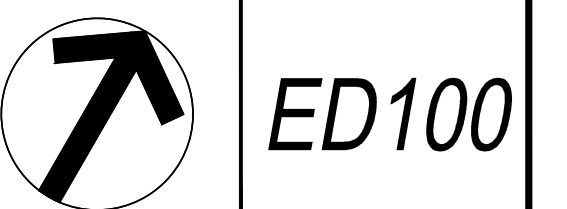
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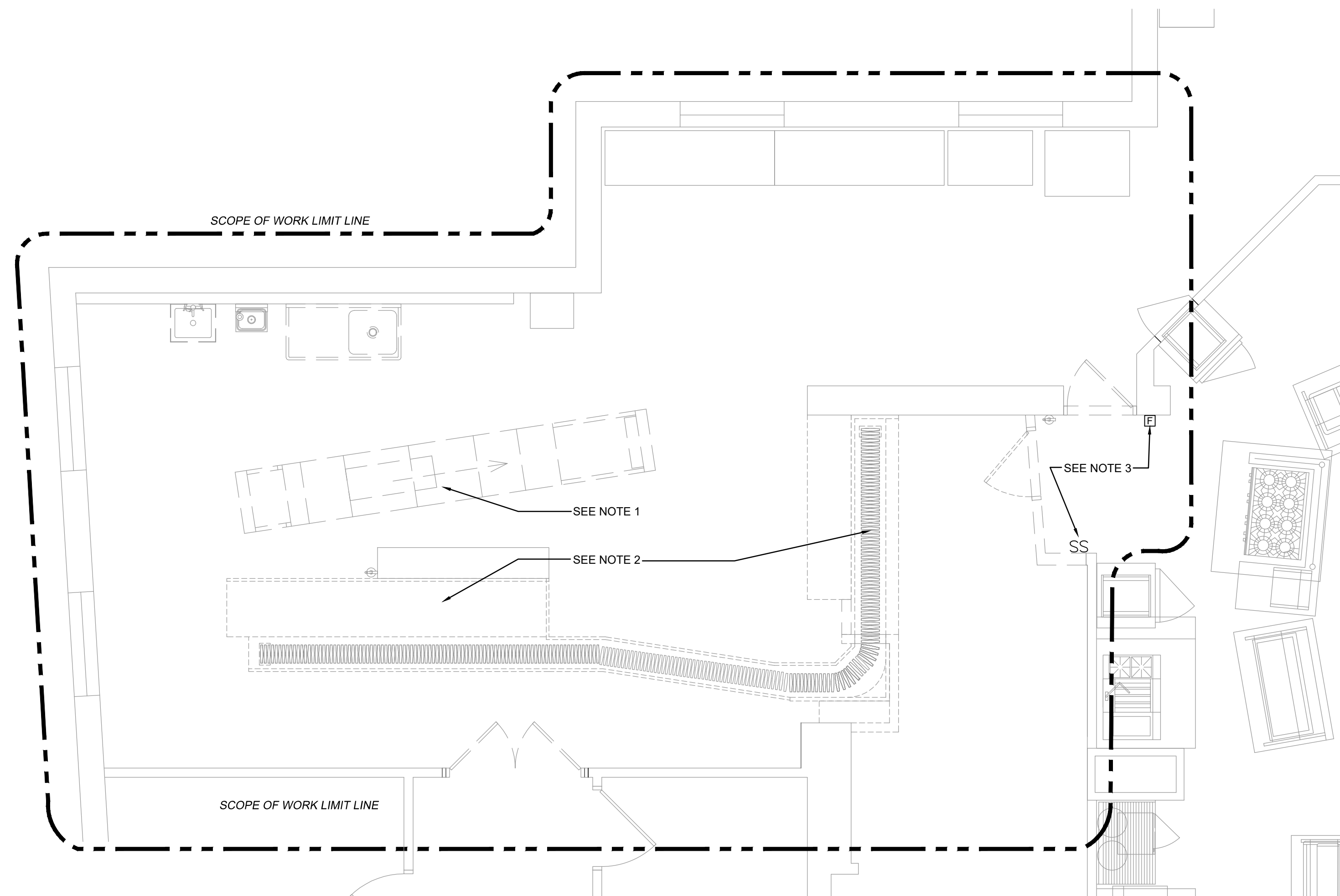
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**ELECTRICAL
LIGHTING DEMO PLAN**

Project Number: 2018.029	Issue Date: 24 JAN 2020
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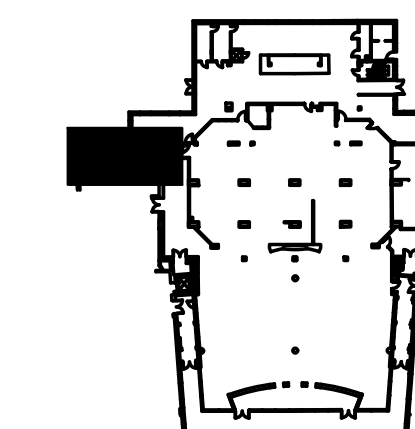
Revisions:





POWER DEMOLITION NOTES:

1. DISCONNECT EXISTING DISHMACHINE AND MAKE SAFE FOR REMOVAL BY OTHERS. MAINTAIN EXISTING CIRCUITING FOR EXTENSION AND RECONNECTION TO NEW EQUIPMENT.
2. DISCONNECT EXISTING DISH TABLE/TRAY CONVEYOR AND MAKE SAFE FOR REMOVAL BY OTHERS. MAINTAIN EXISTING CIRCUITING FOR EXTENSION AND RECONNECTION TO NEW EQUIPMENT.
3. EXISTING PULL STATION AND EQUIPMENT SWITCHES TO BE RELOCATED. EXTEND EXISTING WIRING FULL SIZE TO NEW LOCATION. REFER TO E200 FOR NEW LOCATION.
4. ALL OTHER DEVICES TO REMAIN AS IS.



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KEYPLAN

Colburn & Guyette
100 Ledgewood Place
Rockland, MA

RZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
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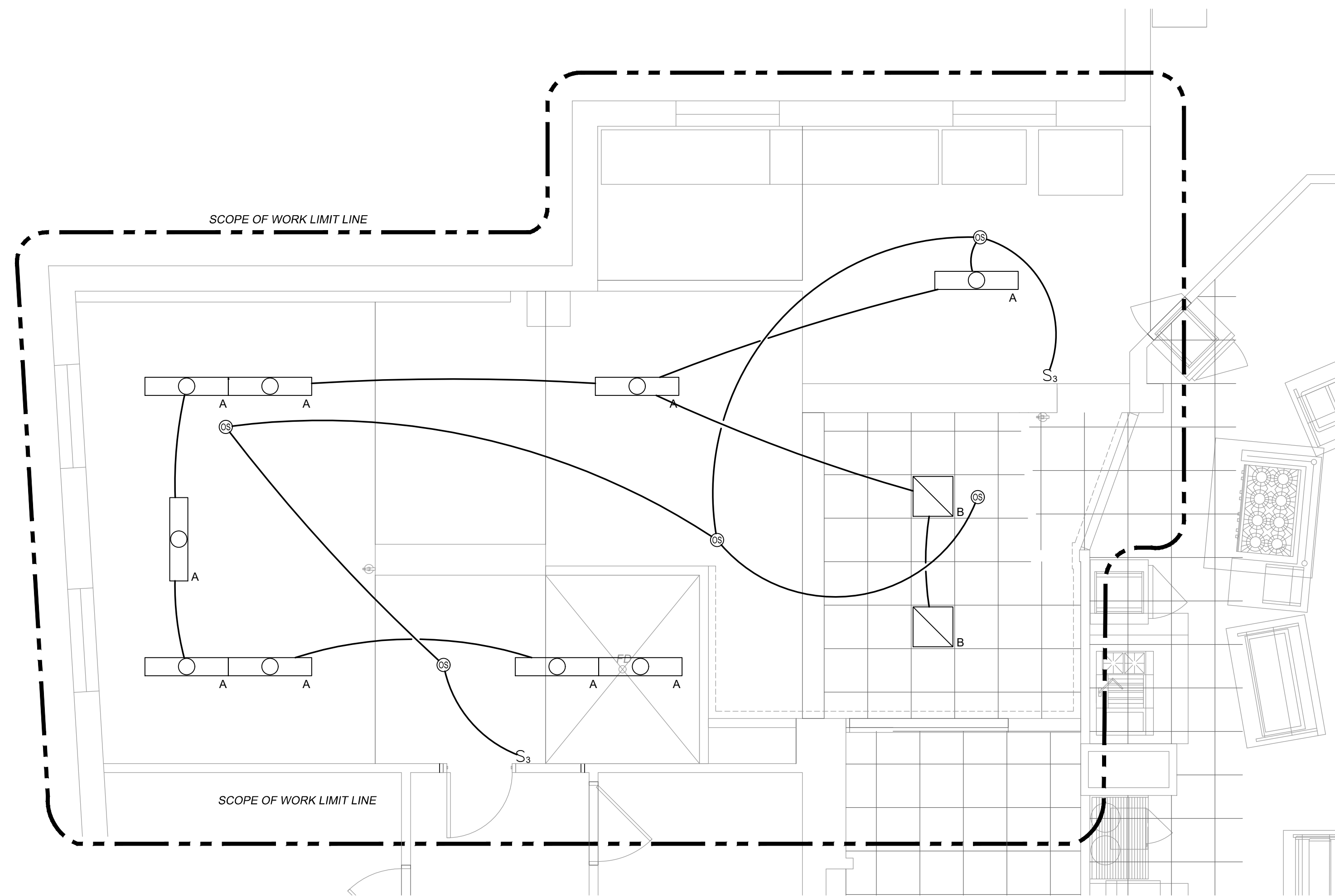
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Tel: 860.293.0093 / Fax: 860.293.0094

**ELECTRICAL
POWER DEMO PLAN**

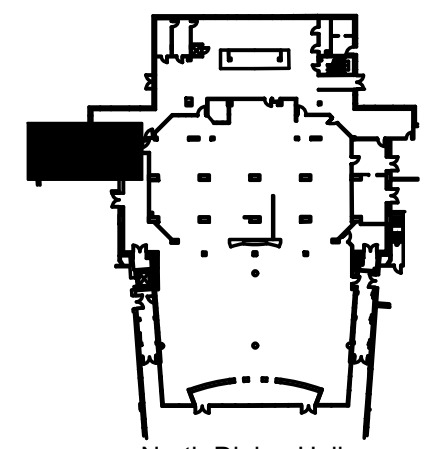
Project Number: 2018.029	Issue Date: 24 JAN 2020
Scale: 1/4"=1'-0"	CAD File: ED200.dwg
Drawn By: JJZ	Checked By: BJZ

Revisions:

ED200



- LIGHTING NOTES:
1. TYPE A LIGHT FIXTURE SHALL BE METALUX CAT # 4APVTLTD-54L840.
 2. TYPE B LIGHT FIXTURE SHALL BE METALUX CAT # 22FP4240C.
 3. PROVIDE NEW CONTROLS AS SHOWN.



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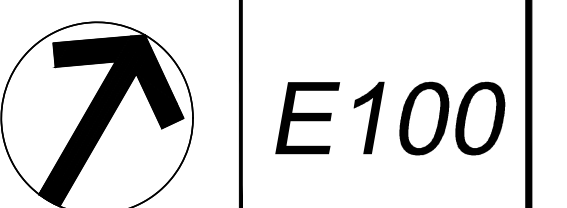
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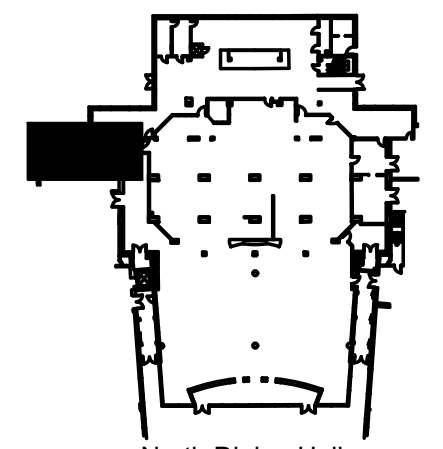
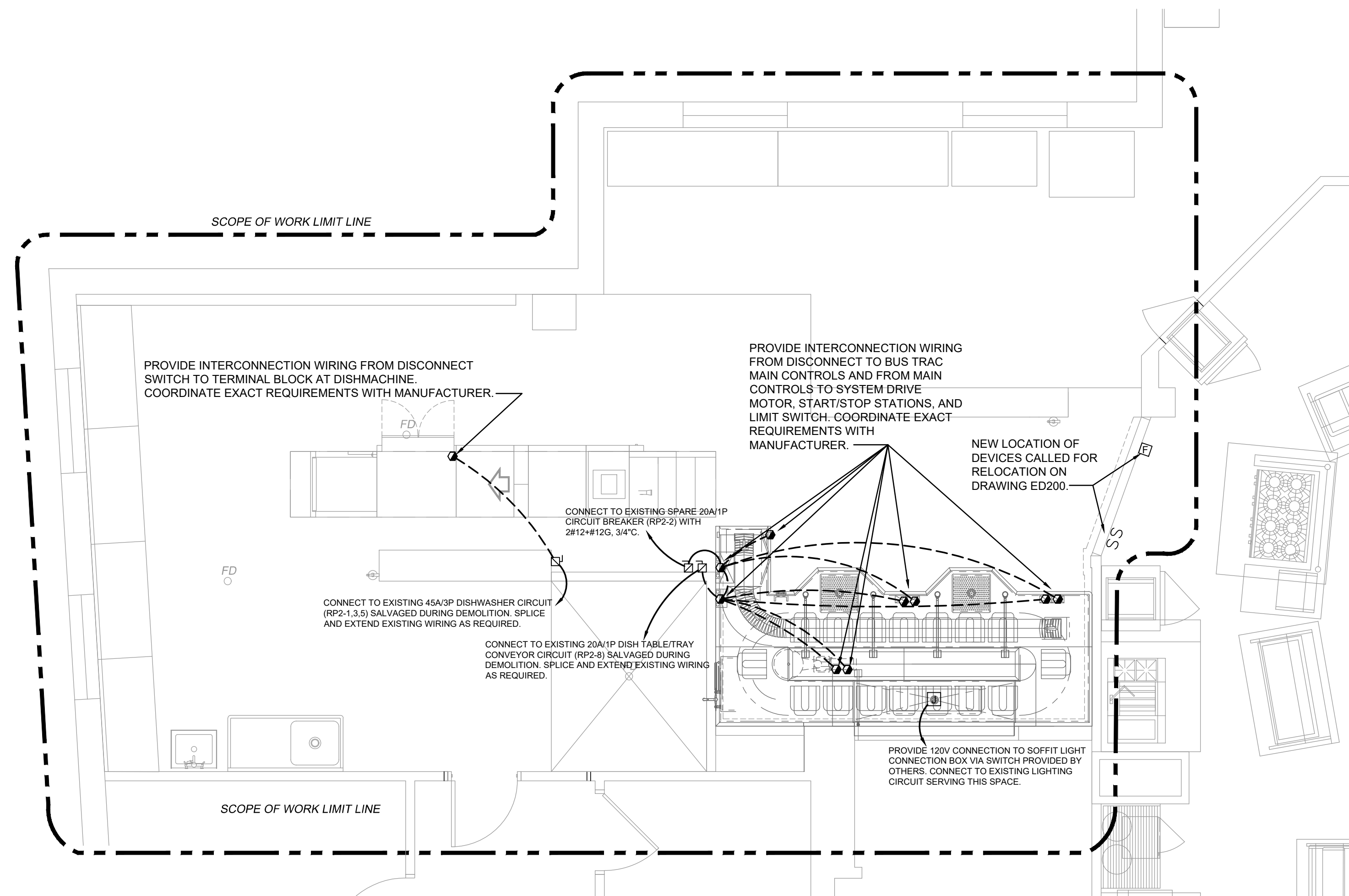
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Tel: 860.293.0093 / Fax: 860.293.0094

**ELECTRICAL
LIGHTING PLAN**

Project Number: 2018.029	Issue Date: 24 JAN 2020
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Revisions:





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100 Ledgewood Place
Rockland, MA

RZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
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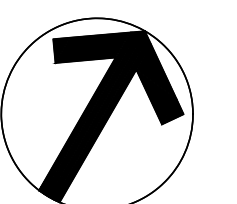
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**ELECTRICAL
POWER PLAN**

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Drawn By: JJZ	Checked By: BJZ

Revisions:



E200

HVAC DEMOLITION GENERAL NOTES

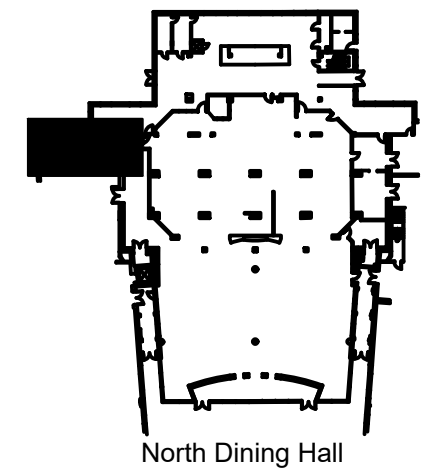
- BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
- THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS, CONNECTIONS AND DISRUPTIONS EFFECTING OTHER TRADES (MECHANICAL AND ELECTRICAL). INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE NECESSARY.
- DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.
- REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID DOCUMENTS.
- THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTOR'S OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY, REMOVE OR DEMOLISH ANY EQUIPMENT, APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.
- THE LOCATION OF EXISTING HVAC SYSTEM SHOWN ON FLOOR PLANS, IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION. EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. TO BE REMOVED AND ADJUST AS NECESSARY.
- ALL EQUIPMENT, AND ASSOCIATED PIPING INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS, UP TO NEAREST EXISTING ACTIVE MAIN OR BRANCH LINE AND CAPPED AS CLOSE TO THE ACTIVE LINE AS POSSIBLE. NO EQUIPMENT, PIPING, OR CONDUIT SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY NOTED.
- ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY PIPING OR CONDUIT WHICH MUST REMAIN ACTIVE, HE SHALL IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
- ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR CLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.
- PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS; THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.
- THE CONTRACTOR SHALL OBTAIN EXISTING MECHANICAL DRAWINGS FROM THE OWNER IF AVAILABLE TO HELP DETERMINE FULL SCOPE OF WORK.

GENERAL PROCEDURES NOTES

- PROJECT INCLUDES ACCESS TO AND COORDINATION WITH POSSIBLE OCCUPIED SPACES BELOW THE WORK AREA AND WITHIN OTHER PARTS OF THE BUILDING.
- NOTICE OF WORK TO BE PERFORMED OUTSIDE THE WORK AREA, OR AFFECTING OTHER TENANTS IS TO BE GIVEN AT LEAST 48 HOURS PRIOR TO SCHEDULED WORK TO ALL PARTIES.
- THE CONTRACTOR IS TO INCLUDE IN HIS BID, OR MAKE PROVISIONS FOR, THE FOLLOWING SPECIAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
 - PERFORMANCE OF WORK AFTER HOURS, OR PREMIUM TIME, SUCH AS CORE DRILLING, HAMMER DRILLING, ETC.
 - "HOT WORKS PERMIT" FOR SOLDERING, BRAZING OR TORCHING. CONTACT BBS ENGINEERING OFFICE AT LEAST 24 HOURS IN ADVANCE OF SCHEDULED WORK.
 - DISTURBANCE AND CLEARING OF WORK SPACE IN ADJACENT TENANT SPACES. COORDINATE WITH TENANTS.
 - PROTECTION OF THE ADJACENT OCCUPIED AREAS AND ITEMS IN THESE AREAS FROM DAMAGE.
 - RESTORATION OF ANY DISTURBED OCCUPIED SPACES TO CONDITION ACCEPTABLE TO THE TENANT AND BUILDING OWNER PRIOR TO THE START OF NEXT DAY'S NORMAL BUSINESS HOURS.
 - CONTRACTOR TO SUBMIT A PROPOSED SCHEDULE TO OWNER AND LANDLORD INDICATING ANTICIPATED AFTER HOURS WORK AND ACCESS TO ADJACENT TENANT SPACES FOR REVIEW PRIOR TO COMMENCING WORK.

HVAC GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, REGULATORY AGENCIES HAVING JURISDICTION, AND SPECIFICATIONS. SPECIFICATIONS MAY EXCEED REQUIREMENTS OF THE CODE. IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
- THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED HVAC SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
- THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING THEIR BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS, AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TO DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL TRADES BEFORE COMMENCING WORK.
- EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF VARIOUS EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT. MOUNTING HEIGHTS SHALL BE APPROVED BY THE ARCHITECT.
- WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- COORDINATE PIPING AND CONDUITS ENTERING OR LEAVING THE BUILDING WITH THE SITE CONTRACTOR(S) BEFORE INSTALLATION. COORDINATE INVERTS WITH THE STRUCTURE AND SYSTEM REQUIREMENTS, PRIOR TO INSTALLATION.
- PROVIDE THE REQUIRED/SPECIFIED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING INTERIOR, AND EXTERIOR WALLS AND FLOOR SLABS.
- INSTALL FLOOR-MOUNTED EQUIPMENT ON A CONCRETE HOUSEKEEPING PAD.
- THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL PIPING AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES.
- DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.
- INSTALL SMOKE DETECTORS IN BOTH SUPPLY & RETURN AIR DUCTS FOR AIR HANDLING EQUIPMENT 2,000 CFM AND GREATER.
- PROVIDE SMOKE DAMPERS AND DUCT SMOKE DETECTORS IN BOTH SUPPLY & RETURN AIR DUCTS (AT EACH FLOOR) FOR AIR HANDLING EQUIPMENT 15,000 CFM AND GREATER.
- PROVIDE SMOKE DAMPERS AND SMOKE DETECTORS AT DUCT PENETRATIONS OF SMOKE-BARRIERS, AND AT ELEVATOR SHAFT VENTS PER CODE REQUIREMENTS.
- PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE-RATED CONSTRUCTION, INCLUDING WALLS, SHAFTS AND FLOOR PENETRATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- PROVIDE AN AUTOMATIC TEMPERATURE CONTROL SYSTEM COMPLETE IN ALL REGARDS. ALL ZONES, VAV'S AND SYSTEM SHALL BE THERMOSTATICALLY CONTROLLED. REVIEW THE PLANS AND SPECIFICATIONS OF ALL MEP TRADES FOR A COMPLETE SCOPE OF THE WORK.
- TEST AND BALANCE BOTH AIR AND HYDRONIC SYSTEMS. PROVIDE BALANCING REPORT TO ARCHITECT AND ENGINEER.
- PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE. TO MAXIMIZE HEAD ROOM, INSTALL PIPING TIGHT TO BOTTOM OF BEAMS WHEN RUNNING PERPENDICULAR TO BEAM; INSTALL PIPING TIGHT TO FLOOR SLAB WHEN RUNNING PARALLEL TO BEAM; PROVIDE ALL NECESSARY FITTINGS AND TRANSITIONS.
- PROVIDE THROTTLING VALVES AND SHUT-OFF VALVES AS INDICATED IN SPECIFICATIONS IN ADDITION TO THOSE INDICATED ON THE DOCUMENTS.
- INSTALL ALL EQUIPMENT VALVES AS REQUIRED BY MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS AND AS DETAILED.
- PROVIDE AIR VENTS AT ALL HIGH POINTS AND DRAINS AT ALL LOW POINTS.
- PROVIDE PRESSURE RELIEF DOORS FOR AIR SYSTEMS, PER THE SPECIFICATIONS.
- PROVIDE MOTORIZED DAMPERS AT ALL PERMANENT OPENINGS (EXHAUST, SUPPLY, RELIEF, O.A. INTAKES, MAKE-UP AIR, SMOKE VENTS, ETC.) EXCEPT DRYER, KITCHEN, AND FUME EXHAUST AND PROVIDE A MEANS TO CONTROL THE DAMPER OPERATION.
- ALL SUPPLY RECTANGULAR 90° ELBOWS SHALL HAVE TURNING VANES.
- PROVIDE DUCT TAKE-OFF TYPES AND VOLUME DAMPERS PER THE SPECIFICATIONS AND DUCT TAKE-OFF DETAILS ON DRAWINGS. TAKE-OFFS SHOWN ON FLOOR PLANS DO NOT REPRESENT THE SPECIFIC TYPE OF TAKE-OFF REQUIRED; CONSULT THE DETAILS AND SPECIFICATIONS.
- PROVIDE VOLUME DAMPERS ON ALL SUPPLY, EXHAUST, AND RETURN BRANCH DUCTS.
- COORDINATE AND VERIFY LOCATIONS OF ALL ITEMS REQUIRING ACCESS WITH ARCHITECT IN FIELD., INCLUDING VALVES, VOLUME DAMPERS, FIRE DAMPERS, ETC.
- ALL EQUIPMENT LOCATED ON THE ROOF THAT REQUIRES SERVICING SHALL BE LOCATED A MINIMUM 10'-0" FROM EDGE OF THE ROOF.
- ALL EXPOSED DUCTWORK SHALL BE FLAT, OVAL, OR ROUND. COORDINATE WITH ARCHITECT'S CEILING PLANS AND IDENTIFY ON DUCTWORK SHOP DRAWINGS.
- PROVIDE DUCT TRANSITIONS AT RTU/AHU CONNECTIONS, ADJUST STEEL FRAMING AND SUPPORTS AFTER FINAL AIR HANDLING UNIT APPROVAL.
- IN TIGHT AREAS ALL DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE, BETWEEN STEEL & TRUSSES. BRUNCH DUCTWORK SHALL RUN THRU JOIST OPENINGS.
- ALL THERMOSTATS LOCATED ON OUTSIDE WALL SHALL HAVE INSULATED PAD BEHIND.
- ALL MOTORIZED DAMPERS SHALL BE WIRED BY ATC CONTRACTOR, COORDINATE VOLTAGE REQUIREMENTS WITH EQUIPMENT.
- ALL TOILETS & BATHROOMS SHALL HAVE 3/4" UNDERCUT DOORS.
- ALL LOUVERS ARE SELECTED AND SCHEDULED BY ARCHITECT. LOUVER TAGS ARE SHOWN FOR COORDINATION ONLY.
- SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.
- ALL DUCTWORK AND PIPING CROSSING SEISMIC JOINTS SHALL ACCOMMODATE DIFFERENTIAL MOTION. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LOCATIONS.
- PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH THE CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.



North Dining Hall
KEYPLAN

Colburn & Guyette

100 Ledgewood Place
Rockland, MA



Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
Storrs, CT 06269

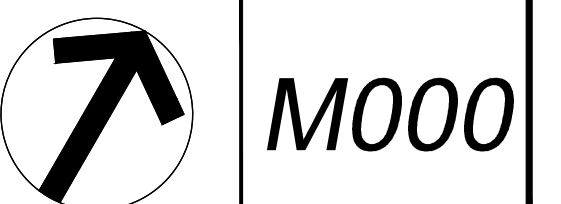


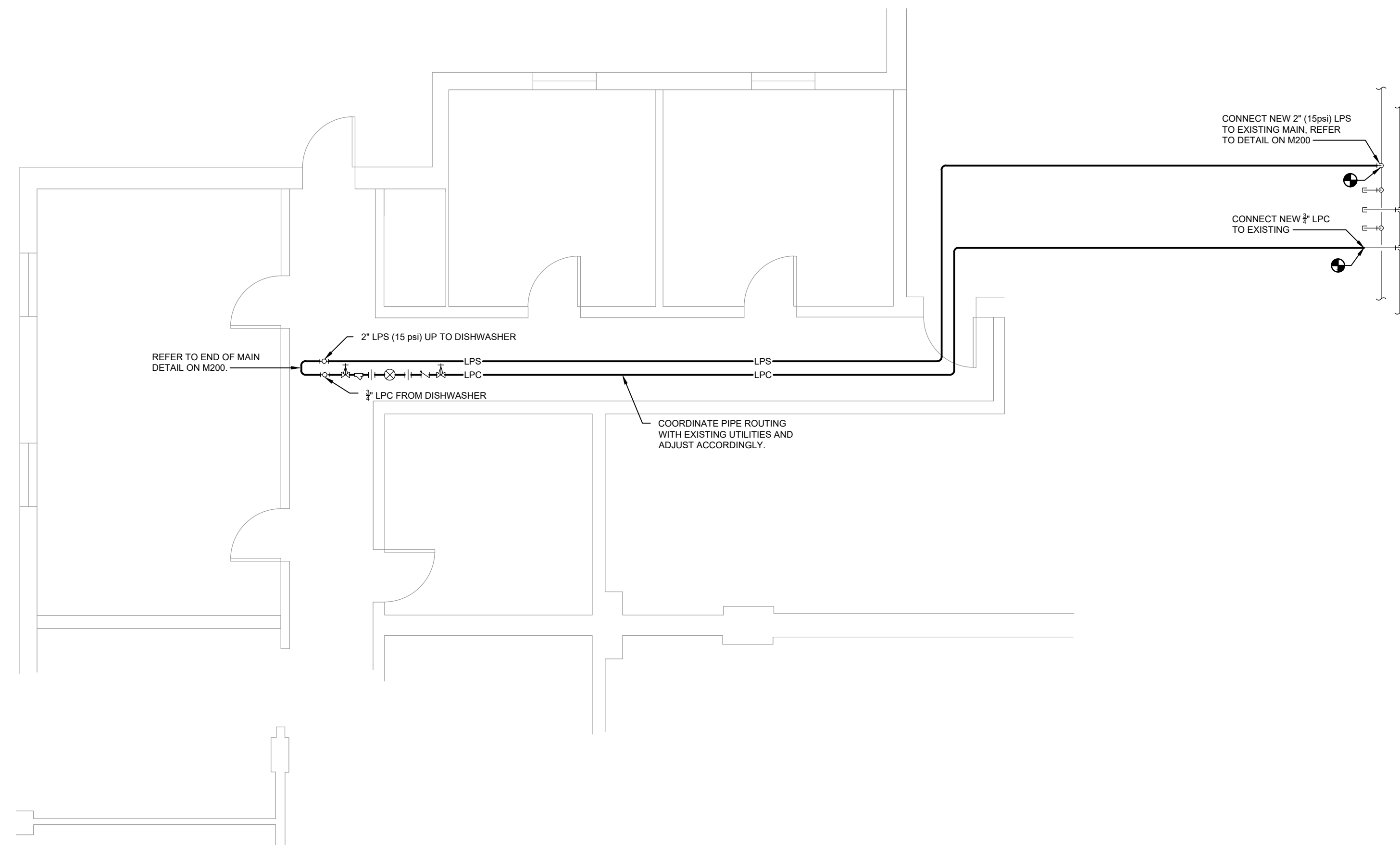
100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0093 / Fax: 860.293.0094

MECHANICAL GENERAL NOTES

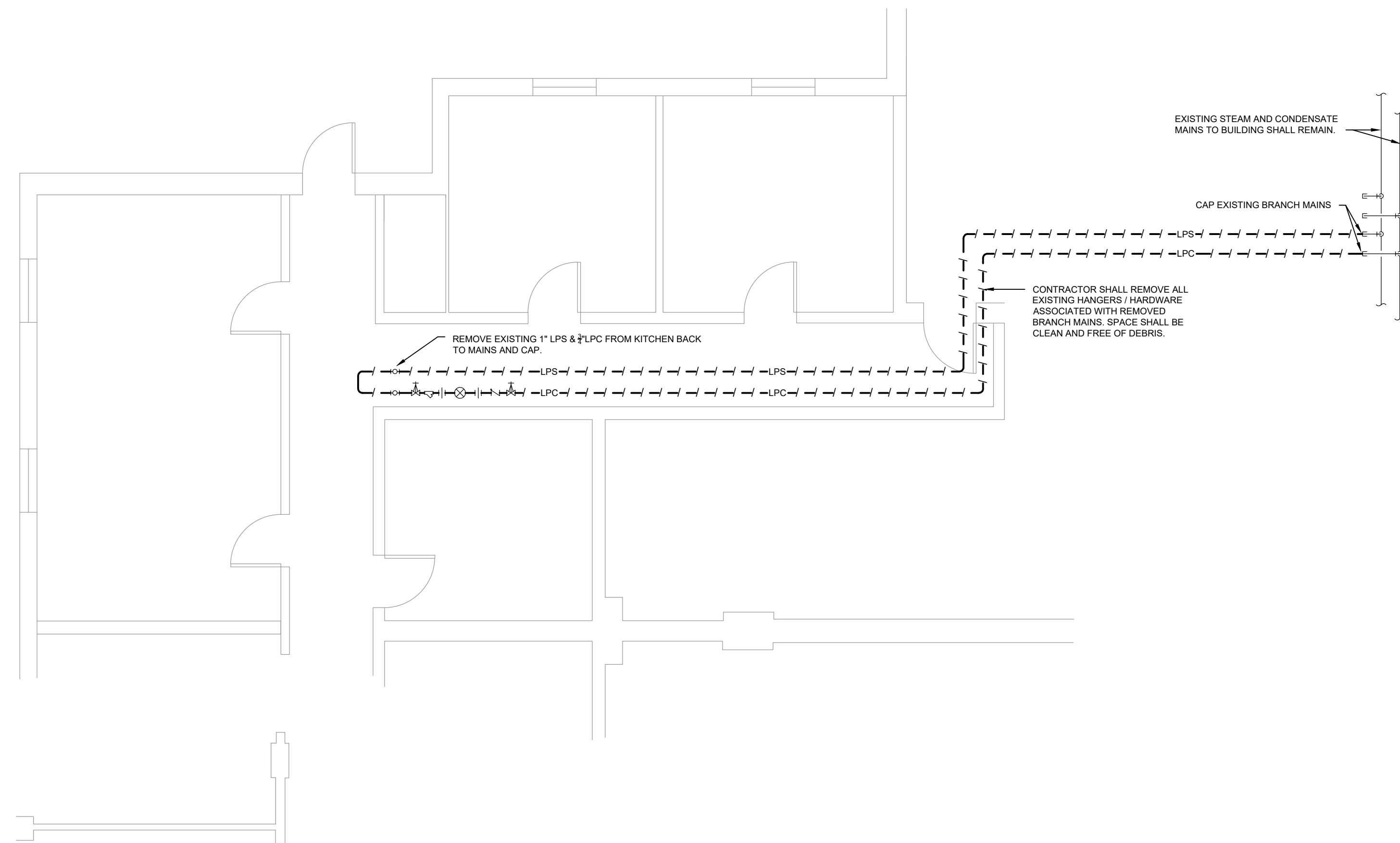
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Scale: AS NOTED	CAD File: M000.dwg
Drawn By: RJ	Checked By: RJ

Revisions:

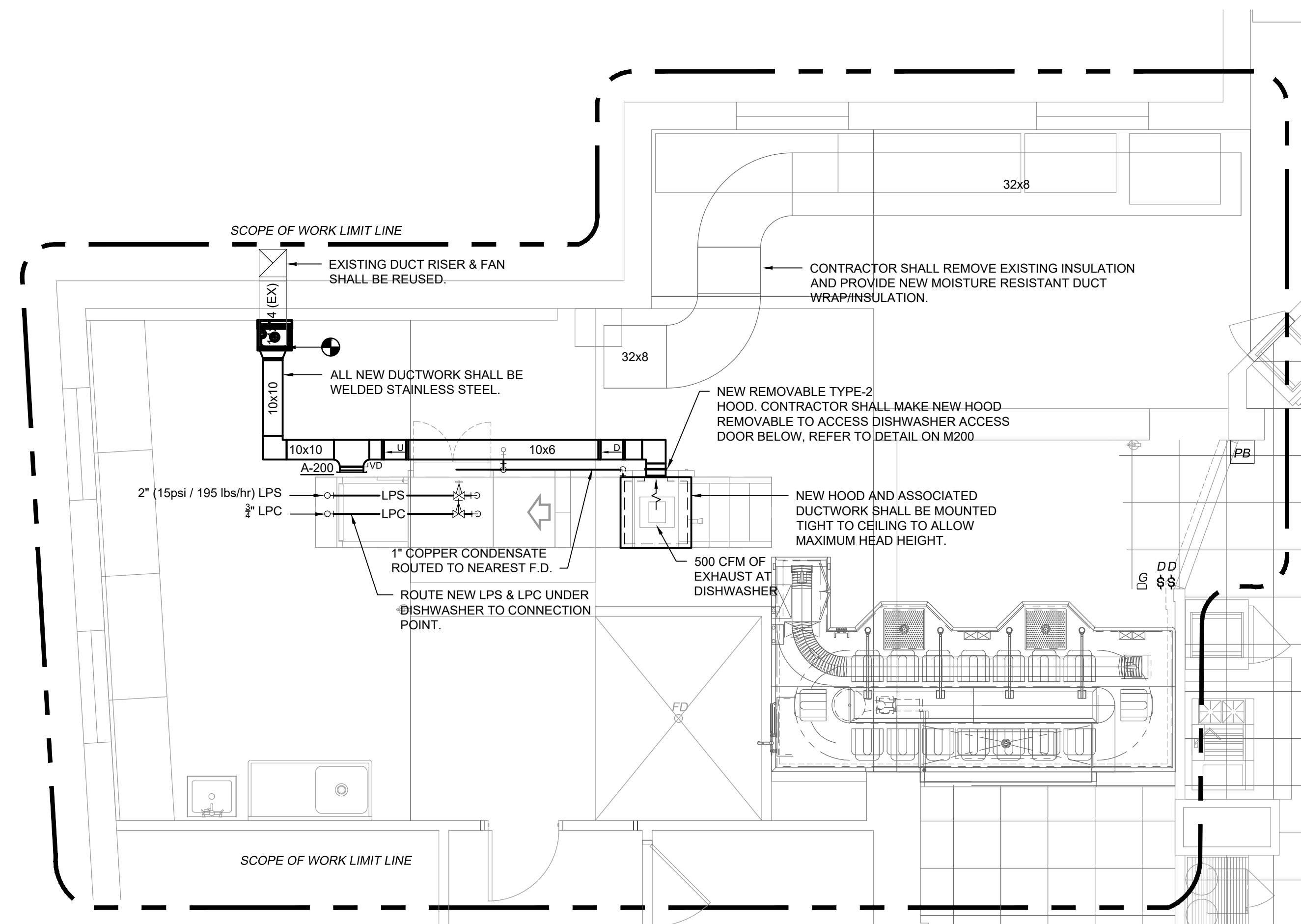




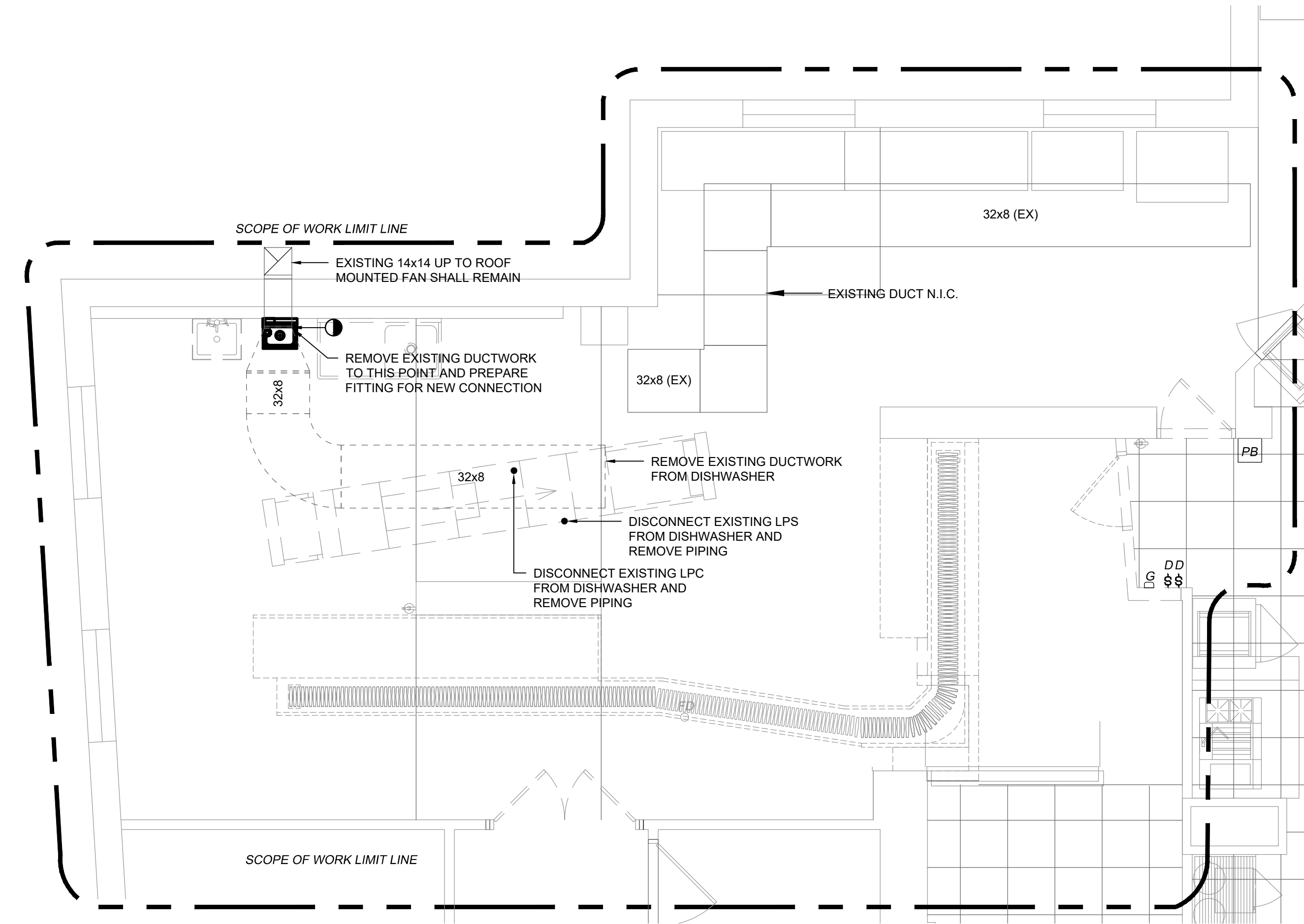
3 BASEMENT LEVEL NEW WORK PLAN
 SCALE: 1/4"=1'-0"



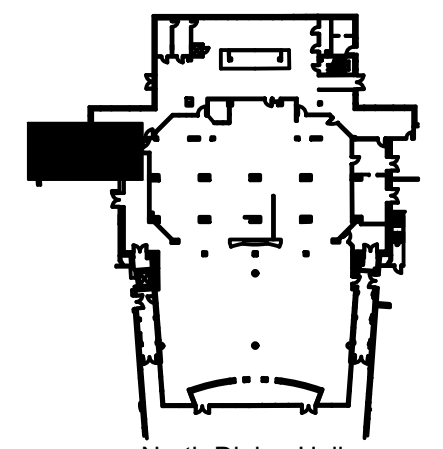
1 BASEMENT LEVEL DEMOLITION PLAN
 SCALE: 1/4"=1'-0"



2 MECHANICAL NEW WORK PLAN
 SCALE: 1/4"=1'-0"



1 MECHANICAL DEMOLITION PLAN
 SCALE: 1/4"=1'-0"



North Dining Hall
 KEYPLAN

Colburn & Guyette
 100 Ledgewood Place
 Rockland, MA

RZ Design Associates, Inc.
 MECHANICAL AND ELECTRICAL
 ENGINEERING
 750 OLD MAIN STREET
 SUITE 202
 ROCKY HILL, CT 06867
 P: (860) 436-4336
 F: (860) 436-4450
 www.rzdesignassociates.com

Dish Room Renovation
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 McConaughy Dining Hall Dish Room
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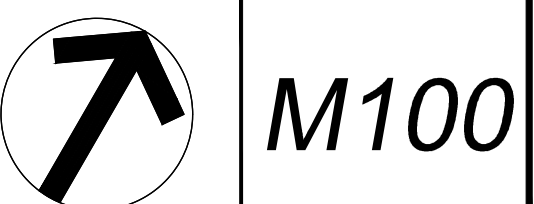
MAIER design group, llc.
 architecture & interiors

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 Tel: 860.293.0093 / Fax: 860.293.0094

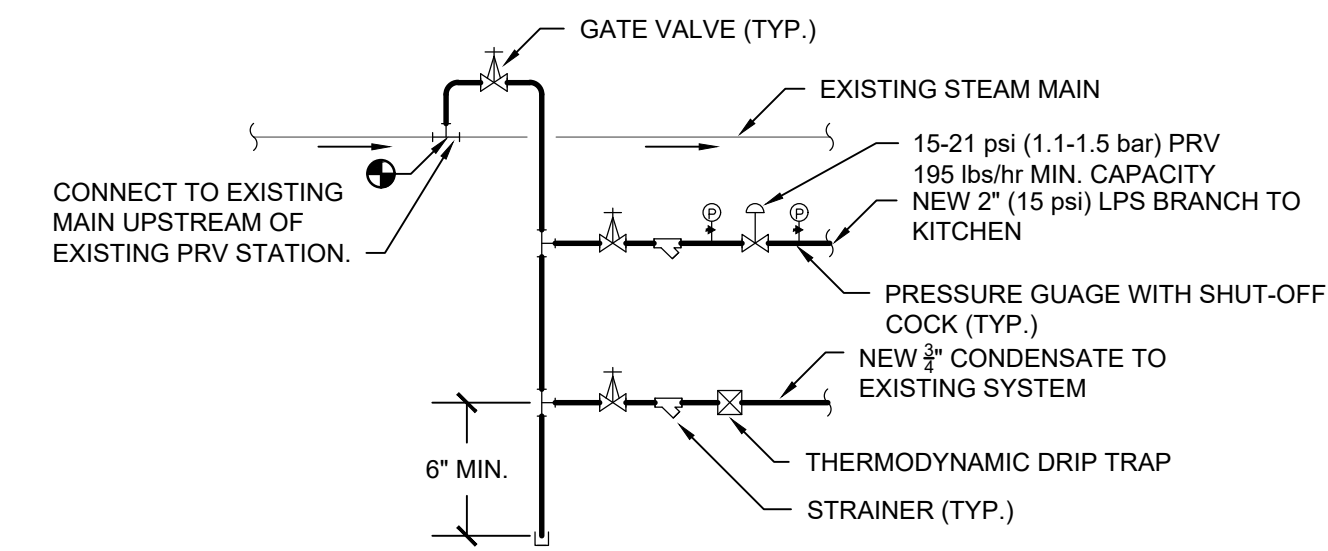
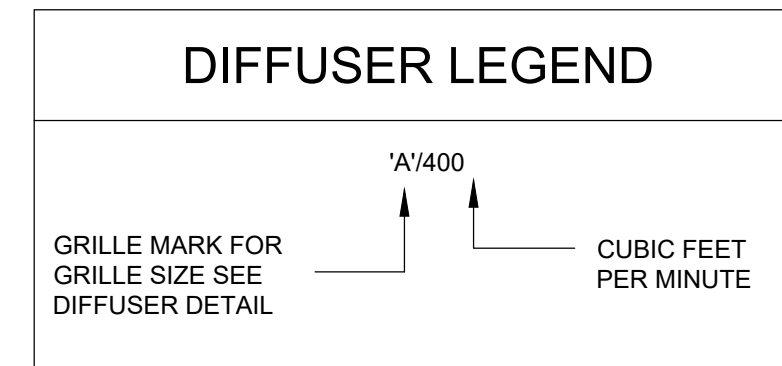
MECHANICAL DEMO & NEW WORK PLAN

Project Number: 2018.029 Issue Date: 24 JAN 2020
 Scale: 1/4"=1'-0" CAD File: M100.dwg
 Drawn By: RJ Checked By: RJ

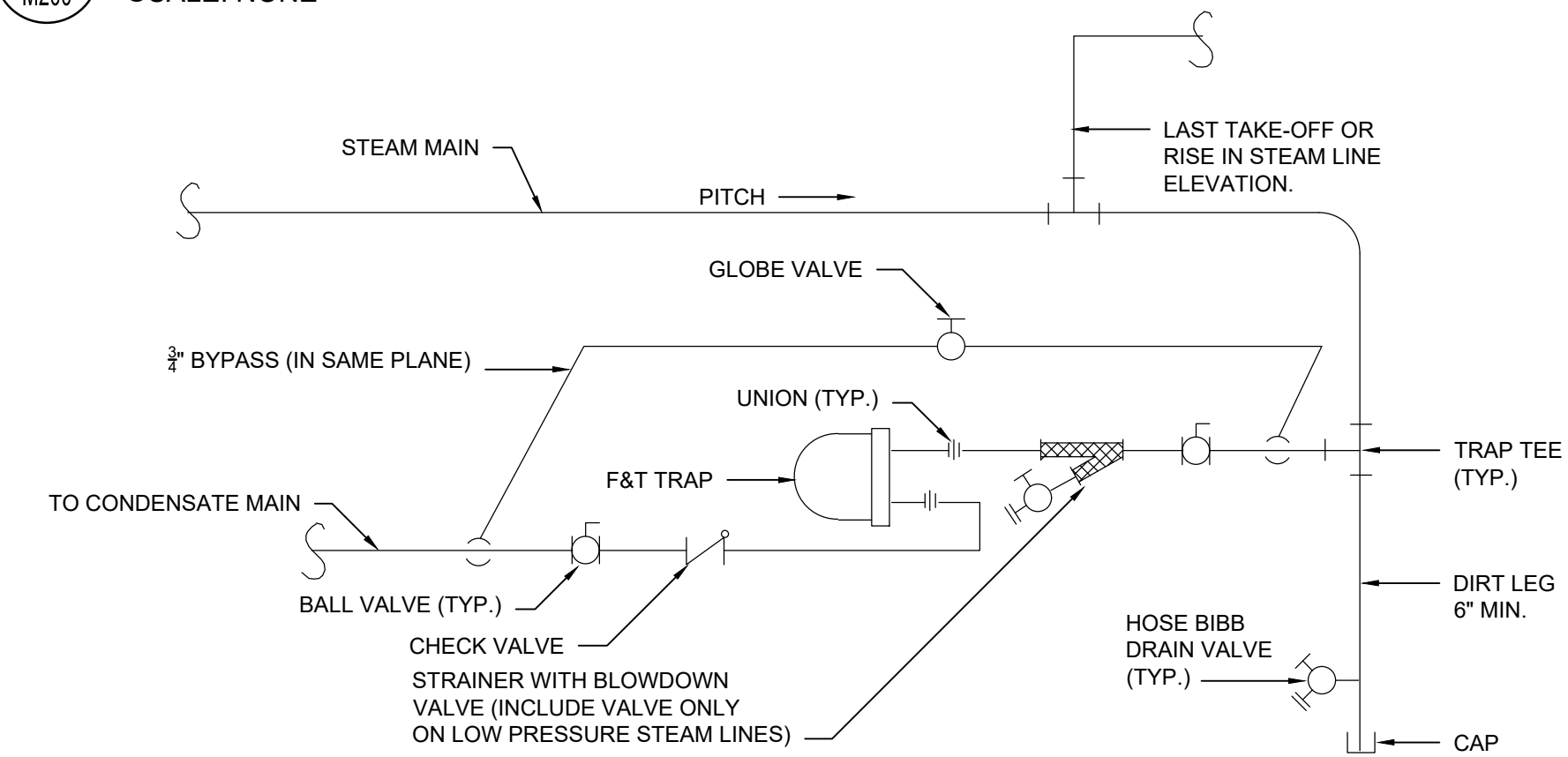
Revisions:



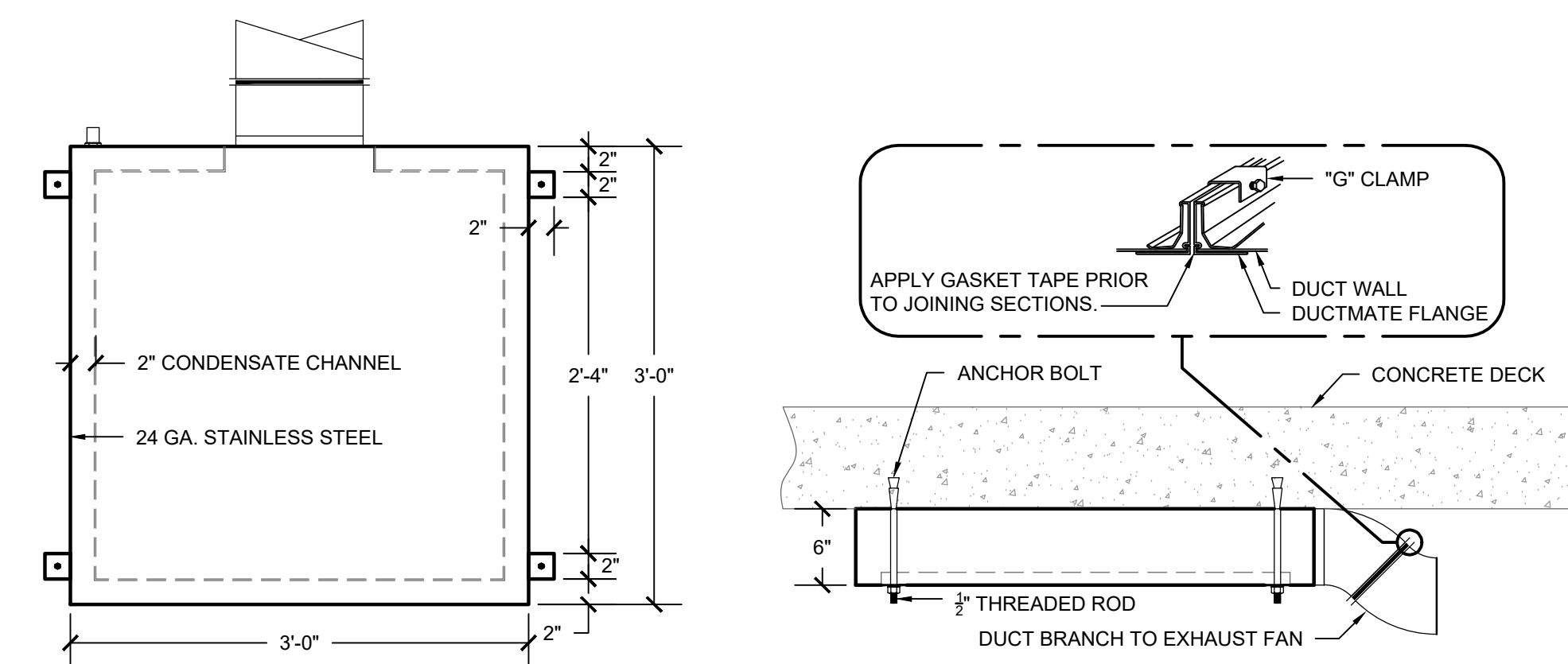
AIR DEVICE SCHEDULE									
MARK	DUTY	TYPE	FACE SIZE	NECK SIZE	CFM	MAX T.P. (IN WG)	MFG.	MODEL	FINISH
A	EXHAUST	DUCT	10"x6"	10"x6"	200	0.10	KRUEGER	9S80HF	STAINLESS STEEL



3 NEW STEAM BRANCH CONNECTION DETAIL
SCALE: NONE



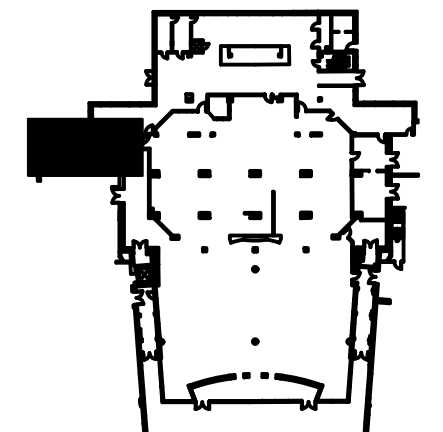
2 END OF MAIN DRIP DETAIL
SCALE: NONE



NOTE:

- HOOD SHALL BE CONSTRUCTED SO IT MAY BE REMOVED FOR MAINTENANCE OF THE DISHWASHER.
- COORDINATE FINAL MOUNTING WITH DISHWASHER MANUFACTURER AND OWNER.
- MOUNT HOOD TIGHT TO DECK FOR MAXIMUM HEAD HEIGHT.
- ALL SEAMS SHALL BE WELDED FOR A MOISTURE RESISTANT SEAL.
- ALL HARDWARE SHALL BE STAINLESS STEEL.

1 DISHWASHER HOOD DETAIL
SCALE: 1"=1'-0"



North Dining Hall
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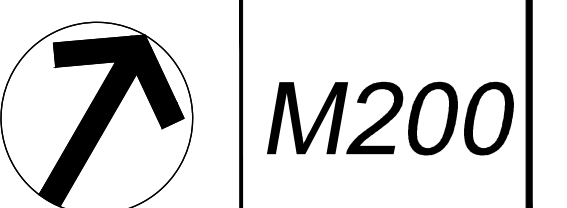
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**MECHANICAL
DETAILS / SCHEDULE**

Project Number: 2018.029 Issue Date: 24 JAN 2020
Scale: AS NOTED CAD File: M200.dwg
Drawn By: RJ Checked By: RJ

Revisions



GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.
2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.
3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.
4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.
6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS.

CODES AND STANDARDS:
IBC 2015 INTERNATIONAL BUILDING CODE / CONNECTICUT BUILDING CODE 2016 AND ALL SUPPLEMENTS
IMC 2015 INTERNATIONAL MECHANICAL CODE
IMP 2015 INTERNATIONAL PLUMBING CODE
IECC 2015 INTERNATIONAL ENERGY CONSERVATION CODE
NEC 2017 NATIONAL ELECTRICAL CODE / NFPA 70
NFPA NFPA-101 FIRE SAFETY CODE
ICC/ANSI ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES A117.1-2003

7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.
9. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER AND CONTROL WIRING REQUIRED FOR ALL EQUIPMENT OPERATION NOT SPECIFICALLY PROVIDED BY OTHERS BUT REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THIS CONTRACTOR SHALL PROVIDE MOTOR STARTERS FOR INSTALLATION BY OTHERS. COORDINATE REQUIREMENTS.

ALTERATION WORK AND DEMOLITION

1. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES ETC., TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC... SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNERS APPROVAL.
2. UPON COMPLETION OF REMOVALS AND MODIFICATIONS, ALL DUCTWORK AND PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPPED AND/OR BYPASSED SUCH THAT UPON COMPLETION OF WORK ALL SYSTEMS TO REMAIN, REMAIN OPERATIONAL.
3. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK AND PIPING SYSTEMS UPON COMPLETION OF WORK.
4. EXISTING EXPOSED PIPING SYSTEMS NOT TO BE REUSED, AND NOT SPECIFICALLY NOTED FOR REMOVAL SHALL BE COMPLETELY REMOVED.
5. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.
6. ALL EXISTING EXPOSED, UNNECESSARY DUCTWORK AND PIPING NOT RELATE TO NEW WORK SHALL BE COMPLETELY REMOVED.
7. RE-ROUTE OR REMOVE ALL EXISTING DUCTWORK, PIPING AND SYSTEMS WHERE NECESSARY TO AVOID NEW EQUIPMENT, STRUCTURAL OR MASONRY WORK AS REQUIRED BY THE PROPOSED ALTERATIONS.

COORDINATION DRAWINGS

1. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.
 - A. SHEET METAL AND PLUMBING SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "REVIEWED" OR "FURNISHED AS DIRECTED" PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS. PRIOR TO THE SUBMISSION AND REVIEW OF SHEET METAL SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR REVIEW SHEET METAL SHOP STANDARDS. ANY SHEET METAL SHOP DRAWINGS SUBMITTED PRIOR TO THE SUBMISSION OF THE SHOP STANDARDS SHALL BE RETURNED "NOT REVIEWED".
 - B. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE OTHERS TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THESE WORK:
 - MECHANICAL SHEET METAL
 - PLUMBING CONTRACTOR
 - FIRE PROTECTION PIPING
 - ELECTRICAL WORK
 - MECHANICAL PIPING
2. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWINGS AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.
3. THE ARCHITECT AND THE ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
4. SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW FOR ACCEPTABILITY OF INSTALLATIONS.
5. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.
6. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.
7. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

AS BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPER WORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A

COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

3. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.
4. MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E. TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC...) VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.
5. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
6. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
7. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
8. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.
9. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

HANGERS AND SUPPORT

1. SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND FEDERAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.
2. PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO SUPPORT PIPING AND EQUIPMENT. HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT DUCTWORK, PIPING EQUIPMENT AND TO KEEP IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC... ARE SUPPORTED FROM CONCRETE CONSTRUCTION, DO NOT WEAKEN CONCRETE OR PENETRATE WATERPROOFING. ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS, AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN CONTACT WITH COPPER OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELT SLEEVE.
3. PROVIDE ADDITIONAL SUPPORT FOR DUCTWORK, PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.
4. BEAM CLAMPS - HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES FOR 2-1/2 INCHES AND LARGER, 1 BEAM CLAMPS SHALL BE FORGED STEEL. "C" CLAMPS ARE NOT TO BE USED.

DUCTWORK

1. DUCTWORK SHALL BE FABRICATED FROM HOT-DIPPED GALVANIZED STEEL SHEET CONFORMING TO ASTM A653, WITH G60 COATING.
2. MANUFACTURED METAL DUCTWORK AND FITTINGS SHALL BE BY LINDAB, SEMCO OR UNITED MCGILL CORP. FLAT OVAL AND ROUND DUCTS: MACHINE MADE FROM SPIRAL LOCKSEAM DUCT WITH LIGHT REINFORCING CORRUGATIONS; FITTINGS MANUFACTURED OF AT LEAST TWO GAGES HEAVIER THAN METAL DUCT.
3. FABRICATE, SUPPORT, INSTALL AND SEAL IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING AND SEALING FOR 1" PRESSURE CLASS.
4. INSULATED FLEXIBLE DUCTS SHALL BE FABRICATED FROM MULTIPLE LAYERS OF ALUMINUM LAMINATE SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE WITH FIBERGLASS INSULATION AND POLYETHYLENE VAPOR BARRIER. PRESSURE RATING SHALL BE 10 INCH W.G. POSITIVE AND 1.0 INCH W.G. NEGATIVE.
5. JOINT SEALERS AND SEALANTS SHALL BE NON-HARDENING, WATER, MILDEW AND MOLD RESISTANT. FLAME SPREAD OF 0, SMOKE DEVELOPED OF 0 WHEN TESTED IN ACCORDANCE WITH ASTM E84.
6. PROVIDE AIR FOIL TURNING VANES WHEN RECTANGULAR ELBOWS MUST BE USED.

PIPING

1. HOT WATER SUPPLY AND RETURN
 - A. PIPE: SCHEDULE 40 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED, THREADED OR GROOVED JOINTS.
 - B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS, ASTM B16.3 MALLEABLE IRON THREADED FITTINGS, OR GROOVED FITTINGS AND MECHANICAL COUPLINGS.
 - C. FITTINGS 2" AND UNDER SHALL BE THREADED, FITTINGS 2-1/2" AND OVER SHALL BE WELDED OR GROOVED.
 - D. PIPING 2" AND SMALLER MAY BE ASTM B88 TYPE K DRAWN COPPER WITH SOLDERED FITTINGS OR COPPER PRESS FITTINGS.
 - E. INSULATION: PROVIDE RIGID MOLDED, NONCOMBUSTIBLE FIBERGLASS PIPE INSULATION WITH WHITE KRAFT PAPER VAPOR BARRIER JACKET. FITTINGS SHALL BE COVERED WITH FLEXIBLE FIBERGLASS INSULATION AND ZESTON PVC FITTING COVERS. INSULATION THICKNESS SHALL BE 1 1/2" IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE.
2. PIPING INSTALLATION
 - A. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE OF PIPE BEFORE ASSEMBLY.
 - B. AFTER COMPLETION, FILL, CLEAN AND TREAT SYSTEM. VENT AIR FROM SYSTEM.
 - C. INSTALL HOT WATER TO ASME B31.9 REQUIREMENTS.
 - D. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.

REFRIGERATION PIPING

1. DRAWN (RIGID) COPPER TUBE SHALL BE TYPE ACR, R410 RATED, ASTM B280, H58 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME B16.22 WROUGHT COPPER. JOINTS SHALL BE BRAZED WITH AWS A5.8 BCUP SILVER / PHOSPHORUS / COPPER ALLOY.
2. ANNEALED (SOFT) COPPER TUBE SHALL BE TYPE ACR, R410 RATED, ASTM B280, O60 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME 16.22 WROUGHT COPPER. JOINTS SHALL BE FLARED OR BRAZED WITH AWS A5.8 BCUP SILVER / PHOSPHORUS / COPPER ALLOY.
3. INSULATION SHALL BE FLEXIBLE ELASTOMERIC. INSULATION THICKNESS SHALL BE IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE.
4. PIPING INSTALLATION
 - A. INSTALL REFRIGERATION PIPING IN ACCORDANCE WITH SPLIT SYSTEM MANUFACTURER'S INSTRUCTIONS AND ASME B31.5.
 - B. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.
 - C. ALL EXPOSED REFRIGERANT AND CONDENSATE PIPING SHALL BE CONCEALED WITH TRANE'S LINE-HIDE LINE SET COVER SYSTEM OR EQUIVALENT.

CONDENSATE PIPING:

1. CONDENSATE PIPING SHALL BE ASTM B88 TYPE M DRAWN COPPER WITH SOLDERED FITTINGS OR COPPER PRESS FITTINGS.
2. INSULATION: PROVIDE RIGID MOLDED, NONCOMBUSTIBLE FIBERGLASS PIPE INSULATION WITH KRAFT PAPER VAPOR BARRIER JACKET. FITTINGS SHALL BE COVERED WITH FLEXIBLE

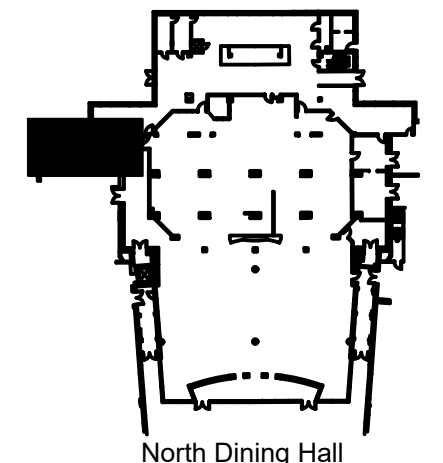
FIBERGLASS INSULATION AND ZESTON PVC FITTING COVERS. INSULATION THICKNESS SHALL BE 1/2".

TESTING, ADJUSTING AND BALANCING

1. AFTER COMPLETION OF THE WORK, BUT BEFORE SUBSTANTIAL COMPLETION, TEST, ADJUST AND BALANCE ALL AIR AND WATER SYSTEMS IN ACCORDANCE WITH EITHER AABC, NEBB, OR TABB STANDARDS.
2. TESTING AND BALANCING CONTRACTORS SHALL BE CERTIFIED BY EITHER AABC, NEBB OR TABB.
3. AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN FOR SUPPLY SYSTEMS AND PLUS OR MINUS 10 PERCENT FOR RETURN AND EXHAUST SYSTEMS.
4. AIR OUTLETS AND INLETS SHALL BE BALANCED TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
5. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.
6. SUBMIT FINAL REPORT INDICATING DESIGN VERSUS FINAL PERFORMANCE; NOTABLE CHARACTERISTICS OF THE SYSTEM; DESCRIPTION OF SYSTEMS OPERATION SEQUENCE; TEST CONDITIONS; AND A LIST OF INSTRUMENTS USED. FINAL REPORT SHALL BE SUBMITTED PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.

HVAC INSTRUMENTATION AND CONTROLS

1. FURNISH AND INSTALL COMPLETE TEMPERATURE CONTROL FOR ALL HVAC SYSTEMS CONNECTED TO THE EXISTING **TRANE BUILDING MANAGEMENT SYSTEM**.
2. PROVIDE NEW CONTROL DEVICES INCLUDING THERMOSTATS, TEMPERATURE SENSORS AND OTHER RELATED DEVICES FOR A COMPLETE OPERATIONAL SYSTEM PER THE SEQUENCE OF OPERATION AND INDUSTRY STANDARDS.
3. MOUNT ALL CONTROLS FURNISHED AS ACCESSORIES TO EQUIPMENT AND PROVIDE ALL CONTROL WIRING REQUIRED FOR PROPER OPERATION.
4. SEQUENCE OF OPERATION
 - A. THE ATC CONTRACTOR SHALL INTEGRATE THE HEAT PUMPS INTO THE BMS VIA BACNET MSTP. THE BMS SHALL BE ABLE TO ADJUST THE HEAT PUMP SET POINT AND OPERATING MODE. THE HEAT PUMPS SHALL OPERATE ON THEIR RETURN AIR SENSORS TO MAINTAIN TEMPERATURE SET POINT.
 - B. WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 45°F, THE HEAT PUMPS SHALL BE THE PRIMARY SOURCE OF HEAT. WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 45°F, THE FIN TUBE RADIATION SHALL BE THE PRIMARY SOURCE IF HEAT. FOR THE PRINCIPALS OFFICE, THE FIN TUBE SHALL OPERATE TO MAINTAIN THE SPACE TEMPERATURE. WITHIN THE PRINCIPALS OFFICE AND THE HEAT PUMP WITHIN THE ADMINISTRATIVE OFFICE SHALL SUPPLEMENT AS NECESSARY TO MAINTAIN SPACE TEMPERATURE.
 - C. THE ATC CONTRACTOR SHALL UPDATE THE BMS GRAPHIC, INCLUDING THE COURTYARD CONSTRUCTION AREA (REFER TO ARCHITECTURAL PLANS) TO REFLECT THE NEW ARCHITECTURAL LAYOUT. DISPLAYED INFORMATION SHALL MATCH THE EXISTING DISPLAY.



North Dining Hall
KEYPLAN

Colburn & Guyette
100 Ledgewood Place
Rockland, MA

RZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
Storrs, CT 06269

MAIER design group, llc.
architecture & interiors

100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0073 / Fax: 860.293.0094

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MECHANICAL SPECIFICATIONS

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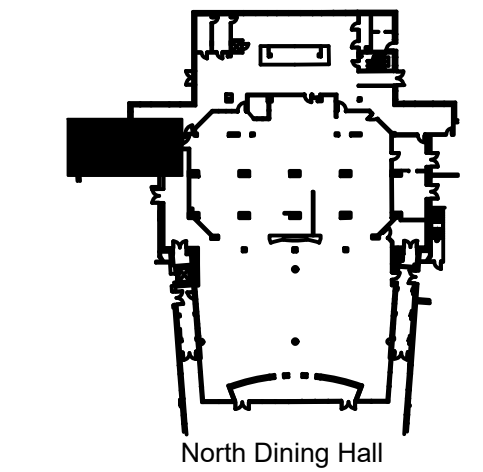


ABBREVIATIONS	
AAV	AIR ADMITTANCE VALVE
ABV.	ABOVE
AFF	ABOVE FINISHED FLOOR
BEL	BELOW
BFP	BACKFLOW PREVENTER DEVICE
BV	BALANCE VALVE
CW	COLD WATER
HW	HOT WATER
CO	CLEANOUT
ECO	CLEANOUT, EXISTING
CLG	CEILING
CP	CIRCULATOR PUMP
CFH	CUBIC FEET PER HOUR
CND	CONDENSATE DRAIN PIPING
DF	DRINKING FOUNTAIN
EWC	ELECTRIC WATER COOLER
EWB	ELECTRIC WATER HEATER
EX., EXIST.	EXISTING
FD	FLOOR DRAIN (ADD "E" FOR EXISTING)
FL	FLOOR
FS	FLOOR SINK
G	GAS
GPM	GALLONS PER MINUTE
GSV	GAS SOLENOID VALVE
HW	HOT WATER
HB	HOSE BIBB
HC	HANDICAPPED ACCESSIBLE
HWR	HOT WATER RECIRCULATION
IW	INDIRECT WASTE
INV. ELEV.	INVERT ELEVATION
LAV	LAVATORY
LPG	LIQUID PETROLEUM GAS
ORD	OVERFLOW ROOF DRAIN
OST	OVERFLOW STORM
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
RD	ROOF DRAIN
RPZ OR RPD	REDUCED PRESSURE BACKFLOW PREVENTER
RL	RAIN LEADER
S	SOIL
SP	SUMP PUMP/SEWAGE PUMP
SS	SOIL STACK
SI	SOLIDS INTERCEPTOR
SD	SHOWER DRAIN
ST	STORM
SAN	SANITARY
T&P	TEMPERATURE & PRESSURE RELIEF VALVE
TP	TRAP PRIMER
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
V	VENT
VIF	VERIFY IN FIELD
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WS	WASTE STACK
WH	WALL HYDRANT
WCO	WALL CLEANOUT
YH	YARD HYDRANT
WHA	WATER HAMMER ARRESTOR

PLUMBING SYMBOL LEGEND	
	BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	CHECK VALVE
	BACKFLOW PREVENTER ASSEMBLY (RPZ)
	BALANCING VALVE (CALIBRATED)
	GAS VALVE, (BALL OR PLUG)
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
	THERMOSTATIC MIXING VALVE
	HOT WATER RETURN PUMP
	HOSE BIBB (HB) OR DRAIN VALVE
	WALL HYDRANT (WH) (EXTERIOR)
	GLOBE VALVE
	MOTORIZED VALVE
	UNION
	STRAINER
	PIPE DROP WITH VALVE
	PIPE ELBOW DOWN OR DROP
	PIPE ELBOW UP
	WALL CLEANOUT
	PIPE CAP
	P-TRAP
	OVERFLOW DOWNSPOUT NOZZLE (ODN)
	T&P RELIEF VALVE
	WATER METER ASSEMBLY
	GAS METER ASSEMBLY
	GAS PRESSURE REGULATOR
	PRESSURE GAUGE
	THERMOMETER
	TRAP PRIMER
	ELECTRONIC TRAP PRIMER
	FLOOR CLEANOUT
	FLOOR DRAIN (FD)
	FLOOR SINK (FS)
	ROOF DRAIN (RD)
	BACKWATER VALVE
	WATER HAMMER ARRESTER (WHA)
	HEAT TRACE WIRING
	HEAT CABLE WIRING
	COMPRESSED AIR OUTLET (GENERAL SERVICE)
	ADA ACCESSIBLE FIXTURE
	FIXTURE DESIGNATION (REFER TO SCHEDULE)

PLUMBING PIPING SYMBOL LEGEND	
	FIRE SERVICE
	WATER SERVICE
	COLD WATER
	HOT WATER
	HOT WATER RECIRCULATION
	VENT PIPING
	SANITARY OR WASTE ABOVE GRADE
	SANITARY OR WASTE BURIED
	COMBINATION WASTE & VENT ABOVE GRADE
	COMBINATION WASTE & VENT BURIED
	INDIRECT WASTE
	STORM DRAIN BURIED
	RAIN LEADER (ABOVE GRADE)
	OVERFLOW RAIN LEADER
	STORM DRAIN BURIED
	CONDENSATE DRAIN (ABOVE GRADE)
	CONDENSATE DRAIN BURIED
	PUMPED CONDENSATE DRAIN
	GREASE WASTE (ABOVE GRADE)
	GREASE WASTE BURIED
	LIQUID PETROLEUM GAS
	NATURAL GAS
	TEMPERED WATER SUPPLY
	TEMPERED WATER RETURN
	FILTER WATER
	NON-POTABLE WATER
	RADON VENT
	ACID VENT
	ACID WASTE (ABOVE GRADE)
	ACID WASTE BURIED
	COMPRESSED AIR (GENERAL SERVICE)
	PIPING WITH HEAT TRACE or HEAT CABLE

PLUMBING GENERAL NOTES	
1.	ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
2.	THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED PLUMBING SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
3.	THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
4.	THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TO DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5.	THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL THE TRADES BEFORE COMMENCING WORK.
6.	EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
7.	WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
8.	THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS, OFFSETS, ETC. AS REQUIRED TO INSTALL PIPING, EQUIPMENT, MAINTAINING PROPER CLEARANCES AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES.
9.	DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.
10.	IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE; ONLY THE BRANCH PIPING TO GROUPS OF FIXTURES IS INDICATED. EACH AND EVERY FIXTURE SHALL BE PROPERLY PIPED TO WATER, WASTE, AND VENT PIPING SYSTEMS. REFER TO THE PLUMBING SCHEDULES FOR INDIVIDUAL PIPE SIZES TO EACH FIXTURE.
11.	PROVIDE PROPER PIPING SYSTEM IDENTIFICATION LABELS, SLOPES FOR DRAIN PIPING, CLEANOUTS, HANGERS, ETC. IN ACCORDANCE WITH THE PLUMBING CODE.
12.	REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES OR EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT. MOUNTING HEIGHTS SHALL BE APPROVED BY THE ARCHITECT.
13.	INSTALL WATER HAMMER ARRESTORS (WHA) AT ALL QUICK CLOSING VALVES (FLUSH VALVES, SOLENOID VALVES, ETC.); SIZE SHALL BE BASED ON FIXTURE UNITS PER PDI STANDARDS AND INSTALLED PER MANUFACTURER'S RECOMMENDATION.
14.	ALL PIPING, DRAINS, STRAINERS, FAUCETS, FAUCET AERATORS, FILTERS, ETC. SHALL BE THOROUGHLY CLEANED AND FLUSHED IMMEDIATELY BEFORE PROJECT COMPLETION. PROVIDE CERTIFICATION ON CONTRACTOR'S LETTER HEAD THAT THIS WORK HAS BEEN COMPLETED.
15.	DOMESTIC WATER DROPS AND RISERS INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF INSULATION AND THE LOCATION SHALL BE MADE INFILTRATION FREE.
16.	BEFORE INSTALLATION, COORDINATE THE WORK WITH OWNER-FURNISHED EQUIPMENT, INCLUDING REQUIRED SERVICE CONNECTIONS, FACTORY START UPS AND INSTALLATION OF FIELD DEVICES.
17.	PIPE ALL CONDENSATE DRAINS FROM MECHANICAL EQUIPMENT COOLING COILS, BY GRAVITY (INTERIOR AIR HANDLING UNITS, FAN COIL UNITS, AC UNITS, ETC.) TO FLOOR DRAINS, JANITOR'S SINKS OR OTHER APPROVED LOCATION THROUGH AN AIR GAP. EACH CONDENSATE DRAIN SHALL BE TRAPPED AT THE EQUIPMENT DRAIN OUTLET. REFER TO TRAP DETAILS ON DRAWINGS. COORDINATE EXACT LOCATION OF EQUIPMENT WITH THE HVAC CONTRACTOR AND ADJUST AS NECESSARY.
18.	INSULATE ALL WASTE ABOVE SLAB RECEIVING CONDENSATE FROM EQUIPMENT INCLUDING "P" TRAPS AND BRANCH WASTE PIPING
19.	ALL INDIRECT WASTE DRAINS SHALL BE PIPED TO FLOOR DRAINS, FUNNELS OR FIXED AIR GAP FITTINGS, THROUGH AIR GAP OR TO A SINK DRAIN TAILPIECE.
20.	INSTALL TRAP PRIMERS OR TRAP GUARD SEALER FOR FLOOR DRAINS, HUB DRAINS AND FIXED AIR GAP FITTINGS. WHERE TRAP IS SUBJECT TO LOSS OF SEAL BY EVAPORATION, CONNECT TRAP PRIMER TO COLD WATER LINE. PROVIDE ISOLATION VALVES AND EXTEND SLOPED PRIMING LINE TO DRAIN TRAPS.
21.	COORDINATE ALL PLUMBING EQUIPMENT REQUIRING POWER, FOR EXACT LOCATION AND POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
22.	ALL EXTERIOR EXPOSED GAS PIPING SHALL BE PRIMED AND PAINTED.
23.	FLOOR MOUNTED PLUMBING EQUIPMENT SHALL BE INSTALLED ON A 6" CONCRETE HOUSE-KEEPING PAD. COORDINATE SIZE AND FINAL LOCATION OF ALL CONCRETE PADS WITH THE STRUCTURAL ENGINEER. PADS SHALL BE MINIMUM 6" LARGER THAN THE EQUIPMENT IN BOTH HORIZONTAL DIRECTIONS.
24.	COORDINATE EXACT LOCATION OF PLUMBING SERVICES ENTERING THE BUILDING WITH THE SITE CONTRACTOR AND UTILITY DRAWINGS PRIOR TO INSTALLATION. COORDINATE ALL FOUNDATION WALL PENETRATIONS AND INVERT ELEVATIONS WITH THE GENERAL CONTRACTOR AND/OR CONSTRUCTION MANAGER BEFORE COMMENCING WORK.
25.	SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.
26.	PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH THE CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.



North Dining Hall
KEYPLAN

Colburn & Guyette
100 Ledgewood Place
Rockland, MA

RZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
Storrs, CT 06269

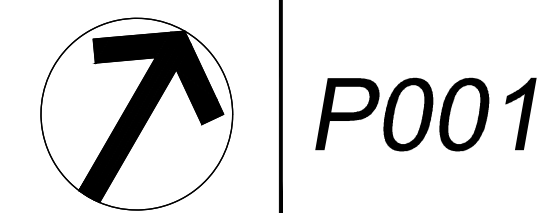
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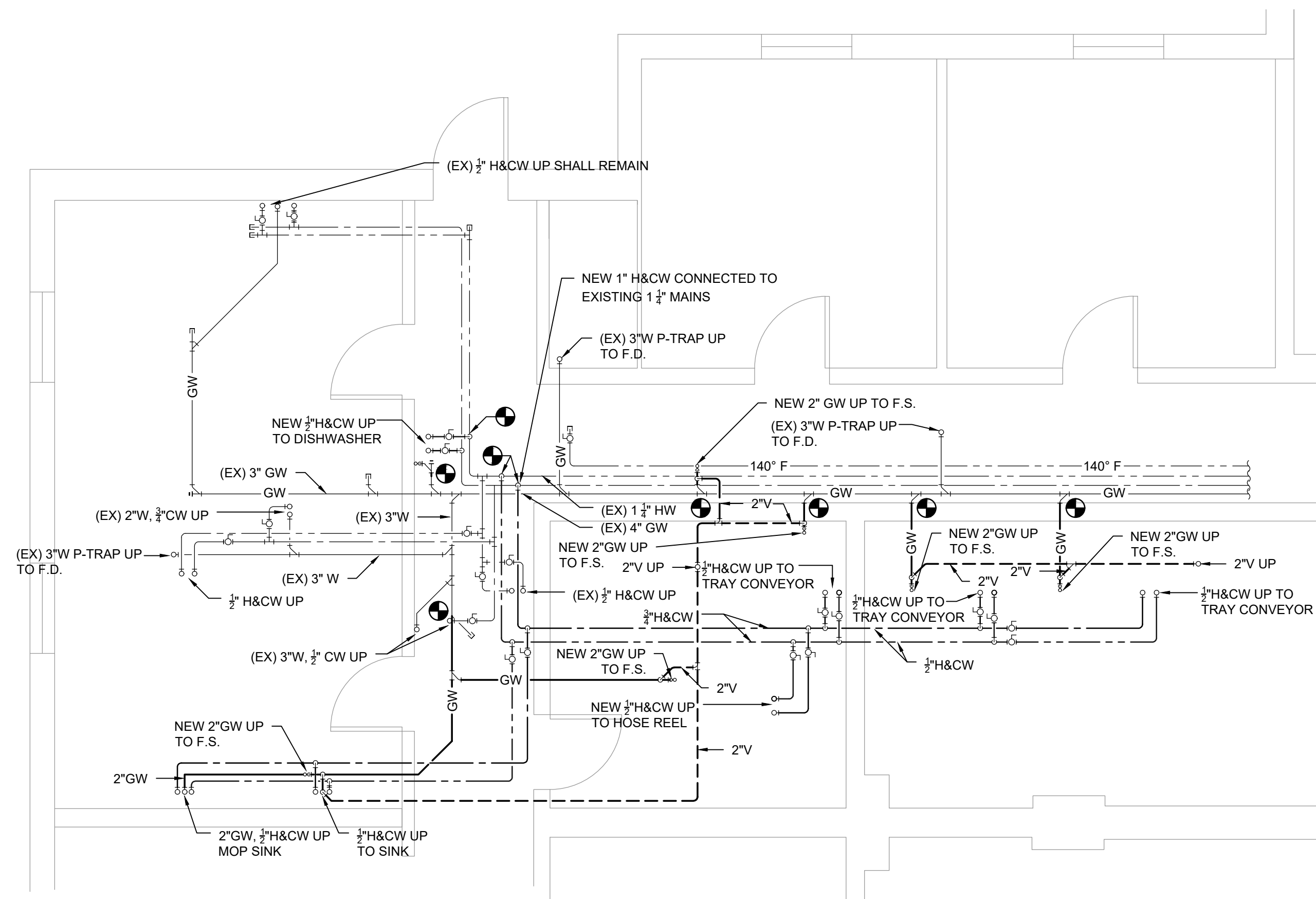
100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0093 / Fax: 860.293.0094

PLUMBING
ABBREVIATIONS NOTES
AND SYMBOL LIST

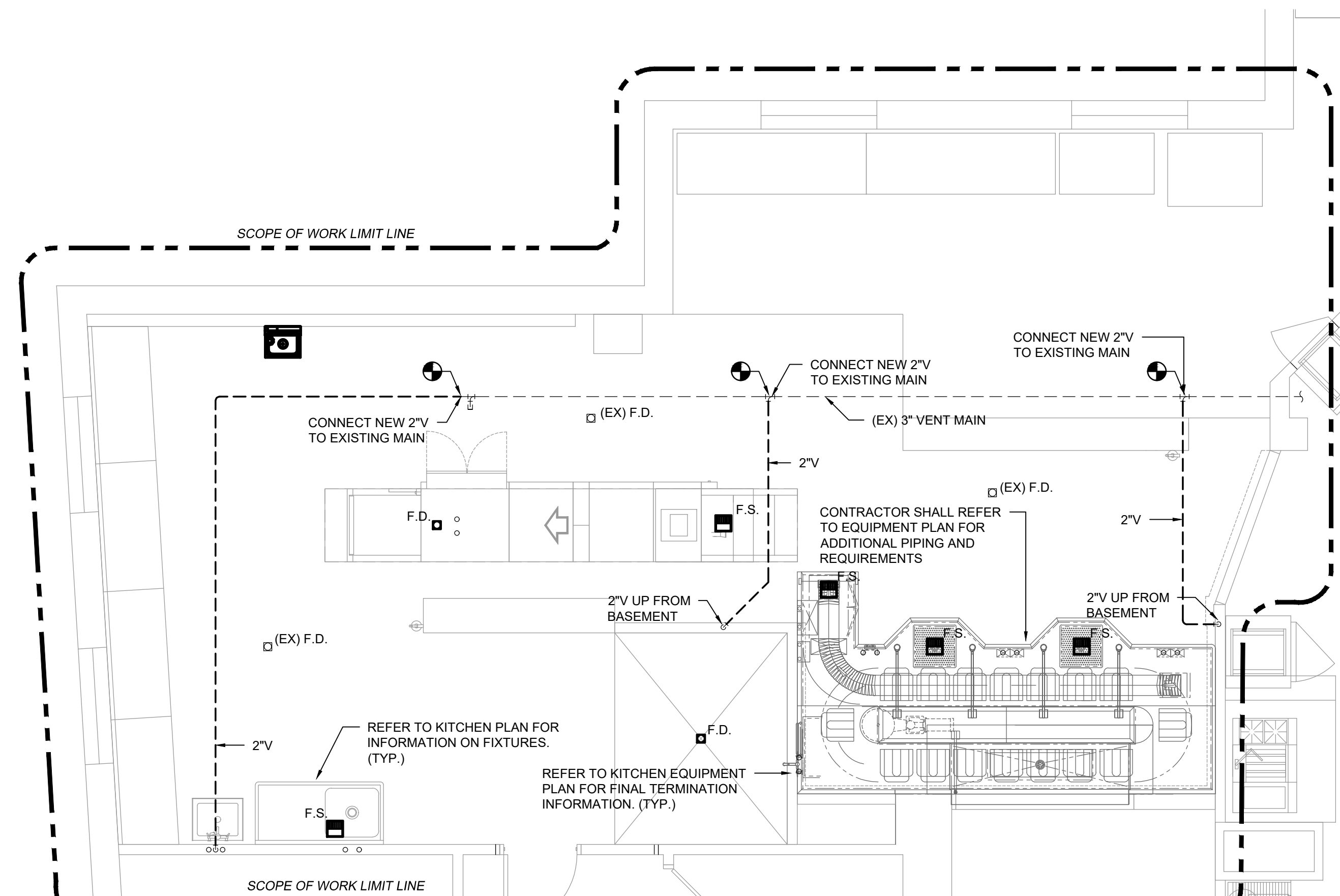
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Drawn By:	Checked By:
RJ	RJ

Revisions:	

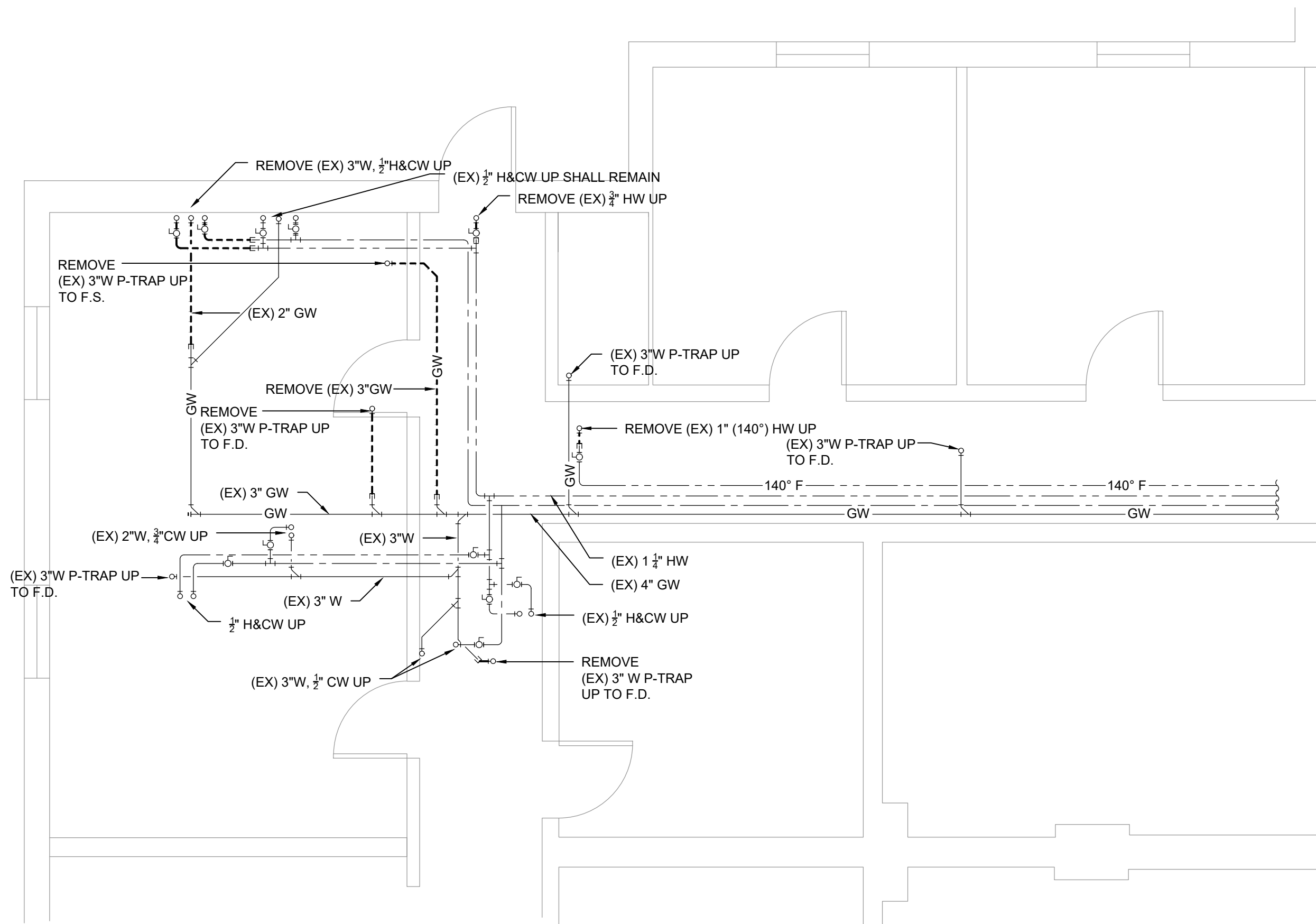




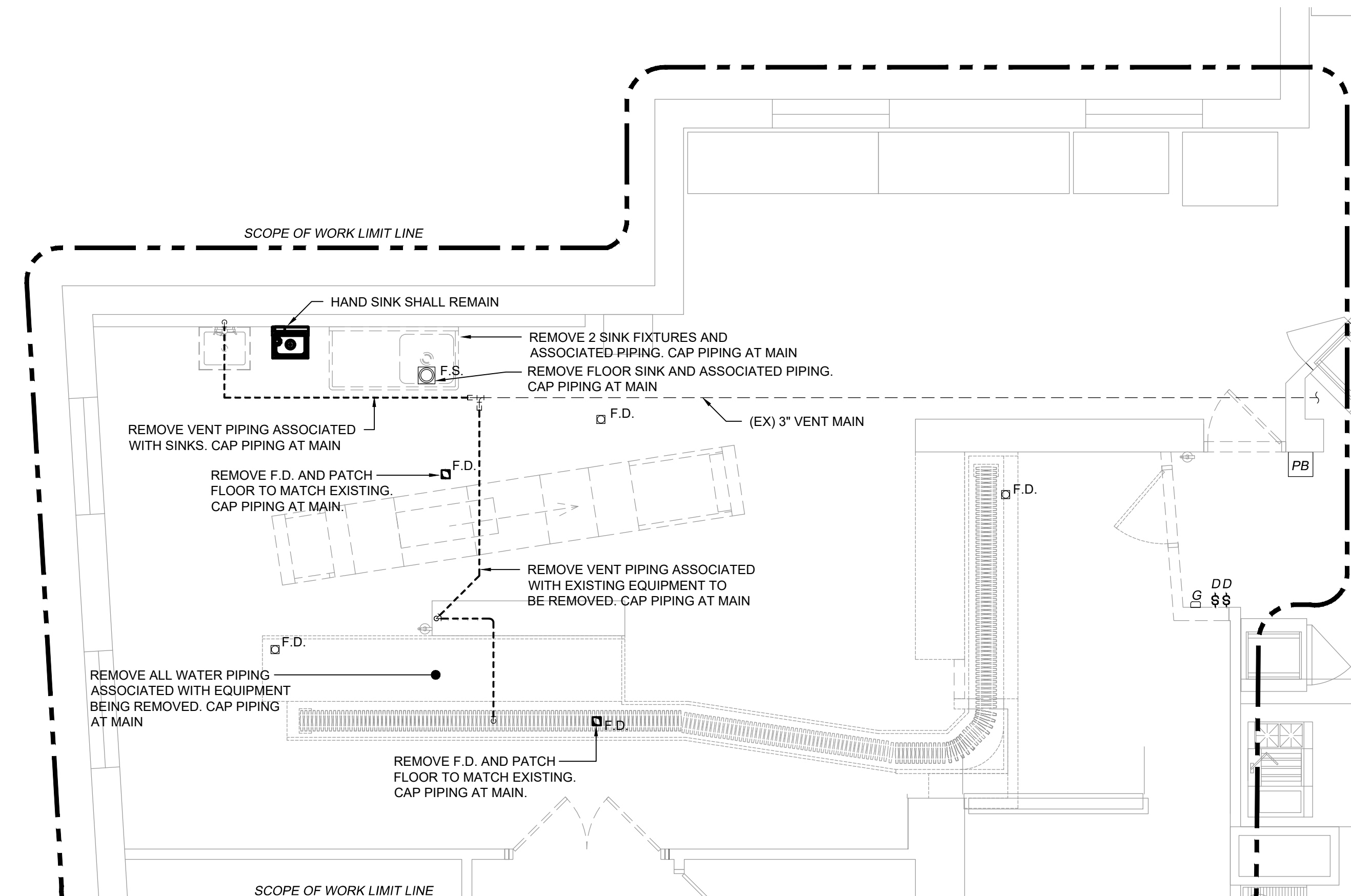
3 BASEMENT LEVEL NEW WORK PLAN
SCALE: 1/4"=1'-0"



4 PLUMBING SUPPLY NEW WORK PLAN
SCALE: 1/4"=1'-0"

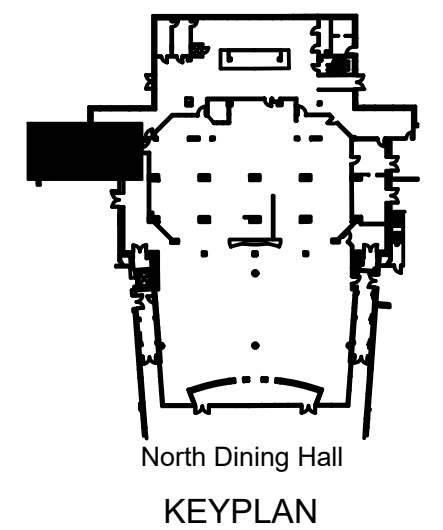


1 BASEMENT LEVEL DEMOLITION PLAN
SCALE: 1/4"=1'-0"



2 PLUMBING SUPPLY DEMOLITION PLAN
SCALE: 1/4"=1'-0"

- NOTES:**
1. PLUMBING CONTRACTOR TO PROVIDE ALL LABOR TO INSTALL ALL AVTEC EQUIPMENT PROPERLY.
 2. CONTRACTOR SHALL COORDINATE ALL PIPING TERMINATIONS PRIOR TO START OF WORK.
 3. CONTRACTOR TO COORDINATE ALL NEW WORK PRIOR TO START.



Colburn & Guyette
100 Ledgewood Place
Rockland, MA

RZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

Dish Room Renovation
University of Connecticut
McConaughy Dining Hall Dish Room
Storrs, CT 06269

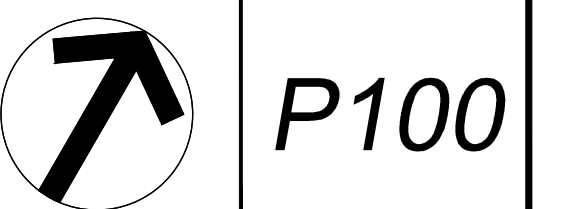
MAIER design group, llc.
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100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0093 / Fax: 860.293.0094

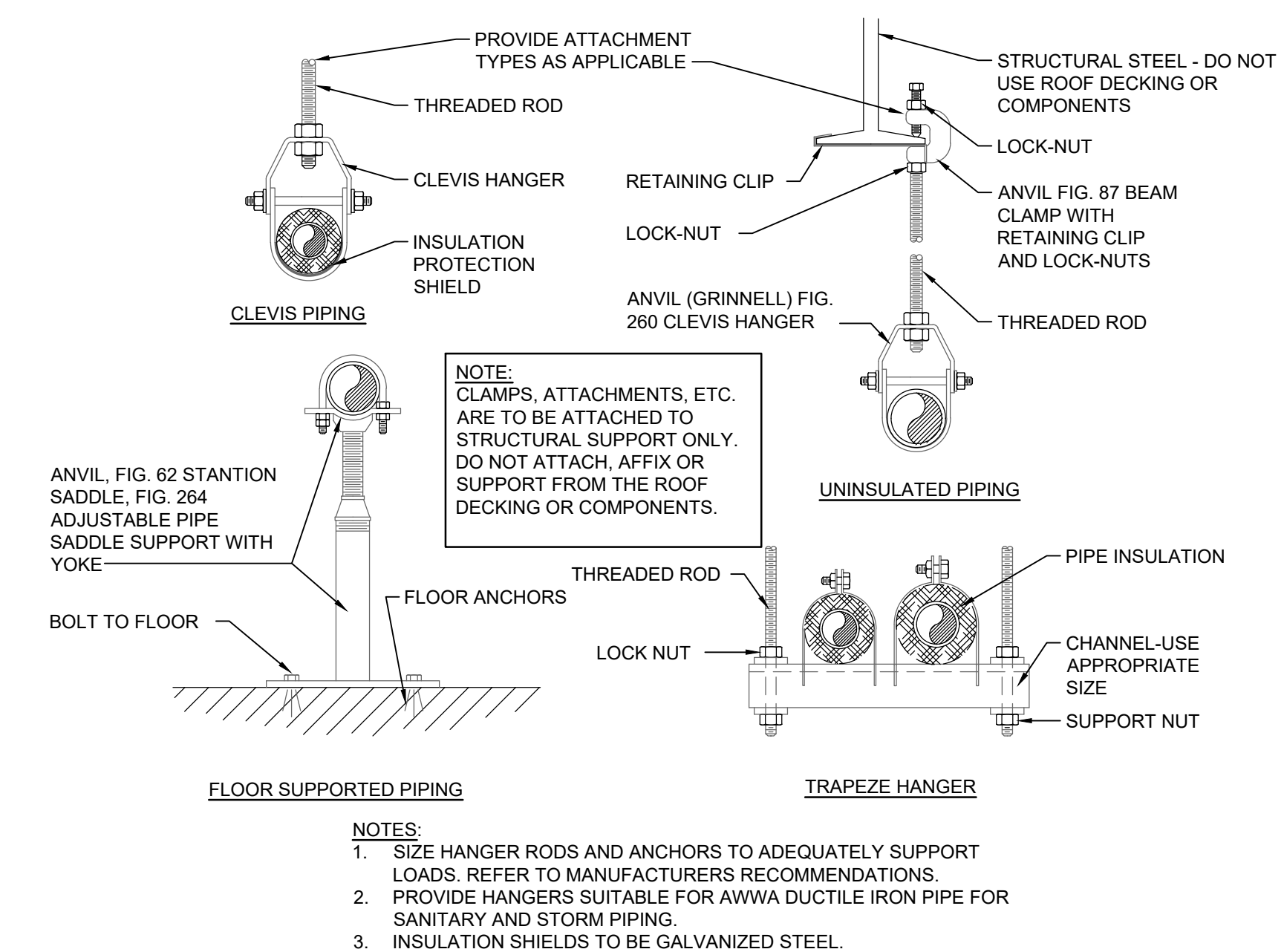
PLUMBING DEMO & NEW WORK PLAN

Project Number: 2018.029 Issue Date: 24 JAN 2020
Scale: 1/4"=1'-0" CAD File: P100.dwg
Drawn By: RJ Checked By: RJ

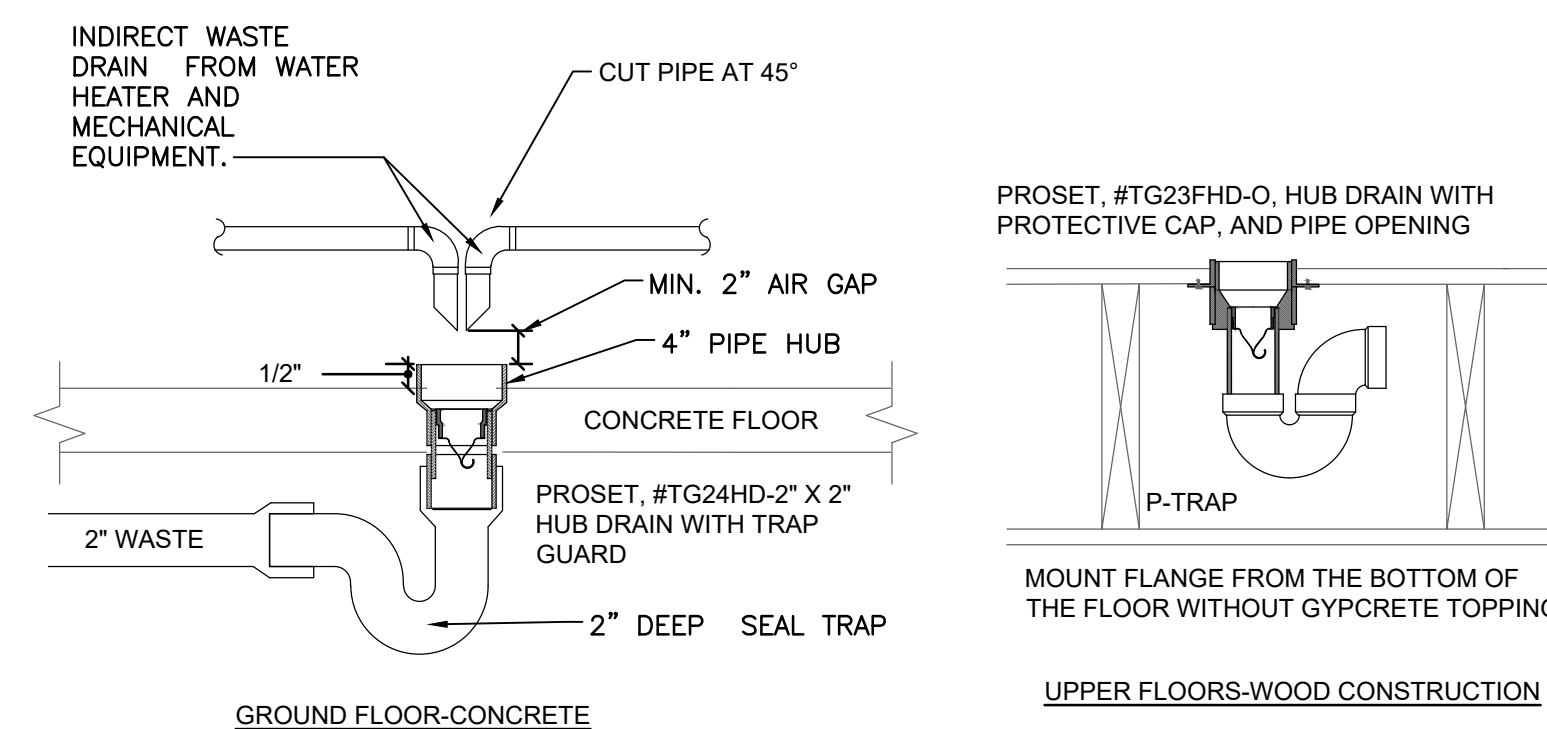
Revisions:



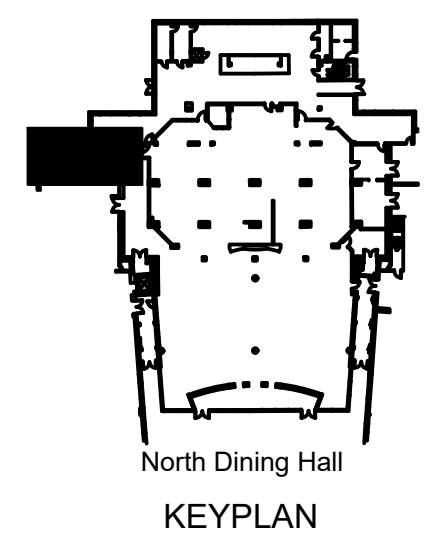
DRAIN SCHEDULE				
TAG	MFR	MODEL	OUTLET CONNECTION (IN)	DESCRIPTION
FD	JAY R. SMITH	2005Y-PU50-U	4"	CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL REVERSIBLE CLAMPING COLLAR, SEEPAGE OPENINGS, AND 5" DIA. NICKEL BRONZE STRAINER WITH VANDAL PROOF SCREWS, CAPPED TRAP PRIMER CONNECTION. SUPPLY WITH SURE SEAL INLINE FLOOR DRAIN TRAP SEALER SIZE TO MATCH OUTLET PIPE. SIZE AS INDICATED ON FLOOR PLANS.
FS	JAY R. SMITH	SMITH MODEL 3001	4"	STAINLESS STEEL FLANGED RECEPTOR WITH SEEPAGE HOLES, 12" GRATE, 8" DEEP RECEPTOR, NICKEL BRONZE RIM AND SECURED GRATE, STAINLESS STEEL DOME BOTTOM STRAINER, FLASHING CLAMP, VANDAL PROOF SCREWS, WITH STAINLESS STEEL 1/2" GRATE.



2 TYPICAL PIPE HANGER AND SUPPORT DETAIL
P200 SCALE: NOT TO SCALE



1 TYPICAL INDIRECT (HUB) DRAIN DETAIL
P200 SCALE: NOT TO SCALE



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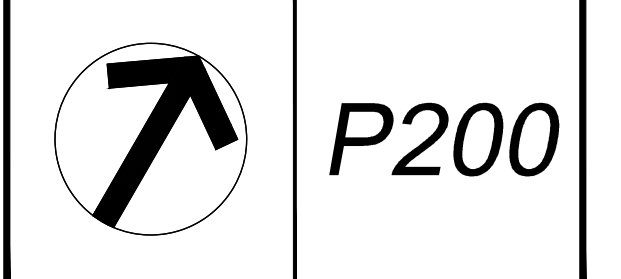
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100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0093 / Fax: 860.293.0094

PLUMBING DETAILS

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Revisions:



PLUMBING SPECIFICATIONS

GENERAL CONDITIONS OF THE CONTRACT

IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE FOLLOWING SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

ITEMS AND SERVICES NOT SHOWN ON THE DRAWINGS OR STATED IN THE SPECIFICATIONS, BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. DRAWINGS INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR.

GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED.

THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES, EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION.

THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AND PAY ALL APPLICABLE FEES. INCLUDED SHALL BE ANY UTILITY COST ASSOCIATED WITH ANY NEW OR MODIFIED SERVICES.

CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT'S GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS AS REFERENCED OR STATED.

CONNECTICUT CODES AND STANDARDS:
2005 CONNECTICUT SUPPLEMENT WITH 2009 AMENDMENT
2015 INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS
2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL PLUMBING CODE
2017 INTERNATIONAL ELECTRICAL CODE (NFPA 70)
ICC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, AND ADMINISTRATIVE TASKS/DUTIES REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN.

STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

SEISMIC RESTRAINTS

THE PROJECT IS IN A SEISMIC ZONE AND ALL WORK SHALL BE INSTALLED, SUPPORTED, AND SEISMICALLY RESTRAINED IN ACCORDANCE WITH CURRENT SEISMIC REQUIREMENTS.

COORDINATION
CONTRACTOR IS REQUIRED TO OBTAIN COMPLETE SETS OF THE CONTRACT DOCUMENTS FOR COORDINATION WITH ALL OTHER TRADES.

SHOP DRAWINGS

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER INITIAL REVIEW AND APPROVAL, REVISED IF REQUIRED AND RESUBMITTED AS PER ENGINEER'S COMMENTS PRIOR TO CONSTRUCTION.

ACCEPTANCE OF DEVIATIONS OR SUBSTITUTIONS FROM BASE SPECIFIED ITEMS OR EQUIPMENT SHALL BE AT THE ENGINEER'S DISCRETION. ANY CHANGES REQUIRED FOR ACCOMMODATION SHALL BE AT NO ADDITIONAL COST.

OWNER'S MANUAL AND AS BUILT DRAWINGS

UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE AN OWNER'S MANUAL WITH AS-BUILT DRAWINGS REFLECTING INSTALLED CONDITIONS.

THE OWNER'S MANUAL SHALL CONSIST OF ALL DOCUMENTATION PROVIDED AS SHOP DRAWINGS, MANUALS PACKED WITH EQUIPMENT AND COMPLETE PARTS BREAKDOWN WITH PART NUMBERS AND DIAGRAMS. THE OWNER'S MANUALS SHALL BE IN A THREE RING BINDER. PROVIDE NAMES AND PHONE NUMBERS OF SUPPLY HOUSES WHERE PARTS MAY BE PURCHASED.

AS-BUILT DRAWINGS SHALL CONSIST OF FIELD MARK-UPS TO THE CONSTRUCTION DRAWINGS AND INCLUDE ANY ADDITIONAL DETAILS TO CLEARLY REFLECT INSTALLED CONDITIONS. ANY ISSUED OR SUPPLEMENTAL SKETCHES OR DIRECTIVES SHALL BE INCORPORATED INTO THE FINAL CONSTRUCTION MARK-UPS.

CONTRACTOR SHALL MAINTAIN, ON-SITE, A FIELD MARK-UP SET OF DOCUMENTS WHICH SHALL BE KEPT CURRENT WITH ANY CHANGES FROM THE ORIGINAL CONTRACT DOCUMENTS. THESE MARK-UPS ARE TO BE PROVIDED AS AS-BUILT DRAWINGS FOR COMPARISONS.

BASES, HANGERS AND SUPPORTS

THE CONTRACTOR SHALL PROVIDE, OR CAUSE TO BE PROVIDED BY ANOTHER CONTRACTOR, ALL REQUIRED BASES AND SUPPORTS FOR PIPING AND EQUIPMENT PROVIDED UNDER THESE SPECIFICATIONS.

PROVIDE ADJUSTABLE CLEVIS HANGERS FOR ALL SINGLE RUN PIPING. WHERE REQUIRED, OVERSIZE TO ACCOMMODATE INSULATION TO PASS THROUGH. PROVIDE INSULATION SHIELDS, WHERE POSSIBLE, GROUP PIPING TO ALLOW TRAPEZE HANGERS TO BE USED.

PROVIDE ALL ANCHORS, INSERTS AND BEAM CLAMPS REQUIRED FOR HANGERS AND SUPPORTS. IF ADDITIONAL STRUCTURAL MEMBERS OR SUPPORTS ARE REQUIRED, THE CONTRACTOR IS TO COORDINATE WITH THE STRUCTURAL CONTRACTOR FOR PROVISION OF THESE MEMBERS. ALL PIPING AND EQUIPMENT IS TO BE SECURELY FASTENED TO THE BUILDING STRUCTURE IN AN ACCEPTABLE MANNER.

ALL PIPING PASSING THROUGH WALLS AND FLOORS SHALL BE SLEEVED. THE SLEEVES SHALL HAVE AN INSIDE DIAMETER 1" LARGER THAN THE PIPE AND INSULATION, IF INSULATED. INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE.

PIPE SEALS AND FIRE-STOPS

SEAL ALL PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS, WALLS AND FLOORS WITH A UL LISTED, APPROVED AND TESTED FIRE AND/OR SMOKE SEALING MATERIAL EQUIVALENT TO THE RATING OF THE WALL, PARTITION OR FLOOR. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR COMPATIBILITY WITH WALL AND FLOOR CONSTRUCTION.

FOR INTERIOR PARTITIONS, WALLS AND FLOORS, SLEEVES SIZED TO ALLOW INSULATION TO PASS THROUGH CONTINUOUS WITH A MAXIMUM 1" ANNULAR SPACE BETWEEN THE INSULATION AND SLEEVE. SLEEVES TO BE CUT SMOOTH AND INSTALLED FLUSH WITH FINISHED WALLS AND 2" ABOVE FINISHED FLOORS. FILL THE ANNULAR SPACE WITH UL SEALING MATERIAL.

EQUIPMENT ACCESSIBILITY

LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITION WITH ADEQUATE CLEARANCES TO PROVIDE SERVICE OR REPAIR.

ACCESS DOORS OR PANELS IN WALLS, CEILINGS OR FLOORS SHALL BE FIELD COORDINATED AND INSTALLED FOR ACCESS TO CONCEALED VALVES, EQUIPMENT OR DEVICES.

CLEANING AND PROTECTION AGAINST FOREIGN MATTER

THE JOBSITE SHALL BE KEPT CLEAN AT ALL TIMES. CAP EXPOSED PIPING AND COVER FLOOR DRAINS TO INSURE ADEQUATE PROTECTION AGAINST THE ENTRANCE OF FOREIGN MATTER.

AT COMPLETION OF THE PROJECT, ALL EQUIPMENT, FIXTURES, ETC. SHALL BE CLEANED.

OPERATING INSTRUCTIONS

UPON THE COMPLETION OF ALL WORK, TESTING AND ADJUSTING THE CONTRACTOR SHALL FURNISH PERSONNEL TO INSTRUCT THE OWNER'S REPRESENTATIVES IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF THE EQUIPMENT AND SYSTEMS FURNISHED.

GUARANTEES

IN ADDITION TO THE CONTRACTOR'S GUARANTEE, PROVIDE ALL APPLICABLE EXTENDED GUARANTEES FOR EQUIPMENT.

PLUMBING PIPING INSULATION

PROVIDE 1" GLASS FIBER INSULATION FOR ALL NEW COPPER PIPING (HOT AND COLD WATER), INCLUDES INSULATION FOR FITTINGS AND VALVES. INSULATION TO BE AS MANUFACTURED BY KNAUF, MANVILLE, OWENS-CORNING OR CERTAIN-TEED.

INSULATION TO HAVE A "K" VALUE OF 0.24 AT 75°F. FLAME SPREAD/SMOKE OF 25/50, MAX. 850°F RATING. VAPOR BARRIER WHITE KRAFT PAPER WITH GLASS FIBER YARN BONDED TO ALUMINIZED FILM.

AT ALL FITTINGS AND VALVES PROVIDE PRE-MOLDED PVC JACKET BY ZESTON.

BEFORE INSTALLING INSULATION, ALL REQUIRED PIPING IS TO BE TESTED AND APPROVED.

INSULATION IS TO PASS CONTINUOUSLY THROUGH HANGERS, WALLS, SLEEVES AND OTHER PIPE PENETRATIONS.

PLUMBING PIPING

PIPING MATERIAL SHALL BE AS FOLLOWS:

SANITARY/WASTE PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING. CISPI 301.

VENT PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING. CISPI 301.

WATER PIPING - COPPER, TYPE L, ASTM B88, SOLDER OR PRESS CONNECTIONS.

BALL VALVES SHALL BE BRONZE, TWO PIECE, FULL PORT, EXTENDED LEVER HANDLE FOR INSULATION, CLASS 150-400 PSI WOG, AS MANUFACTURED BY MILWAUKEE, NIBCO OR APOLLO.

NO PIPING SHALL BE COVERED UNTIL TESTED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT.

CONCEALED PIPING AND ACCESSORIES SHALL BE ARRANGED TO USE THE MINIMUM AMOUNT OF ACCESS DOORS AND PANELS.

PIPING SHALL BE RUN CONCEALED IN FURRED SPACES, CHASES, WALLS, ETC. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN EXPOSED PIPING.

PROVIDE ISOLATION AND SHUT-OFF VALVES AT ALL BRANCH LINES AND EQUIPMENT.

PROVIDE LISTED AND APPROVED DIELECTRIC FITTINGS WHEN JOINING DISSIMILAR METALS.

RUN ALL SANITARY AND WASTE PIPING AT A MINIMUM OF 1/8" PER FOOT FOR PIPING. SLOPE VENT PIPING TO DRAIN.

PIPE HANGERS SHALL BE PLACED ADJACENT TO MOTOR DRIVEN EQUIPMENT. HANGERS AND SUPPORTS SHALL BE AS FOLLOWS:

COPPER PIPING

1/2" TO 1-1/4" AT MAXIMUM 6'-0" SPACING
1-1/2" TO 3" AT MAXIMUM 10'-0" SPACING

CAST IRON PIPING

1-1/2" TO 2" AT MAXIMUM 10'-0" SPACING
2-1/2" AND ABOVE AT MAXIMUM 5'-0" SPACING

WATER PIPING IS TO BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH LOCAL AND STATE HEALTH REGULATIONS. AFTER FLUSHING AND DISINFECTING, THE WATER IS TO BE TESTED BY THE CONTRACTOR THROUGH AN INDEPENDENT LAB WITH A WRITTEN REPORT.

ALL NEW WATER, SANITARY, WASTE, AND VENT PIPING SHALL BE PRESSURE TESTED AS FOLLOWS:

SANITARY, WASTE, AND VENT PIPING - HYDROSTATIC TEST AT 10 FT HEAD FOR A MINIMUM 4 HOURS. SUBMIT WRITTEN/SIGNED TEST RESULTS.

WATER PIPING - HYDROSTATIC TEST AT 125 PSI OR 1-1/2 TIMES OPERATING PRESSURE (WHICHEVER IS GREATER) FOR A MINIMUM 4 HOURS WITH MAXIMUM LOSS OF 2 PSI. SUBMIT WRITTEN/SIGNED TEST RESULTS. AIR TESTING WILL NOT BE ACCEPTABLE.

PLUMBING PIPING SPECIALTIES

CLEANOUTS IN INTERIOR FINISHED FLOORS SHALL HAVE A CAST IRON BODY WITH ANCHOR FLANGE, THREADED TOP ASSEMBLY AND ROUND GASKETED SCORED COVER. FOR FINISHED FLOORS PROVIDE DEPRESSED COVER TO ACCEPT FLOOR FINISH.

WATER HAMMER ARRESTORS SHALL BE STAINLESS STEEL CONSTRUCTION. BELLOWS TYPE, PRECHARGED, AIR CHAMBERS ARE NOT ACCEPTABLE. INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES, ON HOT AND/OR COLD WATER SUPPLIES TO NEW INDIVIDUAL FIXTURES OR IN BANKS OF FIXTURES.

PLUMBING EQUIPMENT AND FIXTURES

ALL PLUMBING EQUIPMENT AND FIXTURES SHALL BE NEW, COMPLETE WITH ALL TRIM AS SPECIFIED. APPROVAL CERTIFICATION BY MASSACHUSETTS IS REQUIRED.

FOR ALL EQUIPMENT AND FIXTURES, INSTALL AS PER MANUFACTURER'S INSTRUCTIONS, AS REQUIRED BY CODE, AND IN COMPLIANCE WITH CONDITIONS FOR CERTIFICATION (IF ANY). RETAIN ALL INFORMATION, MANUALS AND PARTS DIAGRAMS PACKAGED WITH THE UNITS.

COORDINATE ALL RELATED ELECTRICAL WORK AND REQUIRED CONNECTIONS TO ACHIEVE AN OPERATIONAL SYSTEM. VERIFY THAT ELECTRICAL POWER HAS PROPER CHARACTERISTICS.

ALL EQUIPMENT SHALL BE UL TESTED AND APPROVED AND IF APPLICABLE SHALL HAVE NSF CERTIFICATION.

PLUMBING FIXTURES SHALL BE INSTALLED WITH TRIM, INCLUDING BUT NOT LIMITED TO, FAUCETS, CARRIERS, WATER SUPPLIES, SUPPLY STOPS, TRAPS, TAILPIECES, HARDWARE, HANGERS/SUPPORTS, AND FASTENING DEVICES.

PLUMBING FIXTURES AND TRIM SHALL BE OF THE MANUFACTURER LISTED ON THE DRAWINGS OR AN APPROVED EQUAL MEETING THE OPERATIONAL CHARACTERISTICS, FUNCTION, SIMILAR APPEARANCE AND QUALITY OF THE SPECIFIED ITEMS.

FOR ALL EXPOSED PIPING TO FIXTURES, PROVIDE CHROME PLATED PIPES, ESCUTCHEONS AT WALLS, SUPPLY TUBES AND SUPPLY STOPS. DRAIN PIPING SHALL BE MINIMUM 17 GA, CHROME PLATED CAST BRASS, P-TRAPS SHALL HAVE CLEANOUT PLUGS.

SEAL FIXTURES TO WALLS AND FLOOR WITH APPROVED SILICONE SEALANT, COLOR TO MATCH FIXTURE COLOR OR CLEAR.

UPON COMPLETION OF INSTALLATION OF PLUMBING EQUIPMENT AND FIXTURES, TEST TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND CODES. FOR ALL EQUIPMENT, REPAIR OR REPLACE ANY MALFUNCTIONING EQUIPMENT OR FIXTURES AND RETEST.

ADJUST WATER PRESSURES THROUGH VALVES OR STOPS TO OBTAIN PROPER FLOW RATES AND PRESSURES REQUIRED.

UPON COMPLETION OF INSTALLATION OF EQUIPMENT OR FIXTURES, THOROUGHLY CLEAN ALL EXPOSED SURFACES, TRIM AND PIPING, FLUSH STRAINERS AND VERIFY FINAL OPERATION.

PROVIDE ALL WARRANTIES AND GUARANTEES TO THE OWNER WITH ALL NAMES, ESTABLISHED DATES, AND ANY ADDITIONAL INFORMATION REQUIRED FOR ENFORCEMENT.

NATURAL GAS PIPING SYSTEM

UNLESS OTHERWISE NOTED ON THE PLANS, GAS PIPING SHALL BE AS FOLLOWS:

GAS PIPING TO BE SCHEDULE 40 BLACK STEEL WITH MALLEABLE IRON FITTINGS, ASTM A53.

PIPE THREADS TO BE TAPERED AND PIPING SHALL SLOPE TOWARDS EQUIPMENT WITH DRIPS AT LOW POINTS AND EQUIPMENT. ASME B1.20.1

ALL PIPING SHALL BE TESTED IN COMPLIANCE WITH THE NEW YORK STATE GAS CODE AND NFPA 54 WITH ALL DOCUMENTATION OF TESTS SIGNED BY CONTRACTOR. TEST WITH COMPRESSED AIR OR OTHER INERT GAS.

SLOPE PIPING UPWARDS AT A MINIMUM OF 1/4" IN 15'-0" HORIZONTAL PIPE RUN.

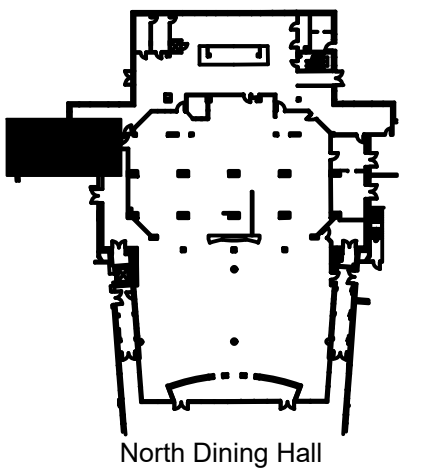
HANGERS AND SUPPORT SPACING SHALL BE AS FOLLOWS:
ALL PIPE SIZES AT MAXIMUM 6'-0" SPACING

GAS CONNECTORS TO EQUIPMENT SHALL BE MADE WITH CCST OR OTHER CSA CERTIFIED/UL LISTED FLEXIBLE CONNECTORS.

ALL PIPING UP TO 2" SHALL BE THREADED, 2-1/2" AND LARGER SHALL BE WELDED.

VALVING SHALL BE BALL VALVES (BRONZE BODY, BRASS STEM PTFE SEAT) FOR PIPING UP TO 2" AND IRON BODY GAS COCKS (BRASS PLUG AND WASHER) FOR PIPING 2-1/2" AND LARGER. CSA CERTIFIED/UL LISTED.

ALL NEW GAS PIPING SHALL BE PAINTED WITH PRIMER AND TWO COATS YELLOW ENAMEL WITH PIPE LABELS SPACED AT MAXIMUM 6'-0" INTERVALS. LABELS TO INDICATE NATURAL GAS AND GAS PRESSURE.



North Dining Hall

KEYPLAN

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100 Ledgewood Place
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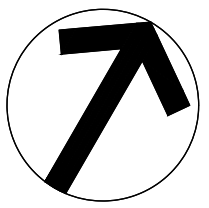
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PLUMBING SPECIFICATIONS

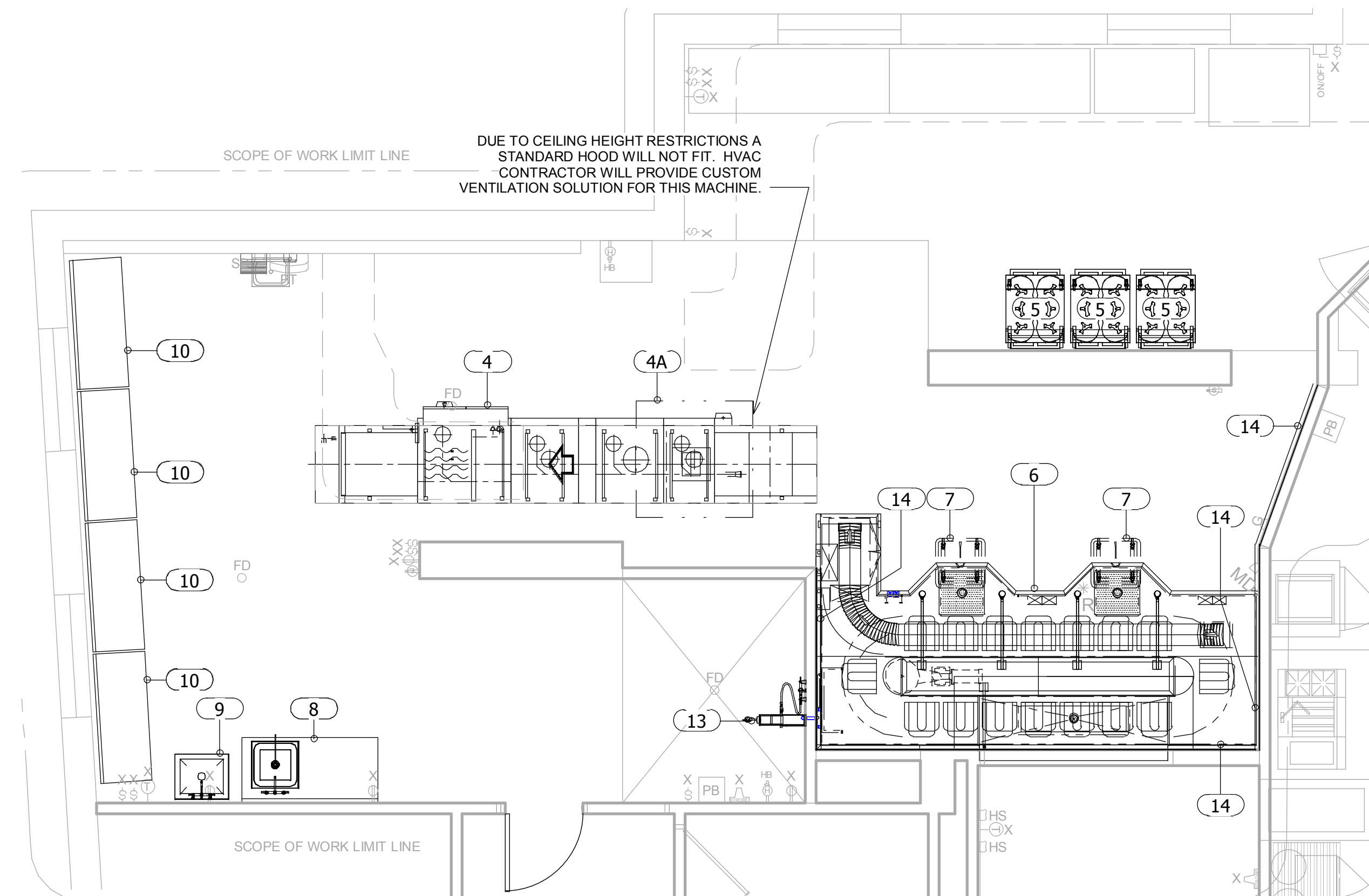
Project Number: 2018.029 Issue Date: 24 JAN 2020
Scale: 1/4"=1'-0" CAD File: P300.dwg
Drawn By: RJ Checked By: RJ

Revisions:

 **P300**



Equipment Utility Schedule 1-100																						
No.	Qty.	Description	HVAC Utilities			Plumbing Utilities					Electrical Utilities									No.	Comment	
			ECFM	Collar Size	SP	HW	CW	DW	IW	MBTUS	Gas Size	Voltage	Phase	HP	Amperage	KW	Hard Connection	Plug	NEMA Config			Electrical Height
1	1	Spare Number																		1		
2	1	Spare Number																		2		
3	1	Spare Number																		3		
4	1	Flight Type Dishmachine - Steam				1/2"	1/2"		2"				230	3		37.1		X			VFY	4
4A	1	Condensate Hood	500	8"x8"																		4A
5	3	Dishcart																				5
6	1	Tray Conveyor				(3) 1/2"	(3) 1/2"		(4) 1-1/2"				(2) 120	1		20.0 & 15.0		X			VFY	6
7	2	Silver Soak Sink																				7
8	1	Sink with Drainboard				1/2"	1/2"		2"													8
Existing to be Relocated - Existing to be relocated - Verify and coordinate all details dimensions and utility requirements in the field with the GC/CM. Unit is to be disconnected by the appropriate trades, stored during construction, cleaned and reinstalled as per new plans and all utilities are to be reconnected by the appropriate trades.																						
9	1	Mop Sink				1/2"	1/2"		2"													9
10	4	Work Table										(2) 115	1		15.0			X	5-15P	32"		10
EC - Provide unit with two (2) duplex outlets. Outlet housing provided by table manufacturer.																						
11	1	Spare Number																				11
12	1	Spare Number																				12
13	1	Hose Reel Assembly				1/2"	1/2"															13
14	4	Wall Flashing																				14
Wall flashing is to go from the top of the base to the underside of the finished ceiling.																						



1 Equipment Layout - North Hall
1/4" = 1'-0"

Revision Schedule		
No.	Description	Date

Drawing Scale: 1/4" = 1'-0"

Sheet Name:
Foodservice Equipment
Layout and Utility
Schedule

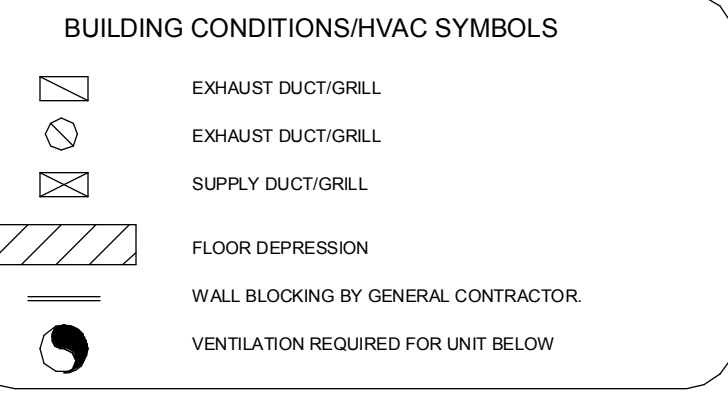
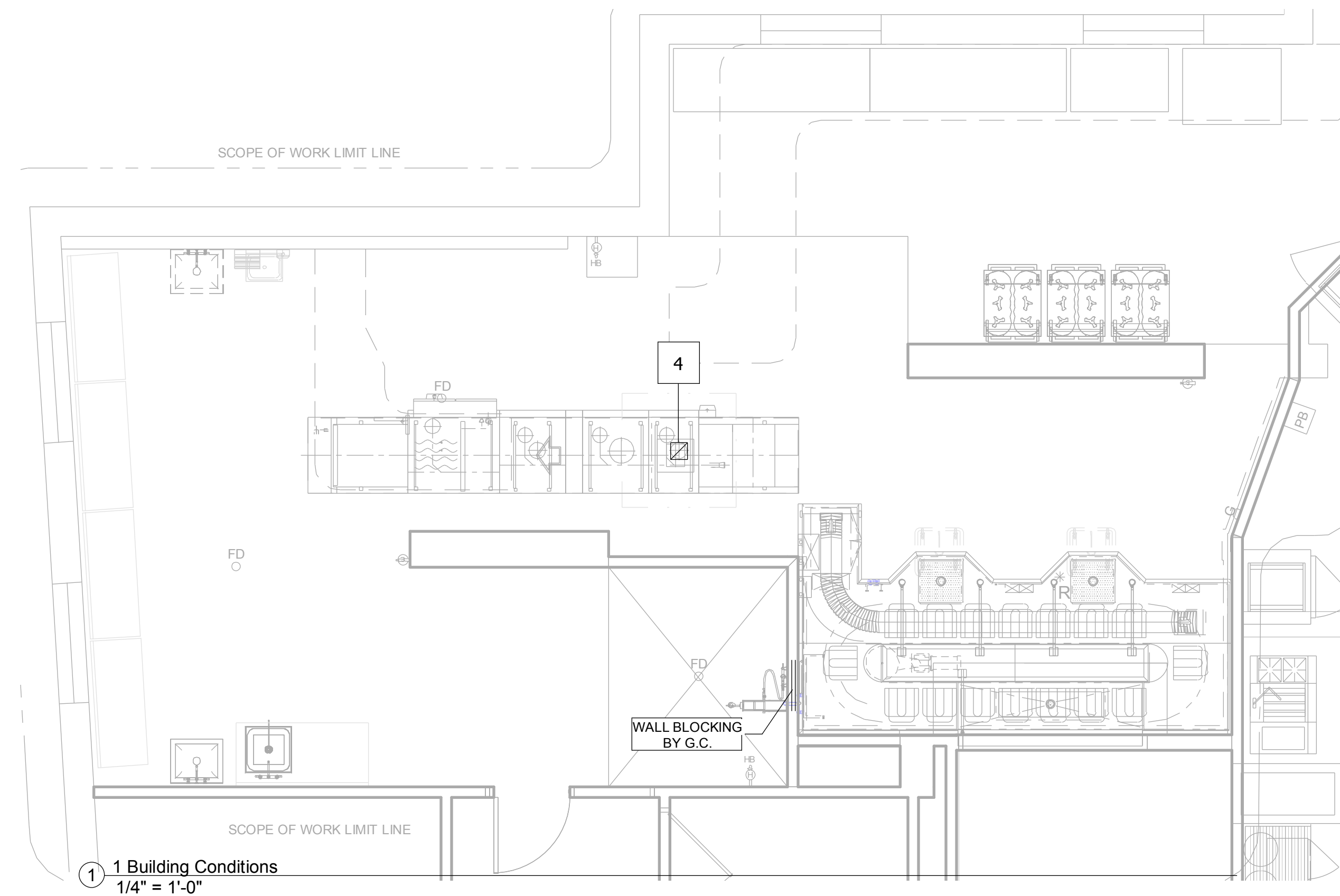
Issued: 01-16-2020

Drawn By: LK

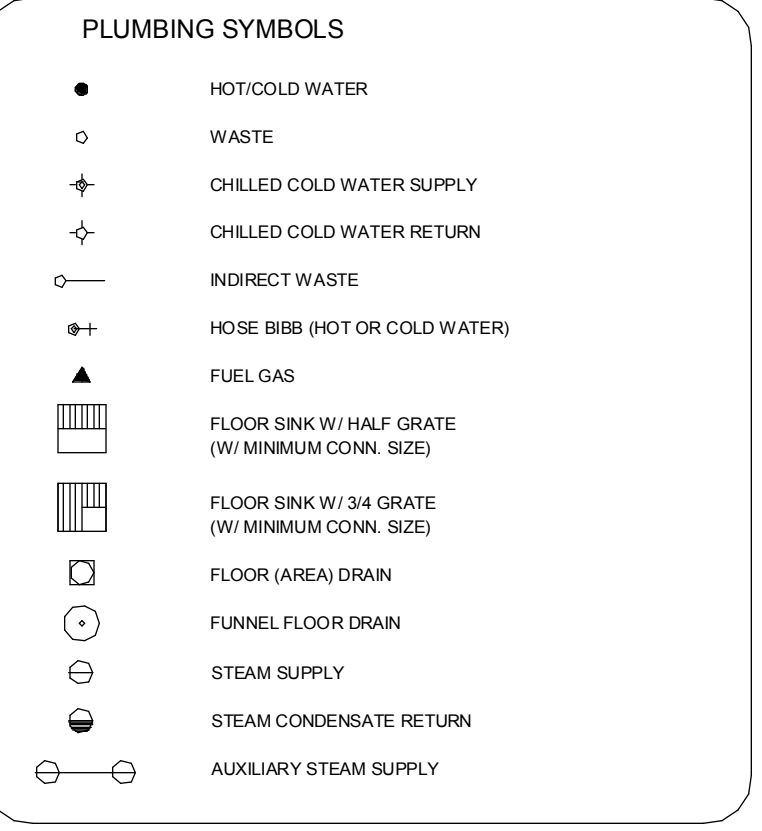
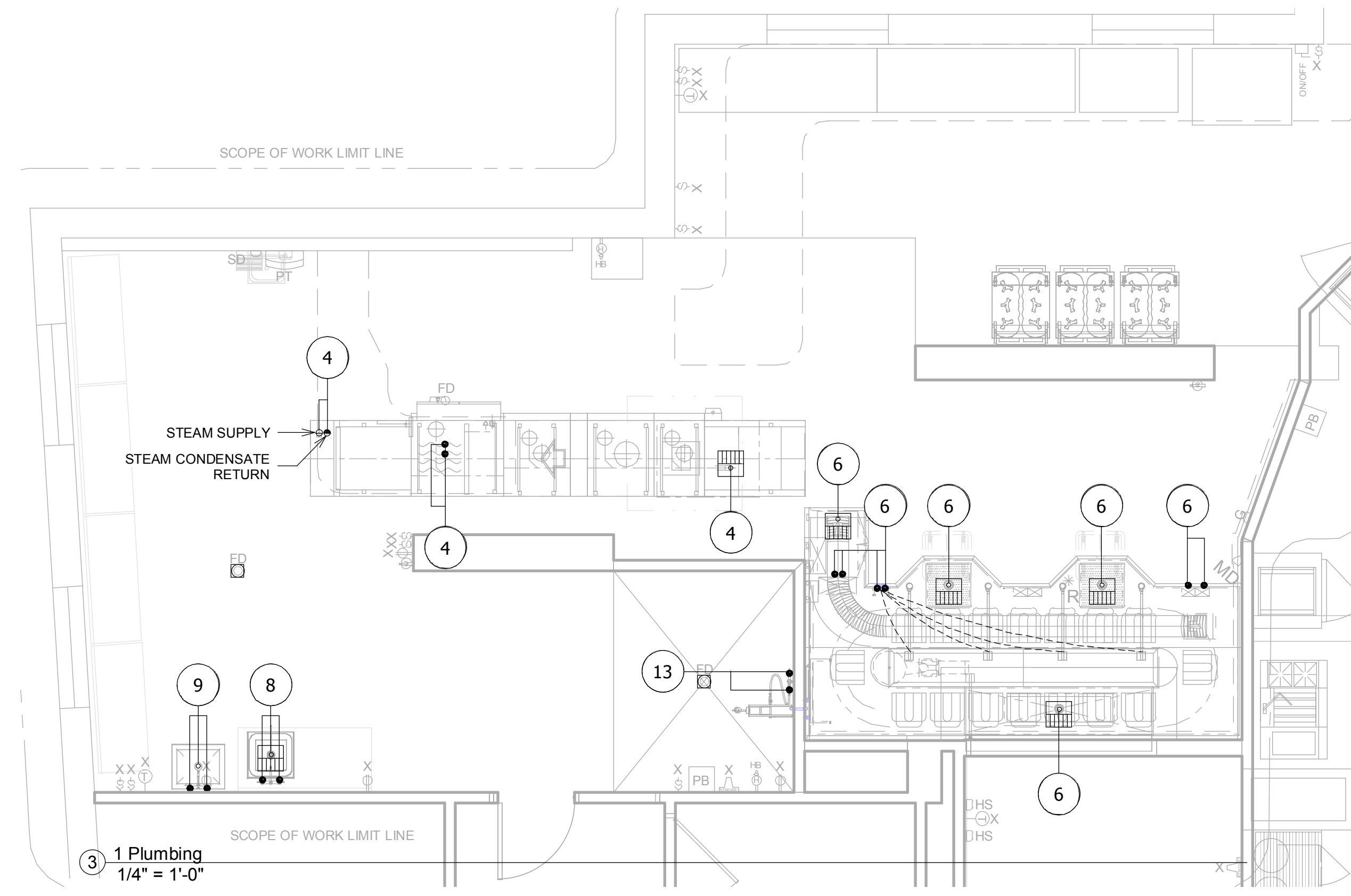
Checked By: BT/KS

Drawing No.:

K1.1



- GENERAL NOTES**
- FOODSERVICE EQUIPMENT SUBCONTRACTOR SHALL VERIFY AND COORDINATE ALL WALL BLOCKING LOCATIONS AND HEIGHTS WITH THE GENERAL CONTRACTOR /CONSTRUCTION MANAGER.
 - FOODSERVICE EQUIPMENT SUBCONTRACTOR SHALL VERIFY AND COORDINATE FLOOR DEPRESSIONS FOR FOODSERVICE EQUIPMENT IN THE FIELD BY GENERAL CONTRACTOR /CONSTRUCTION MANAGER.
 - FOODSERVICE EQUIPMENT SUBCONTRACTOR SHALL PROVIDE CORNER GUARDS AS PER DETAIL F2-43A AND F2-43B.
 - FOODSERVICE EQUIPMENT SUBCONTRACTOR SHALL PROVIDE WALL FLASHING AS PER DETAIL F2-39.
 - FOODSERVICE EQUIPMENT SUBCONTRACTOR SHALL VERIFY AND COORDINATE REFRIGERATION LINE RUNS FOR WALK-IN COOLER AND FREEZER WITH GENERAL CONTRACTOR. VERIFY CONDENSING UNIT LOCATION WITH ARCHITECT AND GENERAL CONTRACTOR /CONSTRUCTION MANAGER.
 - WHEN INSTALLING CONCRETE SUB-FLOOR IN WALK-IN BOX, FOODSERVICE EQUIPMENT SUBCONTRACTOR SHALL PROVIDE ADEQUATE VENTILATION PER MANUFACTURERS SPECIFICATION.



- PLUMBING NOTES**
- ALL FLOOR SINKS AND FLOOR DRAINS PROVIDED AND INSTALLED BY PLUMBING SUBCONTRACTOR. FOODSERVICE EQUIPMENT SUBCONTRACTOR TO VERIFY & COORDINATE FLOOR SINK LOCATIONS IN THE FIELD WITH THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER.
 - ALL HORIZONTAL PIPING EXTENDED AND CONNECTED TO EQUIPMENT SHOULD BE RUN AT THE HIGHEST POSSIBLE ELEVATION ABOVE THE FLOOR. NO LINES SHOULD LAY DIRECTLY ON THE FLOOR AT ANY TIME.
 - RECOMMENDED FLOOR SINKS SHALL BE SQUARE TYPE INDIRECT WASTE RECEPTORS WITH REMOVABLE GRATE. PERCENTAGE OF GRATE AS INDICATED ON PLAN.
 - ALL PLUMBING FIXTURES FURNISHED FOR FOODSERVICE EQUIPMENT TO BE PROVIDED BY FOODSERVICE EQUIPMENT SUBCONTRACTOR AND INSTALLED BY THE PLUMBING SUBCONTRACTOR.
 - ALL WASTES, DIRECT OR INDIRECT, TO BE FURNISHED AND INSTALLED BY THE PLUMBING SUBCONTRACTOR.
 - PROVIDE 110 DEGREE INCOMING WATER TO ALL HAND SINKS.

Revision Schedule		
No.	Description	Date

Drawing Scale: 1/4" = 1'-0"

Sheet Name:
Foodservice Building Conditions and Plumbing Plans

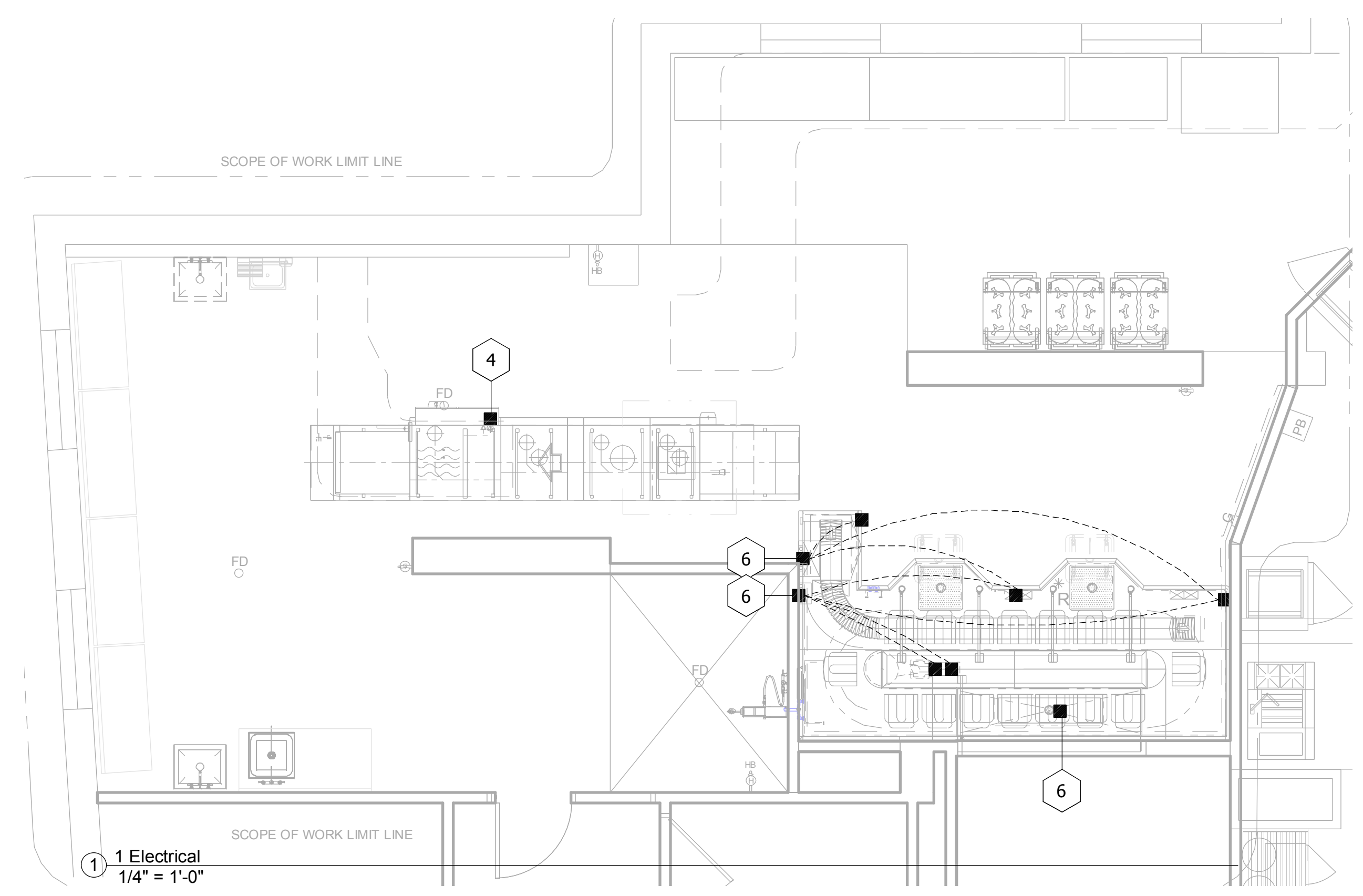
Issued: 01-16-2020

Drawn By: LK

Checked By: BT/KS

Drawing No.:

K2.1



- ELECTRICAL SYMBOLS**
- DUPLEX ELECTRICAL OUTLET (DEO)
 - SINGLE ELECTRICAL OUTLET (SEO)
 - DUPLEX ELECTRICAL OUTLET (INSTALLED IN EQUIP. BY FOODSERVICE EQUIPMENT SUBCONTRACTOR OR MANUFACTURER.)
 - SINGLE ELECTRICAL OUTLET (INSTALLED IN EQUIP. BY FOODSERVICE EQUIPMENT SUBCONTRACTOR OR MANUFACTURER.)
 - ELECTRICAL CONNECTION
 - JUNCTION BOX INSTALLED BY ELECTRICIAN
 - JUNCTION BOX W/ FINAL CONNECTION TO EQUIPMENT
 - CONTROL PANEL BY FOODSERVICE EQUIPMENT SUBCONTRACTOR; INTERCONNECTED BY ELECTRICAL SUBCONTRACTOR
 - VAPOR-PROOF LIGHT FIXTURE
 - FLOOR MOUNTED RECEPTACLE
 - RETRACTABLE RECEPTACLE (DOWN FROM ABOVE)
 - TELEDATA

Revision Schedule		
No.	Description	Date

Drawing Scale: 1/4" = 1'-0"

Sheet Name:
Foodservice Electrical Plan

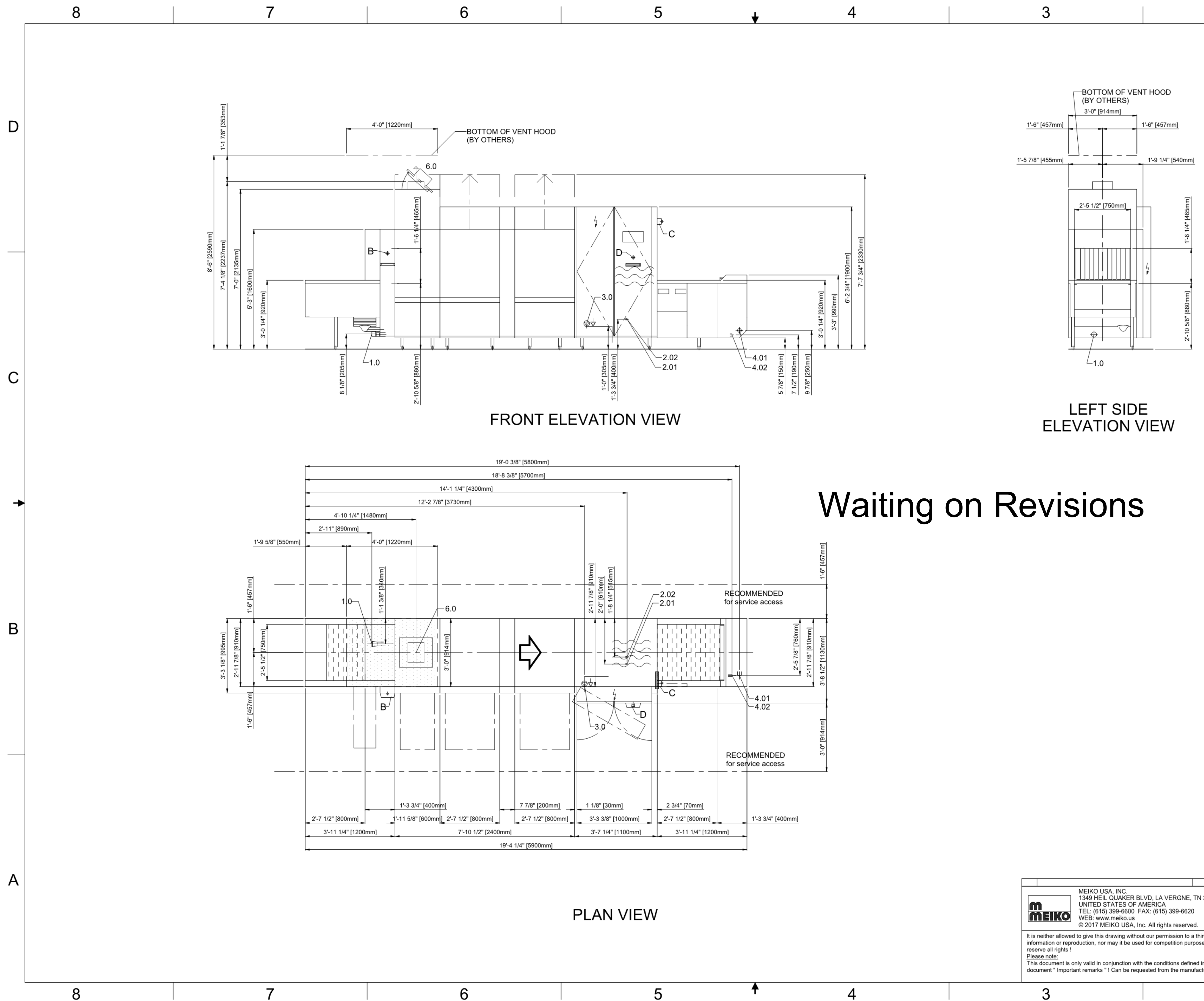
Issued: 01-16-2020

Drawn By: LK

Checked By: BT/KS

Drawing No.:

K2.2



1.0	Drain connection: 2" [50mm] OD horizontal drain outlet [HDPE piping]. Additional piping to drain to be supplied by others. Indirect routing to 4" floor drain recommended.	2" OD or 1-1/2" pipe via no-hub
2.01	Warm water, initial tank fill connection: - Temperature 110 - 140°F / 43 - 60°C (140°F / 60°C recommended to reduce start-up time) - Initial Fill: 67.6 U.S. gals / 256.0 l - Recommended water hardness 1-3 grains per U.S. gal Underside of machine is accessible for piping.	1/2" NPT
2.02	Cold water, final rinse connection: - Temperature cold as available (53°F / 12°C recommended maximum to reduce steam emissions) - Consumption: 56.2 U.S. gals/hr / 212.7 l/hr (at 100% capacity) - Recommended water hardness 1-3 grains per U.S. gal Underside of machine is accessible for piping.	1/2" NPT
3.0	Electrical connection: 1 (one) individual terminal block. Incoming leads must be appropriately sized for electrical supply. Individual circuit breaker/disconnects with lockout/tagout strongly recommended (by others)	
Terminal block (T)		power supply rated amps min supply cond/max breaker
T1 total load		230V/60Hz/3Ph 37.1 A 50 A
Electrical supply from the bottom and then from the rear into the control box. Openings in the box for the supply lines are NOT provided and should be executed on-site using appropriate strain relief devices.		
Equipotential ground lug		

4.01	Steam connection: Saturated steam 15 - 21 psi (1.1 - 1.5 bar) Constant steam pressure is REQUIRED. If pressure is below 15 PSI (1.1 bar), consult factory. If pressure is above 21 PSI (1.5 bar), use of a regulator is REQUIRED (Supplied by others) Consumption: 195 lbs/hr / 53 kW with 50°F / 10°C Please see Plan and Elevation Views for exact location. Underside of machine is accessible for piping.	NPT 1 1/4"
4.02	Condensate return connection: Condensate return line must be pressure-free. Please see Plan and Elevation Views for exact location. Underside of machine is accessible for piping.	NPT 1"
6.0	Ventilation connection: MEIKO recommends a hood above the load end of the machine as shown to capture exhaust air from the machine vent, as well as any steam that may escape from the entrance of the machine. Recommended exhaust hood rating 500 cfm / 850 m³/hr An indirect vent connection that permits service access to ventilation fan is REQUIRED. Exhaust air temperature approximately 72°F / 22°C with incoming cold water temperature 53°F / 12°C. The waste air temperature is depending on the temperature of the incoming water supply. Maximum water temperature 53°F / 12°C strongly recommended. Relative humidity approximately 98%. Heat load of the machine into the dishwash area (not including ware or exhaust): Total: 8.4 kW Perceptible: 5.6 kW Latent: 2.8 kW The waste air connection must be corrosion-resistant and frost free. In particular, provision must be made to prevent air temperatures of 32°F / 0°C or colder from reaching the machine at any time. A hood that provides draining condensation from the vent ducting is STRONGLY RECOMMENDED. PLEASE NOTE: A direct vent connection is not possible. The housing for the exhaust fan is attached to a hinged panel that must be opened to access the heat exchanger for maintenance and service.	

SEPARATION	
FEATURES AND OPTIONS	
GreenEye Technology	
Drying section(s) electrically heated	(B) on/off switch at entry tunnel (including protection bumper), operating side
	(C) on/off switch at the end of the drying section(s), operating side
	(D) Emergency stop at electrical cabinet (including protection bumper)
switch cabinet can be swivelled by 30°	
waste heat air recovery system (WAHRS)	
steam heated tanks	
built in booster heater (BIB)	
single point exhaust	
m-filter active tank water filtration and level control	
conveyor belt MTB 1.11-2	
electric heated single blower dryer (SBD)	

GENERAL NOTES
All dimensions from floor are +/- 1/2" (13mm) due to adjustable feet. This drawing may not be copied, reproduced or distributed in any printed, electronic or machine-readable format without the advance permission of Meiko. This drawing is for information only and may not be used for competitive purposes. All rights reserved.

UTILITY NOTES
All aspects of the machine installation, including all utility connections, must comply with all applicable local and national codes. In most cases, actual utility connections may only be executed by a certified professional (electrician, plumber, etc.). All locations shown on this drawing represent actual utility connection locations and do not take into account local conditions. Connections inside the machine may require the installer to extend supply lines, use appropriate strain relief devices, etc. All utilities must function constantly without interruptions during operation. All aspects of the installation must be protected against freezing temperatures.

	MEIKO USA, INC. 1349 HEIL QUAKER BLVD, LA VERGNE, TN 37086 UNITED STATES OF AMERICA TEL: (615) 399-6600 FAX: (615) 399-6620 WEB: www.meiko.us © 2017 MEIKO USA, Inc. All rights reserved.		Revision	Type	
	It is neither allowed to give this drawing without our permission to a third party for information or reproduction, nor may it be used for competition purposes. We reserve all rights! Please note: This document is only valid in conjunction with the conditions defined in the document * Important remarks * 1 Can be requested from the manufacturer.		Reference M-IQ STANDARD DRAWING / USA	M-IQ B-M74 V6 N02 P8 L-R STEAM HEAT HR / TF: SWW	
	Drawing-No. S00035630		Scale 1/2" = 1'-0"	Order-No.	
	Scale 1/2" = 1'-0"		drawn: 08.10.2018 m-iplan	checked: 08.10.2018	

Waiting on Revisions

Revision Schedule

No.	Description	Date

Drawing Scale:

Sheet Name:

Foodservice Details

Issued: 01-16-2020

Drawn By: LK

Checked By: BT/KS

Drawing No.:

K6.2

Hood information										Exhaust information										Supply information									
Item #	Model	Length [ft]	Material	Weight of hood	Total Exhaust (CFM)	B.P. (WOC)	F.A.B. (WOC)	Collars (ft)	Wash Qty	Total Supply (CFM)	B.P. (WOC)	Collars (ft)	Wash Qty	Weight of Pantry	Total Supply (CFM)		B.P. (WOC)	Collars (ft)	Wash Qty	Weight of Pantry									
N HALL	CH	54	304 SS 18 GA	202 lb	500	0.05	0.00	8	8	1																			

Supply Devices										
Item #	Type	Supply (CFM)	Collars (ft)	Wash Qty						

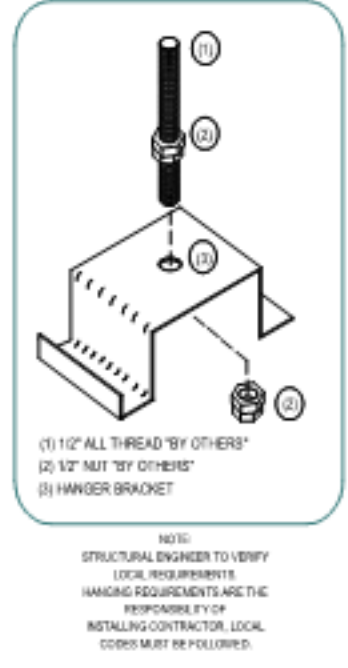
Filters				Lighting				Fire suppression				Switch panel				Continuous capture		Grease cup location	
Item #	Type	Qty	Size	Qty	Type	Type	Location	Type	Location	Type	Location	Type	Location	capture	location	capture	location		
N HALL																			

Ceiling exhaust panels				Backsplash panels				Notes	
Item #	Height [in]	Qty	Type	Qty	Type	Length [in]	Height [in]		
N HALL	18	4							

N HALL

N HALL

PRELIMINARY DRAWING, NOT TO SCALE



PROJECT: UCONN DISHROOM
 LOCATION: UCONN DISHROOM
 DRAWING NO.: HALTON CD 1800001
 DATE: 01-16-2020

DESIGNED BY: COLBURN GUYETTE
 CHECKED BY: COLBURN GUYETTE
 DATE: 01-16-2020

SCALE: 1/8" = 1'-0"

REVISIONS:

NO.	DESCRIPTION	DATE

APPROVED BY: COLBURN GUYETTE
 DATE: 01-16-2020

Revision Schedule		
No.	Description	Date

Drawing Scale:
 Sheet Name:
Foodservice Details

Issued: 01-16-2020
 Drawn By: Author
 Checked By: Checker
 Drawing No.:

K6.3