

# **PROJECT MANUAL**

## **Saville Hall Interior Alterations**

**Quincy College  
24 Saville Avenue  
Quincy, Massachusetts**

**January 18, 2013**

Awarding Authority:

The City of Quincy  
1305 Hancock Street  
Quincy, Massachusetts  
on behalf of Quincy College  
24 Saville Avenue  
Quincy, Massachusetts

**QC JN 0736-2**

**PART A**  
**BIDDING REQUIREMENTS**

**DOCUMENT 000100****TABLE OF CONTENTS****Part A – Bidding Requirements**

Document 000100 - Table of Contents	000100-1 – 000100-2
Document 000101 - City of Quincy Documents:	
Invitation to Bid	1
Certificate of Non-Collusion	1
Tax Compliance Certificate	1
Chapter 62C. Administrative Provisions Relative to State Taxation	1
Signature Authorization	1
Indemnity Agreement	1
Certificate Relating to Debarment and Suspension	1
Certification of General Bidders on Public Construction Projects	1
Certification of Sub-Bidders (if any) on Public Construction Projects	1
Requirements for Minority/Women Business Enterprise	8
Schedule of Participation Minority and Women Business Enterprise	1
Letter of Intent – Minority Business Enterprise	1
Letter of Intent – Women’s Business Enterprise	1
Request for Waiver Minority and Women Business Enterprise Participation	2
Certificate of Work Start-Up by Minority/Women Business Enterprise	1
Quarterly MBE/WBE Activity Report	1
Minority Business Enterprise/Women’s Business Enterprise Contract Completion Verification	1
DCAM General Contractor Update Statement	9
Document 003100 – Sub Bid Form	003100-1 - 003100-4
Document 004100 – General Bid Form	004100-1 - 004100-2

**Part B - Contract Forms**

Document 005200 – Awarding Authority – Contractor Agreement	005200-1 - 005200-3
Document 006110 – Certificate of Corporate Vote of Authorization	006110-1 - 006110-1
Document 006113 – Contractor’s Performance Bond	006113-1 - 006113-2
Document 006114 – Contractor’s Payment Bond	006114-1 - 006114-1

**Part C - Conditions of the Contract**

Document 007000 - General Conditions	007000-1 - 007000- 1
Document 007300- Supplementary Conditions	007300-1 - 007300-32
Document 007343 – Wage Rate Requirements	007343-1 - 007343- 1
Division of Occupational Safety, Prevailing Wage Rates	1-39

**Part D - Specifications****Division 1 - General Requirements**

Section 010450 - Cutting and Patching	010450-1 - 010450-3
Section 013119 - Project Meetings	013119-1 - 013119-2
Section 013300 – Submittal Procedures	013300-1 - 013300-6
Section 015000 - Temporary Facilities and Controls	015000-1 - 015000-4
Section 016000 – Product Requirements	016000-1 - 016000-3
Section 017000 – Execution and Closeout Requirements	017000-1 - 017000-4

**Division 2 – Existing Conditions**

Quincy College

Section 024100 – Demolition 024100-1 - 024100-5

### **Division 6 – Wood, Plastics, and Composites**

Section 061000 – Rough Carpentry 061000-1 - 061000-3

Section 062000 – Finish Carpentry 062000-1 - 062000-3

### **Division 7 - Thermal and Moisture Protection**

Section 079200 – Joint Sealants 079200-1 - 079200-2

### **Division 8 - Openings**

Section 081000 – Doors and Frames 081000-1 - 081000-4

Section 087000 – Door Hardware 087000-1 - 087000-4

Section 088000 – Glazing 088000-1 - 088000-5

### **Division 9 - Finishes**

Section 092116 – Gypsum Board Assemblies 092116-1 - 092116-4

Section 095100 – Acoustical Ceilings 095100-1 - 095100-2

Section 096500 – Resilient Flooring 096500-1 - 096500-3

Section 096800 – Carpet 096800-1 - 096800-4

Section 099123 – Interior Painting 099123-1 - 099123-3

### **Division 10 - Specialties**

Section 101000 – Visual Display Boards 101000-1 - 101000-3

Section 104000 – Identification Devices 104000-1 - 104000-3

Section 104400 – Fire Protection Specialties 104400-1 - 104400-2

### **Division 12 - Furnishings**

Section 123200 – Manufactured Wood Casework 123200-1 - 123200-9

### **Division 22 - Plumbing**

Section 210000 – Fire Protection 210000-1 - 210000-17

Section 220000 - Plumbing (Filed Sub-bid Required) 220000-1 - 220000-28

### **Division 23- Heating, Ventilating, and Air-Conditioning**

Section 230000 - Heating, Ventilation, and Air Conditioning 230000-1 - 230000-16

### **Division 26 - Electrical**

Section 260000 - Electrical (Filed Sub-bid Required) 260000-1 - 260000-26

**End of Document**



DOCUMENT 001100  
ADVERTISEMENT

**INVITATION TO BID**  
CITY OF QUINCY, MASSACHUSETTS  
PURCHASING DEPARTMENT  
1305 HANCOCK ST., QUINCY, MA 02169

Invites sealed bids/proposals for furnishing and delivering to the City of Quincy:

**"SAVILLE HALL INTERIOR ALTERATIONS"**

**QUINCY COLLEGE**  
**QUINCY COLLEGE**

**"FILED SUB CONTRACTORS"**  
**"GENERAL CONTRACTORS"**

**FEBRUARY 7, 2013 @ 11:30A.M.**  
**FEBRUARY 14, 2013 @ 11:30A.M.**

The City of Quincy, on behalf of the Quincy College, invites sealed bids for Filed-sub and General bids for the Saville Interior Alterations at Quincy College, 24 Saville Avenue, Quincy, Massachusetts 02169, in accordance with the documents prepared by the Quincy College Facilities Department.

The project consists of interior alterations to the second floor of Saville Hall to create Classroom, Office, Laboratory and supporting spaces. The work includes demolition, interior partitions, doors, science lab tables and cabinets, plumbing, fire protection, HVAC, electrical work, and interior finishes.

The estimated construction duration will be for 5 months. The estimated construction cost construction is \$250,000.00

<u>Trade Category</u>	<u>Est. Constr. Cost</u>	<u>Trade Category</u>	<u>Est. Constr. Cost</u>
<b>1. Electrical</b>	<b>\$50,000.00</b>	<b>2. Plumbing</b>	<b>\$ 30,000.00</b>

Detailed specifications are available on-line at the City of Quincy's website, [www.quincyma.gov](http://www.quincyma.gov) and also available at the office of the Purchasing Agent, Quincy City Hall, 1305 Hancock Street, Quincy, Massachusetts, 02169, between the hours of 8:30 a.m. and 4:30 p.m. after January 22, 2013 for a non-refundable printing charge of \$100.00.

Bids must be in a sealed envelope. The outside of the sealed envelope is to be clearly marked "**BID ENCLOSED**" with time/date of bid call. Each bid shall be accompanied by a bid security in the amount of five percent (5%) of the total value of the bid in the form of a bid bond or certified/treasurer's check.

A non-mandatory site walk through is scheduled for **January 31, 2013 at 10:00 a.m.** at the second floor of Saville Hall, 24 Saville Avenue, Quincy, Massachusetts 02169.

The successful bidder will be required to conform to the payment of Prevailing Wage Rates, as determined by the Commissioner of Labor & Industries under the provision of M.G.L. Chapter 149, Section 26 to 27D as amended. If applicable, bids shall be in accordance with M.G.L. Chapter 30B, Chapter 149 as amended, and Chapter 30, Sections 39A, 39B and 39F-R.

Forms for the CONTRACTORS QUALIFICATIONS STATEMENT are included for the Division of Asset Management. DCAM Certification in the category of the appropriate trade is required.

Bids will be received at the office of the Purchasing Agent until the time and date stated herein at which time and date they will be publicly opened and read. Late Bids, delivered by mail or in person, will be rejected.

The right is reserved to reject any or all bids or to accept any part of a bid or the one deemed best for the City and waive any informalities in the bidding if it is in the best interest of the City to do so.

Thomas P. Koch, MAYOR

Kathryn R. Hobin, C.P.O.

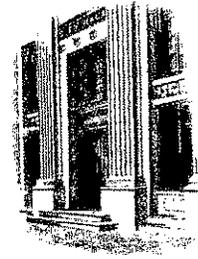
LEGAL: JANUARY 24, 2013  
LEGAL: JANUARY 23, 2013

REQ#: S020713  
CENTRAL REGISTER

DEPT. CHARGED: QUINCY COLLEGE



*City of Quincy*  
City Hall  
1305 Hancock Street  
Quincy, Massachusetts 02169  
*Purchasing Department*



THOMAS P. KOCH  
Mayor

Kathryn R. Hobin  
Purchasing Agent  
Phone: (617) 376-1060  
Fax: (617) 376-1074

*Certificate of Non-Collusion*

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the work "person" shall mean any natural person, business, partnership, corporation, union committee, club or other organization, entity or group of individuals.

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

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

City, Town & Zip: \_\_\_\_\_

Email #: \_\_\_\_\_

Name of Business: \_\_\_\_\_



*CITY OF QUINCY*  
*Purchasing Department*  
*1305 Hancock Street, Quincy, MA 02169*

Phone: 376-1060

Fax: 376-1074

## TAX COMPLIANCE CERTIFICATE

MASS. GENERAL LAWS, CH. 62C, S: 49A(b)

I hereby certify that I have complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding of child support.

Signed under the pains and penalties of perjury.

(1) Individual Contractor

\_\_\_\_\_  
(Contractor's Name and Signature)

Social Security Number

(2) Corporation, Association  
or Partnership

\_\_\_\_\_  
(Contractor's Name)

Federal Tax ID Number, or  
Social Security Number

By:

\_\_\_\_\_  
(Authorized Signature)

Note to Contractor: Please sign at (1) or (2), whichever applies.

---

## CHAPTER 62C. ADMINISTRATIVE PROVISIONS RELATIVE TO STATE TAXATION

### Chapter 62C: Section 49A Certification of compliance with tax laws as prerequisite to obtaining license or governmental contract

Section 49A. (a) Any person applying to any department, board, commission, division, authority, district or other agency of the commonwealth or any subdivision of the commonwealth, including a city, town or district, for a right or license to conduct a profession, trade or business, or for the renewal of such right or license, shall certify upon such application, under penalties of perjury, that he has complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support. Such right or license shall not be issued or renewed unless such certification is made.

(b) No contract or other agreement for the purposes of providing goods, services or real estate space to any of the foregoing agencies shall be entered into, renewed or extended with any person unless such person certifies in writing, under penalties of perjury, that he had complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

(c) Any such agency, which has been notified by the commissioner pursuant to section forty-seven A that a person who holds a license or certificate of authority issued by such agency or who has agreed to furnish goods, services or real estate space to such agency has neglected or refused to file any returns or to pay any tax required under this chapter and that such person has not filed in good faith a pending application for abatement of such tax or a pending petition before the appellate tax board contesting such tax or has been penalized pursuant to section 9 of chapter 62E for failure to comply with the provisions under said chapter 62E relating to reporting of employees and contractors, or has been penalized pursuant to paragraph (3) of subsection (f) of section 12 of chapter 119A for failure to comply with the provisions under said chapter 119A relating to withholding and remitting child support, shall refuse to reissue, renew or extend such license, certificate of authority, contract or agreement until the agency receives a certificate issued by the commissioner that the person is in good standing with respect to any and all returns due and taxes payable to the commissioner as of the date of issuance of said certificate, including all returns and taxes referenced in the initial notification or, if the licensee has been penalized for failure to comply with the provisions relating to reporting of employees and contractors under chapter 62E or withholding and remitting child support under chapter 119A, a certificate issued by the commissioner that the licensee is in compliance with said provisions.

(d) Any person who owns or leases a motor vehicle or trailer that is required to be registered in the commonwealth under chapter 90 and improperly registers the motor vehicle or trailer in another state or misrepresents the place of garaging of the motor vehicle or trailer in another city or town, shall be considered in violation of laws of the commonwealth relating to taxes under chapter 60A, chapter 64H or chapter 64I. The right, license or contract provided for in subsections (a) and (b) shall not be issued or renewed until the person or business entity has paid all taxes due at the time of application for such right, license or contract.

(e) Any person who, for the purpose of evading payment of a tax pursuant to chapters 59 to 64J, inclusive, willfully makes and subscribes any return, form, statement or other document pursuant to subsection (a), (b) or (d) that contains or is verified by a written declaration that is made under the penalties of perjury, and that contains information that he does not believe to be true and correct as to every matter material to his compliance with all laws of the commonwealth relating to taxes, shall be subject to section 73.



CITY OF QUINCY  
Purchasing Department  
1305 Hancock Street, Quincy, MA 02169

Phone: 376-1060

Fax: 376-1074

### SIGNATURE AUTHORIZATION

At a duly authorized meeting of the Board of Directors of the

\_\_\_\_\_ (NAME OF CORPORATION)

held on \_\_\_\_\_, at which all the Directors were present or waived notice, it was  
(DATE)

VOTED, that:

\_\_\_\_\_ (NAME) \_\_\_\_\_ (OFFICER)

of this company, be and he/she hereby is authorized to execute Contracts and Bonds in the name and behalf of said Company, and affix its Corporate Seal thereto, and such execution of any Contract or obligation in this Company's name on its behalf by such \_\_\_\_\_ under seal of the Company, shall be valid  
(OFFICER)

and binding upon this Company. It was further voted that the City of Quincy may rely on such authorization of future Contracts until notified to the contrary.

A true copy,

ATTEST: \_\_\_\_\_  
(CLERK'S SIGNATURE)

PLACE OF BUSINESS: \_\_\_\_\_

DATE OF THIS CONTRACT: \_\_\_\_\_

I hereby certify that I am the Clerk of the:

\_\_\_\_\_ that \_\_\_\_\_ is the  
(COMPANY) (NAME)

duly elected \_\_\_\_\_ of said Company, and that the above VOTE has not been  
(TITLE)

amended or rescinded and remains in full force and effect as of the date of this Contract.

\_\_\_\_\_ CORPORATE SEAL

## INDEMNITY AGREEMENT

In consideration of the award of Contract No. \_\_\_\_\_  
by the City of Quincy, hereinafter referred to as INDEMNITEE, to the CONTRACTOR/BIDDER:  
\_\_\_\_\_

hereinafter referred to as INDEMNITOR, and for other good and valuable consideration, said INDEMNITOR agrees to hold INDEMNITEE, City of Quincy, and its various department and employees harmless from any and all liability, loss or damage that INDEMNITEE may suffer as the result of claims, demands, costs, including attorneys fees, or judgement or other actions against it by reason of any and all work done by or on behalf of the INDEMNITOR in connection with the above-referenced contract.

INDEMNITOR,

\_\_\_\_\_  
By Duly Authorized Agent

Date: \_\_\_\_\_

CERTIFICATION RELATING TO DEBARMENT AND SUSPENSION

The undersigned contractor certifies to the City of Quincy that neither it nor its principals, officers or any affiliated entities has been debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction in accordance with the requirements of OMB Circular A-87 and with Executive Order 12549, "Debarment and Suspension."

Furthermore, the contractor certifies that it shall not make any subcontract or permit any subcontract to be made with any party which is debarred or suspended or is otherwise excluded in accordance with said OMB Circular and with Executive Order 12549.

This certification shall be for the benefit of the City of Quincy and its successors and/or assigns and is binding upon the contractor, its successors and assigned.

Executed under seal this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Contractor Name  
By its duly authorized agent,

Contract Number \_\_\_\_\_

\_\_\_\_\_  
(Authorized Signature)

CERTIFICATION OF GENERAL BIDDERS ON PUBLIC CONSTRUCTION  
PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations application to awards made subject to section 44A.

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

Date: \_\_\_\_\_

\_\_\_\_\_  
Name of General Bidder

By \_\_\_\_\_  
Signature

\_\_\_\_\_  
Print name and title

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
Street Address City and State

CERTIFICATION OF SUB- BIDDERS (IF ANY) ON PUBLIC CONSTRUCTION  
PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupation Safety and Health Administration that is at least ten hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards of subcontracts subject to section 44F.

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under penalties of perjury that this subbid is in all responses bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

Date \_\_\_\_\_

\_\_\_\_\_  
Name of Sub-bidder

By \_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name and Title

\_\_\_\_\_  
Business Name

\_\_\_\_\_  
Street Address, City and State

## REQUIREMENTS FOR MINORITY/WOMEN BUSINESS ENTERPRISE

- I. In this contract, the percentage of business activity to be performed by Minority/Women Business Enterprise(s) shall not be less than the following percentages of the total contract price, or the percentage submitted by the contractor in the Schedule of Participation, whichever is greater.

**Minority Contractors** 10 %

**Women Contractors** 5 %

## II. DEFINITIONS

For the purpose of these provisions, the following terms are defined as follows:

- A. **Agency:** The City of Quincy.
- B. **Bidder:** Any individual, partnership, joint venture, corporation, or firm submitting a price, directly or through an authorized representative, for the purpose of performing construction related activities under a contract.
- C. **Certificate of Work Start-Up:** A letter to be signed by a principal contractor prior to performance of work by Minority and Women Business Enterprises under a Contract (See attached form EEO-390).
- D. **Compliance Unit:** A subdivision of the Agency's Affirmative Action Office designated to ensure compliance under these provisions.
- E. **Contract Compliance Officer:** The person(s) designated by the Agency to assist and make recommendations with respect to compliance with the provisions of this document.
- F. **Contractors:** Any business that contracts or subcontracts for construction, demolition, renovation, survey, or maintenance work in the various classifications customarily used in work and that is acting in this capacity under the subject contract.
- G. **Construction Related Services:** Those services performed at the work site ancillary to, and/or in support of, the construction work, such as hauling, trucking, equipment operation, surveying or other technical services, etc. For the purposes hereof, supply and delivery of materials (e.g. pre-cast concrete elements) to the site by a supplier who has manufactured those goods, or substantially altered them before re-sale shall be considered as "construction related services".

**Construction Work:** The activities at the work site, or labor and use of materials in the performance of constructing, reconstructing, erecting, demolishing, altering, installing, disassembling, excavating, etc., all or part of the work required by the Contract Documents.

- H. Equipment Rental Firm:** A firm that owns equipment and assumes actual and contractual responsibility for renting said equipment to perform a useful function of the work of the contract consistent with normal industry practice.
- I. Grantee:** An agency, person or political subdivision which has been awarded or received financial assistance by the Trust or the Agency.
- K. Joint Venture:** An agreement between SOMWBA certified M/WBE and a non-minority or non-woman, controlled enterprise.
1. A pairing of companies will be considered a MBE or WBE joint venture if the SOMWBA certified M/WBE, which is part of the relationship has more than 51% of the profits that are derived from that project.
  2. A joint venture between a certified M/WBE, subcontractor and a non-M/WBE subcontractor, in which the M/WBE for that proportion joint venture's contract equal to the M/WBE participation in the joint venture.
  3. Whenever a general bid is filed by a joint venture with a certified M/WBE participant in the joint venture that does not exercise more than 51% control over management and profits, that joint venture shall be entitled to credit as a M/WBE for that portion of the joint venture's contract equal to the M/WBE participation in the joint venture Minority. As deemed by SOMWBA.
- L. Letter of Intent:** Certified document signed by the principal(s) of the Minority or Women Business Enterprise with respect to the work to be performed under the contract.
- M. Local Government Unit:** A City, Town, or municipal district which applies for a loan or grant from a State or Federal Agency.
- N. Material Supplier:** A vendor certified by SOMWBA as a M/WBE in sales to supply industry from an established place of business or source of supply, and that vendor.
1. Manufacturers goods from raw materials, or substantially utilizes them in the work, or substantially alters them before resale, entitling the general contractor to M/WBE credit for 100% of the purchase order.

2. Provides and maintains a storage facility for materials utilized in the work, entitling the general contractor to M/WBE credit for 100% of the purchase order.
- O. M/WBE Quarterly Activity Report:** A letter to be signed by a principal contractor with respect to certain work performed by Minority and Women Business Enterprises under a Contract (See Attached Form EEO-290).
- P. Minority and Women Business Enterprise (M/WBE):** Any business concern certified by SOMWBA as a bona fide M/WBE. A bona fide M/WBE is a business whose minority group or women ownership interests are real, which have at least 51% ownership and control over management and operations.
- Q. Percent of Total Price:** Is the percentage to be paid to the M/WBE, work they perform, as compared to the total bid price.
- R. SOMWBA:** The State Office of Minority and Women Business Assistance.
- S. Total Contract Price:** The total amount of compensation to be paid for all materials, work or services rendered in the performance of the contract.

### III. REQUIREMENTS FOR CONTRACT AWARD

- A. As part of the contract bid documents, the contractor shall submit a schedule with accompanying letters of intent on the appropriate forms (see forms EEO-190 and EEO 191). The letter of intent shall include, among other things, a reasonable description of the work the M/WBE is proposing to perform and the prices the M/WBE proposes to charge for the work.

A letter of intent shall be jointly signed by the M/WBE and the primary contractor who proposes to use them in the performance of the Contract. The schedule shall list the M/WBEs with whom the contractor intends to subcontract and state the total price to be paid to each M/WBE as taken from each letter for intent submitted under this subsection.

- B. As part of the bid proposal, the bidder shall submit a **Schedule of Participation** on the form attached and shall list those M/WBEs the contractor intends to use in fulfilling the contract obligations, the nature of the work to be performed by each M/WBE subcontractor and the total price they are to be paid.
1. A listing of bona fide service such as a professional, technical, consultant or managerial services, assistance in the procurement of essential personnel, facilities,

equipment, materials, or supplies required for performance of the Contract and reasonable fees or commissions charged.

2. A listing of haulers, truckers, or delivery services, not the contractors, including reasonable fees for delivery of said materials or supplies to be included on the project.

- C. As part of the contract bid documents, the contractor shall submit the SOMWBA "Minority and Women Certification" as prepared by each M/WBE.

#### **IV. REQUIREMENTS FOR MODIFICATION OR WAIVERS**

The bidder shall make every possible effort to meet the minimum requirements of M/WBE participation. If the percentage goals of M/WBE participation submitted by the bidder on its Schedule of Participation (EEO-190) does not meet the minimum requirements, the bid may be rejected and/or found not to be eligible for award of the contract, unless the bidder is granted a waiver pursuant to this section.

In the event that a bidder is unable to meet the minimum M/WBE percentage goals, the bidder may submit a Request for Waiver (EEO-490). The Agency in conjunction with the project manager, Affirmative Action and Compliance Unit, will make an assessment of the bidder's application for a waiver.

Within five (5) working days following the bid opening, the bidder must submit by registered mail to the Agency detailed information as specified below to establish that they have made a good faith effort to comply with the percentage goals specified in EEO-190. In addition, the bidder must show that such efforts were undertaken will in advance of the time set for the opening of the bids to allow adequate response. If the information and documentation demonstrates that despite such efforts the bidder was/is unable to meet the M/WBE participation requirements, a waiver request may be submitted which provides the following:

- A. A detailed record of the effort made to contract and negotiates with minority and/or women businesses, including:
  1. Names, addresses and telephone numbers of all such companies contacted;
  2. Copies of written notice(s) which were sent to M/WBE potential subcontractors, prior to bid opening;
  3. A detailed statement as to why each subcontractor contacted (i) was not willing to do the job or (ii) was not qualified to perform the work as solicited; and
  4. In the case(s) where a negotiated price could not be reached, the bidder should detail

what efforts were made to reach an agreement on a competitive price;

5. Copies of advertisement, dated not less than ten days prior to bid opening date, as appearing in general publications, trade oriented publications, and applicable minority/women-focuses media detailing the opportunities for participation.
- B. The Agency may require the bidder to produce such additional information as it deems appropriate.
  - C. No later than fifteen (15) days after submission of all required information and documentation, a decision as to whether a waiver will be granted will be made in writing to the bidder. If the waiver request is denied, the facts upon which a denial is based will be set forth in writing. A bidder, who is dissatisfied with the decision, may appeal that decision.
  - D. If it is determined that one or more of the M/WBE contractors submitted by the bidder on form EEO-190 is not SOMWBA certified, the bidder shall have ten (10) working days, following notification to either find a certified M/WBE to perform work equal to or greater than that of the uncertified contractor or to submit a required for waiver pursuant to this section.

## V. M/WBE PARTICIPATION

- A. Reporting Requirements
  1. The contractor is required to submit Quarterly M/WBE Activity Report within ten (10) days following the reporting period. These reports shall include all minority and women businesses performing work on the project during the reporting period (See Attached Form EEO-290). For auditing and accounting purposes, the General Contractor periodically may be required to submit copies of canceled checks verifying that payment shave been made to the M/WBE as listed on the schedule.
  2. The contractor is required to submit a completed **Certificate of Work Start-Up** by Minority and Women Business Enterprise within ten (10) days of work start-up for each M/WBE identified in the "Schedule of Participation of MBEs and WBEs or working on the contract activity. The form must be signed by both the contractor and the M/WBE prior to submittal to the Agency. (See attached Form EEO-390).
  3. The contractor shall not perform any work designated for the named M/WBE on the Schedule submitted under Part I hereof, with it's own organization or subcontractor(s) or any other contractor, without the prior written approval of the Agency.
  4. During the life of the contract, the contractor's fulfillment of the percentage requirements in Part I shall be determined with reference to the contract price as

follows:

- a. If the price in the contract executed exceeds the base bid price (e.g. because an alternate was selected or because unit prices were used in awarding the contract), the contractor shall submit for approval by the agency a revised Schedule of Participation by MBEs and WBEs satisfying the percentage requirements and such other information concerning additional M/WBE participation as may be requested by the Agency.
- b. If the contract price increases after execution due to change orders or other adjustments, the Agency may require the contractor to subcontract additional work to or to purchase additional goods and services from MBEs and WBEs up to the percentages stated in Part I.

## **VI. COMPLIANCE**

- A. If the Schedule or any of the Letters of Intent are materially incomplete, the Local Government Unit may rescind its vote of award; treat the bid informal as to substance and reject the bid. If the bid is incomplete in any other respect than the Schedule, the Local government Unit, with the approval of the Agency may waive the informalities upon satisfactory completion of the required information by the Contractor and the M/WBE, as applicable.
- B. If the Local Government Unit finds that the percentage of M/WBE participation submitted by the contractor on its Schedule does not meet the requirements in Part I, it may rescind its vote of award and find such contractor not to be eligible for award of the contract.
- C. The contractor shall not perform with its own organization, or subcontract to any other primary or subcontractor any works designated for the names M/WBEs on the schedule submitted by the prime contractor under Part III without the approval of the Agency.
- D. A contractor's compliance with the percentage requirements in Part I shall continue to be determined by reference to the required percentage of the total contract price as stated in Section I, even though the total of actual contract payments may be greater or less than the bid price.
- E. If the general contractor, for reasons beyond its control, cannot comply with Part III, in accordance with the Schedule submitted under Part III, section B, the contractor must submit to the Compliance Unit as soon as they are aware of the deficiency, the reason for its inability to comply.

Proposed revisions to the Schedule stating how the contractor intends to meet its obligations under these conditions must be submitted within ten (10) working days of notification.

- F. Any change or substitution of the officers or stockholders in an M/WBE organization that reduces the ownership or control to fewer than 51% by minority person(s)/Women or less than the requisite percentage shall be grounds for immediate rescission of the M/WBE status. Contractor's compliance with this special provision obligation will be considered terminated immediately upon notification that the M/WBE designation has been rescinded, and the Contractor shall proceed by notifying SOMWBA and the Compliance Unit as stated above in subsection (C).
- G. If an M/WBE listed by the general bidder in its Schedule of M/WBE contractors fails to obtain a performance or payment bond requested by the general bidder, said failure shall not entitle the bidder to avoid the requirements of Part III (A). After a general bidder has been awarded to contract, he shall not change the M/WBE listed in its Schedule at the time of award or make any other such substitution without the written approval of the Agency.
- H. The contractor and the M/WBEs shall comply with all reporting requirements of the Compliance Unit to demonstrate ongoing compliance with the Schedule of Participation and the Letters of Intent.

## **VII. EQUAL EMPLOYMENT OPPORTUNITY FOR THE HANDICAPPED**

The contractor shall comply with the provisions of the Executive Order No. 143 entitled "Equal Employment Opportunity for the Handicapped" which is herein incorporated by reference and made a part of this contract. In connection with the performance of work under this contract, the contractor, sub-contractors and suppliers of goods and services must give written notice of their commitments under this Article to any Labor Union, association or brotherhood with which they have a collective bargaining contract or other agreement. A copy of such notice must be furnished to the Grantee at the time of signing of the contract.

## **VIII SANCTIONS**

- A. If the contractor does not comply with the terms of these Special Provision, the Awarding Authority may (1) suspend any payment for the work that should have been performed by a M/WBE pursuant to the schedule, or (2) require specific conformance of the contractor's obligations by requiring the contractor to subcontract with a M/WBE for any contract or specialty item at the contract price established for that item in the proposal submitted by the Contractor.
- B. To the extent that the contractor has not complied with the terms of these Special Provisions, the Awarding Authority may retain in connection with Estimates and Payments an amount determined by multiplying the bid price of this contract by the percentage in Section I, less the amounts paid to M/WBEs for work performed under the contract and any payments already suspended under VIII A.

- C. In addition or as an alternative, to the remedies under VIII-A and B, the Awarding Authority may suspend, terminate or cancel this contract, in whole or in part, or may call upon the contractor's surety to perform all terms and conditions in the contract, unless the contractor is able to demonstrate his compliance with the terms of these Special Provision, and further deny to the contractor, the right to participate in any future contracts awarded by the Awarding Authority for a period of up to three years.
- D. In any proceeding involving the imposition of sanctions by the Awarding Authority, no sanctions shall be imposed if the Awarding Authority finds that the contractor has taken every possible measure to comply with these

Special Provisions or that some other justifiable reason exists for waiving these Special Provisions in whole or in part.

- E. The contract shall provide such information as is necessary in the judgement of the Awarding Authority to ascertain its compliance with the terms of these Special Provisions.

#### **IX. HEARINGS AND APPEALS**

- A. No sanctions under Section VIII shall be imposed by the Awarding Authority except in an adjudicatory proceeding under Chapter 30A of the Mass. General Laws.
- B. A contractor shall have the right to request suspension of any sanctions imposed under Section VIII upon demonstrating that he is in compliance with these Special Provisions.

**SCHEDULE OF PARTICIPATION  
MINORITY AND WOMEN BUSINESS ENTERPRISE**

**ITEM I - Minority Business Enterprise Participation in the Works**

Name and Address of MBE	Nature of Participation	Dollar Value of Participation
-------------------------	-------------------------	-------------------------------

---

1. \_\_\_\_\_

---

2. \_\_\_\_\_

---

	Total MBE Commitment:	_____
Percentage MBE Participation ( <u>Total Commitment</u> )	(Total Bid Price) =	_____

**ITEM II - Women's Business Enterprise Participation in the Works**

Name and Address of WBE	Nature of Participation	Dollar Value of Participation
-------------------------	-------------------------	-------------------------------

---

1. \_\_\_\_\_

---

2. \_\_\_\_\_

---

	Total WBE Commitment:	_____
Percentage WBE Participation ( <u>Total Commitment</u> )	(Total Bid Price) =	_____

The bidder agrees to furnish implementation reports as required by the Awarding Authority to indicate the M/WBE which it has used or intends to use. Breach of this commitment constitutes a breach of contract.

Name of General Bidder: \_\_\_\_\_

Date: \_\_\_\_\_ By: \_\_\_\_\_  
(Signature)

Note: Participation of a minority-owned or women-owned enterprise may be counted in only one category; the same participation cannot be used in computing the percentage of the Minority Participation and again of Women Participation.

**THIS FORM MUST BE SUBMITTED WITH THE BID.**

**LETTER OF INTENT - MINORITY BUSINESS ENTERPRISE**

This form is to be completed by the MBE and must be submitted by the General Contractor as part of the bid proposal. A separate form must be completed for each MBE and WBE involved in the project.

**Project Title:** \_\_\_\_\_ **Project Location:** \_\_\_\_\_.

**TO:** \_\_\_\_\_  
(Name of Bidder)

**FROM:** \_\_\_\_\_  
(Name of MBE)

I/We intend to perform work in connection with the above project as:

- an individual                       a partnership  
 a corporation                       a joint venture with \_\_\_\_\_  
 other (explain): \_\_\_\_\_.

It is understood that if you are awarded the contract, you intend to enter into an agreement to perform the activity described below for the prices indicated.

**MBE Participation**

Description of Activity	Project Date Commencement	\$ Amount	% of Bid Price
-------------------------	------------------------------	-----------	----------------

The undersigned certify that they will enter into a formal agreement upon execution of the contract for the above referenced project.

**BIDDER**

**MBE**

\_\_\_\_\_  
(Authorized Signature)      DATE

\_\_\_\_\_  
(Authorized Signature)      DATE

ADDRESS: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: ( ) \_\_\_\_\_

PHONE: ( ) \_\_\_\_\_

**\*\*\*\*Copy of SOMWBA Certification Letter Must Be Attached and Submitted with Bid.**

**LETTER OF INTENT – WOMEN’S BUSINESS ENTERPRISE**

This form is to be completed by the WBE and must be submitted by the General Contractor as part of the bid proposal. A separate form must be completed for each MBE and WBE involved in the project.

**Project Title:** \_\_\_\_\_ **Project Location:** \_\_\_\_\_

**TO:** \_\_\_\_\_  
(Name of Bidder)

**FROM:** \_\_\_\_\_  
(Name of WBE )

- I/We intend to perform work in connection with the above project as:
  - an individual                       a partnership
  - a corporation                       a joint venture with \_\_\_\_\_.
  - other (explain): \_\_\_\_\_.

- It is understood that if you are awarded the contract, you intend to enter into an agreement to perform the activity described below for the prices indicated.

**WBE Participation**

Description of Activity	Project Date Commencement	\$ Amount	% of Bid Price
-------------------------	------------------------------	-----------	----------------

The undersigned certify that they will enter into a formal agreement upon execution of the contract for the above referenced project.

**BIDDER**

**WBE**

\_\_\_\_\_  
(Authorized Signature)      DATE

\_\_\_\_\_  
(Authorized Signature)      DATE

ADDRESS: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: ( ) \_\_\_\_\_

PHONE: ( ) \_\_\_\_\_

**\*\*\*\*Copy of SOMWBA Certification Letter Must Be Attached and Submitted with Bid.**

**REQUEST FOR WAIVER  
MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION**

Upon exhausting all known sources and making every possible effort to meet the minimum requirements for MBE/WBE participation, the Contractor may seek relief from these requirements by filing this form (completed) **NO LATER THAN FIVE (5) WORKING DAYS** following the bid opening. Failure to comply with this process shall be cause to reject the bidder, thereby rendering the contractor not eligible for award of the contract.

General Information

Project Title: \_\_\_\_\_ Project location: \_\_\_\_\_

Bid Opening (time/date): \_\_\_\_\_ Location: \_\_\_\_\_

Bidder: \_\_\_\_\_

Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone Number: (\_\_\_\_) \_\_\_\_\_ Ext. \_\_\_\_\_

Minimum Requirements

The contractor must show that good faith efforts were undertaken to comply with the percentage goals as specified. The bidder seeking relief must show that such efforts were taken appropriately in advance of the time set for opening bid proposals to allow adequate time for response(s) by submitting the following:

- A. A detailed record of the effort made to contact and negotiate with minority and/or woman owned businesses, including:
  - 1. Names, addresses and telephone numbers of all such operations contacted;
  - 2. copies of written notice(s) which were sent to MBE/WBE potential subcontractors prior to bid opening;
  - 3. copies of advertisements prior to bid opening as appearing in general publications, trade-oriented publications, and applicable minority/women focus media detailing the opportunities for participation;
  - 4. a detailed statement as to why each subcontractor contacted (i) was not willing to do the job or (ii) was not qualified to perform the work as solicited; and
  - 5. in the case(s) where a negotiated price could not be reached, the bidder should detail what efforts were made to reach an agreement on a competitive price.
  
- B. The Agency may require the contractor to produce such additional information as it deems appropriate and may

obtain whatever other information it deems necessary to reach a conclusion from any source.

- C. No later than fifteen (15) days after receipt of all necessary information and documentation, a decision will be made in writing to the bidder. If the waiver request is denied, the facts upon which a denial is based will be set forth. A contractor who is dissatisfied with the decision may then appeal that decision to the EOE.

Special Note:

If it is determined that one or more of the MBE/WBE contractors, as submitted by the contractor on form EEO-190, is not SOMWBA certified by the Local Government Unit in accordance with the provision of Executive Order 237, the bidder shall have ten (10) working days, following notification to either find a certified MBE/WBE contractor to perform work equal to or greater than that of the uncertified contractor or submit a waiver request.

**CERTIFICATION**

The undersigned herewith certifies that the above information and appropriate attachments are true and accurate to the best of my ability and that I have been authorized to act on behalf of the bidder in this matter.

\_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(DATE)

**CERTIFICATE OF WORK START-UP  
BY MINORITY/WOMEN BUSINESS ENTERPRISE**

This form is to be submitted to the Project Administrator and the MBE Compliance Coordinator within ten (10) days after commencing work by the MBE or WBE. A separate form must be filed for each MBE/WBE involved in the project. Be sure to indicate whether this form is being filed in accordance with the original or a revised schedule of participation.

Contract # \_\_\_\_\_ Date: \_\_\_\_\_, 20\_\_\_\_\_.

Contract Title: \_\_\_\_\_ Project Location: \_\_\_\_\_.

General Contractor: \_\_\_\_\_.

Subcontractor: \_\_\_\_\_.

(Please indicate  MBE or  WBE)

**DESCRIPTION OF MBE/WBE WORK (LETTER OF INTENT)**

Description of Activity and Total Participation\*

MBE/WBE Work to Commence on \_\_\_\_\_ MBE/WBE Amount: \$ \_\_\_\_\_.

Original Schedule OR  Revised Schedule, dated \_\_\_\_\_.

If the work start up date or description of activity are different from that listed on the Letter of Intent or Contract, please explain: (if more space is needed continue on back of sheet).

I hereby certify that all work listed in the Contract/Letter of Intent (or approved changes thereto as explained above) will/have commence(d) on

\_\_\_\_\_, 20\_\_\_\_\_ and that the above amount of these services is the true amount.

**General Contractor**

**Sub-Contractor**

\_\_\_\_\_  
(Authorized Original Signature)                      Date

\_\_\_\_\_  
(Authorized Original Signature)                      Date

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

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

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

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

Tel.#:(\_\_\_\_\_) \_\_\_\_\_

Tel.#:(\_\_\_\_\_) \_\_\_\_\_

INDICATE STATUS  MBE OR  WBE

\*Attach a copy of the Letter of Intent.

# QUARTERLY MBE/WBE ACTIVITY REPORT

## REPORTING PERIOD

Contract Title: \_\_\_\_\_ Project Location: \_\_\_\_\_

General Contractor: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Tel.#:(\_\_\_\_)

Subcontractor: \_\_\_\_\_  
(Please indicated [ ] MBE or [ ] WBE)

Contact Person: \_\_\_\_\_ Tel.#:(\_\_\_\_)

Compliance Manager (City/Town project location):

Address: \_\_\_\_\_ Tel.#:(\_\_\_\_)

### CONTRACT BILLING THIS QUARTER

Amount Billed by General Contractor during Quarter: \$ \_\_\_\_\_

Amount Billed by [ ] MBE or [ ] WBE during Quarter: \$ \_\_\_\_\_

### CONTRACT BILLING TO DATE

Total Amount Billed by General Contractor to Date: \$ \_\_\_\_\_

Total Amount Billed by the [ ] MBE or [ ] WBE to Date \$ \_\_\_\_\_

### PAYMENT INFORMATION

Total payments made to [ ] MBE or [ ] WBE during Quarter \$ \_\_\_\_\_

Total payments made to [ ] MBE or [ ] WBE to Date: \$ \_\_\_\_\_

Discuss any problems, adjustments or major milestones encountered during the reporting period (if more space is needed, use the back of the sheet):

**CITY/TOWN COMPLIANCE MANAGER**

**GENERAL CONTRACTOR**

\_\_\_\_\_  
(Authorized Original Signature) Date

\_\_\_\_\_  
(Authorized Original Signature)

Tel.# (\_\_\_\_) \_\_\_\_\_ Tel.(\_\_\_\_) \_\_\_\_\_

Separate form must be filed for each MBE and WBE involved in the project. Submit copies of canceled checks to the MBE/WBE with this report.

**MINORITY BUSINESS ENTERPRISE/WOMEN'S BUSINESS ENTERPRISE  
CONTRACT COMPLETION VERIFICATION**

Within thirty (30) days of submission by the General Contractor of the Final Pay Estimate, verification of all MBE/WBE participation in the Contract must be submitted to the City.

This form must be completed (Original Signatures only) and forwarded to the City's Contract Compliance Officer (DPW Administrative Assistant), 55 Sea Street, Quincy, MA 02169.

\*\*\*\*\*

**OWNER**

Name of Owner	Contract Name/Number
(Authorized Representative Name)	(Title)

\*\*\*\*\*

**GENERAL CONTRACTOR**

Company Name	( ) Telephone Number	Contract Name/Number
Street Address	Contract Acceptance Date	
City/Town	Zip Code	\$ Contract Bid Amount

\*\*\*\*\*

**(Circle One)    MBE    WBE    SUBCONTRACTOR**

Company Name	\$ Subcontract Amount	/ / 1st Payment Date
Street Address	\$ Total Received	/ / Last Payment Date
City/Town	Zip Code	( ) Telephone Number

Signature - Title

\*\*\*\*\*

Use separate copies of this form for each MBE/WBE contractor.

**SPECIAL NOTICE TO AWARDING AUTHORITY  
BIDDERS' UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND  
ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)**

**Commonwealth of Massachusetts**  
**Division of Capital Asset Management**

**PRIME/GENERAL CONTRACTOR**  
**UPDATE STATEMENT**

**TO ALL BIDDERS AND AWARDING AUTHORITIES**

A COMPLETED AND SIGNED PRIME/GENERAL CONTRACTOR UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY PRIME/GENERAL BID FOR A CONTRACT PURSUANT TO M.G.L. c.149, §44A AND M.G.L. c. 149A. ANY PRIME/GENERAL BID SUBMITTED WITHOUT AN APPROPRIATE UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.

*Caution: This form is to be used for submitting Prime/General Contract bids. It is not to be used for submitting Filed Sub-Bids or Trade Sub-Bids.*

**AWARDING AUTHORITIES**

If the Awarding Authority determines that the bidder does not demonstrably possess the skill, ability, and integrity necessary to perform the work on the project, it must reject the bid.

---

**BIDDER'S AFFIDAVIT**

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Prime/General Contractor Update Statement on behalf of the bidder named below, that I have read this Prime/General Contractor Update Statement, and that all of the information provided by the bidder in this Prime/General Contractor Update Statement is true, accurate, and complete as of the bid date.

[Enter Bid Date Here]  
Bid Date

[Enter Name of Prime/General Contractor Here]  
Name of Prime/General Contractor

[Enter Project Number Here]  
Project Number (or  
name if no number)

[Enter Business Address Here]  
Business Address

[Enter Name of Awarding Authority Here]  
Awarding Authority

[Enter Your Telephone Number Here]  
Telephone Number

**SIGNATURE⇒**

\_\_\_\_\_  
Bidder's Authorized Representative

# INSTRUCTIONS

## INSTRUCTIONS TO BIDDERS

- This form must be completed and submitted by all Prime/General contractors bidding on projects pursuant to M.G.L. c. 149, §44A and M.G.L. c. 149A.
- You must give complete and accurate answers to all questions and provide all of the information requested. **MAKING A MATERIALLY FALSE STATEMENT IN THIS UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.**
- Information is to cover the period from the date your most recent annual Certificate of Eligibility was issued (not extended) to the date of the bid.
- You must use this official form of Update Statement. Copies of this form may be obtained from the awarding authority and from the Asset Management Web Site: [www.mass.gov/cam](http://www.mass.gov/cam)
- If additional space is needed, please copy the appropriate page of this Update Statement and attach it as an additional sheet.
- See the section entitled "Bidding Limits" in the *Instructions to Awarding Authorities* for important information concerning your bidding limits.

## INSTRUCTIONS TO AWARDING AUTHORITIES

### *Determination of Bidder Qualifications*

- It is the awarding authority's responsibility to determine who is the lowest eligible and responsible bidder. You must consider all of the information in the low bidder's Update Statement in making this determination. Remember: this information was not available to the Division of Capital Asset Management at the time of certification.
- The bidder's performance on the projected listed in Parts 1 and 2 must be part of your review. Contact the project references.
- **AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE LOW BIDDER'S ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT. Telephone (617) 727-9320 for an appointment.**

### *Bidding Limits*

Single Project Limit: The total amount of the bid, including all alternates, may not exceed the bidder's Single Project Limit.

Aggregate Work Limit: The annual value of the work to be performed on the contract for which the bid is submitted, when added to the annual cost to complete the bidder's other currently held contracts, may not exceed the bidder's Aggregate Work Limit. Use the following procedure to

determine whether the low bidder is within its Aggregate Work Limit:

Step 1 Review Update Statement Question #2 to make sure that all requested information is provided and that the bidder has accurately calculated and totaled the annualized value of all incomplete work on its currently held contracts (column 9).

Step 2 Determine the annual dollar value of the work to be performed on your project. This is done as follows:

- (i) If the project is to be completed in less than 12 months, the annual dollar value of the work is equal to the full amount of the bid.
- (ii) If the project will take more than 12 months to complete, calculate the number of years given to complete the project by dividing the total number of months in the project schedule by 12 (calculate to 3 decimal places), then divide the amount of the bid by the calculated number of years to find the annual dollar value of the work.

Step 3 Add the annualized value of all of the bidder's incomplete contract work (the total of column 9 on page 5) to the annual dollar value of the work to be performed on your project. **The total may not exceed the bidder's Aggregate Work Limit.**

### *Correction of Errors and Omissions in Update Statements*

Matters of Form: An awarding authority shall not reject a contractor's bid because there are mistakes or omissions of form in the Update Statement submitted with the bid, provided the contractor promptly corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 4.09(1)].

Correction of Other Defects: An awarding authority may, in its discretion, give a contractor notice of defects, other than mistakes or omissions of form, in the contractor's Update Statement, and an opportunity to correct such defects, provided the correction of such defects is not prejudicial to fair competition. An awarding authority may reject a corrected Update Statement if it contains unfavorable information about the contractor that was omitted from the Update Statement filed with the contractor's bid. [810 CMR 4.09(2)].

**PART 1 - COMPLETED PROJECTS**

LIST ALL PUBLIC AND PRIVATE BUILDING PROJECTS YOUR FIRM HAS COMPLETED SINCE THE DATE YOUR CURRENT CERTIFICATE OF ELIGIBILITY WAS ISSUED (NOT EXTENDED).\*

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED
[Enter Project Title & Location Here]	[Enter Work Category]	[Enter Contract Price]	[Enter Start Date]	[Date Completed]
[Enter Project Title & Location Here]	[Enter Work Category]	[Enter Contract Price]	[Enter Start Date]	[Date Completed]
[Enter Project Title & Location Here]	[Enter Work Category]	[Enter Contract Price]	[Enter Start Date]	[Date Completed]
[Enter Project Title & Location Here]	[Enter Work Category]	[Enter Contract Price]	[Enter Start Date]	[Date Completed]
[Enter Project Title & Location Here]	[Enter Work Category]	[Enter Contract Price]	[Enter Start Date]	[Date Completed]
[Enter Project Title & Location Here]	[Enter Work Category]	[Enter Contract Price]	[Enter Start Date]	[Date Completed]

Attach additional sheets if necessary

\* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain:



PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		
	OWNER:		
	DESIGNER:		
	GC:		

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship?  YES  NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  YES  NO

If you have answered YES to either question, explain:

### PART 3 - PROJECT PERFORMANCE

Please answer the following questions. Information is to cover the period from the date your current Certificate of Eligibility was issued to the bid date.

If you answer YES to any question, on a separate page provide a complete explanation. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.].

	YES	NO
A. Has your firm been terminated on any contract prior to completing its work?	<input type="checkbox"/>	<input type="checkbox"/>
B. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion?	<input type="checkbox"/>	<input type="checkbox"/>
C. Has your firm failed or refused to complete any punchlist work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
D. Has your surety taken over or been asked to complete any of your work under any contract?	<input type="checkbox"/>	<input type="checkbox"/>
E. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?	<input type="checkbox"/>	<input type="checkbox"/>
F. Has any subcontractor filed a demand for direct payment with an awarding authority on a public project for any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
G. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic's lien against property in connection with work performed or materials supplied under any of your contracts?	<input type="checkbox"/>	<input type="checkbox"/>
H. Have there been any deaths of employee or others occurring in connection with any of your projects?	<input type="checkbox"/>	<input type="checkbox"/>
I. Has any employee or other person suffered an injury resulting in complete disability in excess of thirty working days in connection with any of your projects?	<input type="checkbox"/>	<input type="checkbox"/>

### PART 4 - LEGAL PROCEEDINGS

Please answer the following questions. Information is to cover the period from the date your current Certificate of Eligibility was issued to the bid date.

The term "Administrative Proceeding" as used in this Update Statement includes (i) any action or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code or other legal requirement, except for those brought in state or federal courts, and (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal requirement.

If you answer YES to any question, on a separate page provide a complete explanation of each proceeding and any judgement or decision. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgement or decision was entered, fines or penalties imposed, etc.).

	YES	NO
A. Have any judicial proceedings (other than criminal proceedings) been brought or concluded adversely against your firm or a principal or officer of your firm relating to the procurement or performance of <b>any</b> construction contract, including actions to obtain payment brought by subcontractors, suppliers or others?	<input type="checkbox"/>	<input type="checkbox"/>
B. Have any criminal proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to any of the following offenses: graft, embezzlement, forgery, bribery, falsification or destruction of records, receipt of stolen property or environmental offenses?	<input type="checkbox"/>	<input type="checkbox"/>
C. Have any judicial or administrative proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to a violation of state or federal antitrust laws arising out of the submission of bids or proposals?	<input type="checkbox"/>	<input type="checkbox"/>
D. Have any judicial or administrative proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to a violation of state or federal laws regulating campaign contributions?	<input type="checkbox"/>	<input type="checkbox"/>
E. Have any judicial or administrative proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to a violation of chapter 268A of the Massachusetts General Laws?	<input type="checkbox"/>	<input type="checkbox"/>
F. Have any judicial or administrative proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to a violation of any state or federal law regulating prevailing wages?	<input type="checkbox"/>	<input type="checkbox"/>
G. Have any judicial or administrative proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to a violation of any state or federal law regulating hours of labor, minimum wages, overtime pay, equal pay, child labor or worker's compensation?	<input type="checkbox"/>	<input type="checkbox"/>
H. Have any judicial or administrative proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to a violation of any state or federal law prohibiting discrimination in employment?	<input type="checkbox"/>	<input type="checkbox"/>
I. Have any judicial or administrative proceedings been brought or concluded adversely against your firm or a principal or officer of your firm relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations or occupational health or safety?	<input type="checkbox"/>	<input type="checkbox"/>
J. Have any proceedings been brought by any state or federal agency to debar or suspend your firm or any principal or officer of your firm from public contracting?	<input type="checkbox"/>	<input type="checkbox"/>
K. Has your firm been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety?	<input type="checkbox"/>	<input type="checkbox"/>

**PART 5 - SUPERVISORY PERSONNEL**

List all supervisory personnel, such as project managers and superintendents, who will be assigned to the project if your firm is awarded the contract. **Attach the resume of each person listed below.**

NAME	TITLE OR FUNCTION

**PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION**

Have there been any changes in your firm's business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued?  Yes  No  
**If YES, attach a separate page providing complete details.**

**DOCUMENT 003100**

**SUB BID FORM**

Date \_\_\_\_\_

To: City of Quincy  
Purchasing Department  
1305 Hancock Street  
Quincy, MA

A. The Undersigned, (hereinafter called the Contractor), proposes to furnish all labor and materials required for the Saville Hall Interior Alterations at Quincy College in Quincy, Massachusetts in accordance with the accompanying plans and specifications prepared by Quincy College for the amounts listed below, subject to additions and deductions in accordance with the terms of the specifications.

B. This Bid includes Addenda:

---

***Schedule of Addenda***

---

<b><i>Number</i></b>	<b><i>Date</i></b>

C. The proposed contract amount is:

**Dollars, (\$ \_\_\_\_\_ )**

D. This sub-bid

[ ] may be used by any general bidder except:

---



---



---



---

[ ] may only be used by the following general bidders:

---



---



---



---

[To exclude general bidders, insert "X" in one box only and fill in blank following that box. Do not answer C if no general bidders are excluded.]

- E. The undersigned agrees that, if selected as a sub-bidder, they will, within five days (Saturdays, Sundays, and legal holidays excluded), after presentation of a subcontract by the general bidder selected as the general contractor, execute with such general bidder a subcontract in accordance with the terms of this sub-bid, and contingent on the execution of the general contract and, if requested to do so in the general bid by such general bidder, who shall pay the premiums, furnish a performance and payment bond of a surety company qualified to do business under the laws of the commonwealth and satisfactory to the awarding authority, in the full sum of the subcontract price.
- F. The undersigned submits the following list for the names of all persons, firms, and corporations furnishing labor or labor and materials for the class, classes, or parts of work for which the provisions of the section of the specifications for this sub-trade require a listing in this paragraph, including the undersigned if customarily furnished by persons on own payroll and in the absence of a contrary provision in the specification the name of each such class of work or part and the bid price for such class of work or part are:

NAME	CLASS OF WORK	BID PRICE
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	\$

(Do not give bid price for any class or part furnished by the undersigned).

- G. The undersigned agrees that the above list of bids of the undersigned represents bona fide bids based on described plans, specifications and addenda, and that, if the undersigned is awarded the contract, they will be used for the work indicated at the amounts stated, if satisfactory to the awarding authority.
- H. The undersigned further agrees to be bound to the general contractor by the terms of the hereinbefore described plans, specifications, including all general conditions stated therein, and addenda, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the owner.

I. The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all the requirements of the plans and specifications:

- 1. Have been in business under present business name for \_\_\_\_\_ years.
- 2. Ever failed to complete any work awarded? \_\_\_\_\_
- 3. List one or more recent buildings with names of general contractor and architect on which you served as sub-contractor for work of similar character as required for the above-named building.

Building	Architect	General Contractor	Amount of Contract
(a)	_____	_____	_____
(b)	_____	_____	_____
(c)	_____	_____	_____

4. Bank reference: \_\_\_\_\_.

J. The undersigned hereby certifies it can furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that it will comply fully with all laws and regulations applicable to awards of sub-contracts subject to M.G.L. c.149, §44F.

The undersigned certifies under the penalties of perjury that this sub-bid is in all respects bona fide, fair, and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean natural person, joint venture, partnership, corporation, or other business or legal entity. The undersigned further certifies under penalty of perjury that the undersigned is not currently debarred from doing public construction work in the commonwealth under the provisions of M.G.L. c.29, §29F, or any other applicable debarment provisions of any other chapter of the General Laws, or any rule or regulation promulgated thereunder.

In submitting this bid, the undersigned understands and acknowledges that the Owner reserves the right and authority to reject any or all bids, or any part thereof, and/or to waive any informalities in the bidding if it is deemed by the Owner to be in the public interest to do so. The undersigned further understands and acknowledges that pursuant to such right and authority, the Owner may, for example reject the bid of any Bidder which has exhibited a pattern or tendency of failing to complete projects in a timely manner or to comply with applicable laws such as the Occupational Safety and Health Act of 1970, 29 U.S.C. section 651 et seq., and the Massachusetts Prevailing Wage Law, M.G.L. c. 149, section 26H-27H, or whose bid is inaccurate or incomplete in any way.

The undersigned further certifies that it has read and understands the applicable bidding and contract requirements and that its bid is complete, accurate, and in compliance with such bidding and contract requirements.

---

(Name of Sub-Bidder)

---

(Signature and Title of Person Signing Bid)

---

(Business Address)

---

(City, State, and Zip Code)

**End of Document**

**DOCUMENT 004100**

**GENERAL BID FORM**

Date \_\_\_\_\_

To: City of Quincy  
Purchasing Department  
1305 Hancock Street  
Quincy, MA

A. The Undersigned, (hereinafter called the Contractor), proposes to furnish all labor and materials required for the Saville Hall Interior Alterations in Quincy, Massachusetts in accordance with the accompanying plans and specifications prepared by Quincy College for the amounts listed below, subject to additions and deductions in accordance with the terms of the specifications. It being understood that the City of Quincy on behalf of Quincy College, (hereinafter called the Awarding Authority), will be the sole judge as to acceptance of bids and award of the Contract.

B. This Bid includes Addenda:

<b>Schedule of Addenda</b>	
<b>Number</b>	<b>Date</b>

C. The proposed contract amount is:

\_\_\_\_\_ **Dollars, (\$ \_\_\_\_\_ )**

D. The subdivision of the proposed contract price is as follows:

Item 1: The work of the general contractor, being all work other than that covered

by Item 2: \$\_\_\_\_\_.

Item 2: Sub-Bids as follows:

Sub-trade	Name of Sub-bidder	Amount	Bonds required indicated by "Yes" or "No"
Section 220000 - Plumbing			
Section 260000 - Electrical			
<b>TOTAL OF ITEM 2</b>			

- E. Bidder proposes to provide all labor and materials to complete the work, as specified in the Contract Documents, and as is reasonably expected due to the existing conditions and required construction, within the Project Schedule/Phasing. The Awarding Authority requires the full use of the building while school is in session. Key dates are as follows. Please indicate any proposed schedule variations below:

<b>Project Schedule/Phasing</b>			
<b>Item No</b>	<b>Description</b>	<b>Schedule Date</b>	<b>Proposed Date</b>
1	Submittal review	Within 20 days after Execution of Contract Agreement	
2	Construction Substantial Completion Date	Within 120 days after Execution of Contract Agreement	

- F. The undersigned certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed on the work and that they will comply fully with all laws and regulations applicable to awards made subject to M.G.L. c. 149, section 44A.
- G. The undersigned certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection, the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.
- H. The undersigned certifies under penalty of perjury that the undersigned is not currently debarred from doing public construction work in the commonwealth under the provisions of M.G.L. c. 29, section 29F, or any other applicable debarment provisions of any other chapter of the General Laws, or any rule or regulation promulgated there under.
- I. The undersigned agrees that if he is selected as the General Contractor he will, within five (5) days, Saturday, Sundays, and legal holidays excluded, after presentation thereof by the Owner, execute a Contract in accordance with the terms of this Bid and furnish a performance bond and a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the commonwealth and satisfactory to the awarding authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract amount.

---

 Name of General Contracting Firm

---

 Address of General Contracting Firm

---

 Name of Person Authorized to Sign

---

 Title of Person Authorized to Sign

---

 Telephone Number of General Contracting Firm

---

 Signature of Person Authorized to Sign

**End of Document**

**PART B**  
**CONTRACT FORMS**

Quincy College

**Document 005200****AWARDING AUTHORITY - CONTRACTOR AGREEMENT**

This Agreement made the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, by and between The City of Quincy on behalf of Quincy College, called the "Awarding Authority", acting herein by and through its President, and \_\_\_\_\_, called the "Contractor".

Witnesseth, that the Awarding Authority and the Contractor, for the consideration named, agree as follows:

1. Article 1. Scope of Work: The Contractor shall perform all Work required by or reasonably inferable from the Contract Documents for the Saville Hall Interior Alterations in Quincy, Massachusetts prepared by Quincy College, acting and referred to in the Contract Documents as the "Architect".
2. Article 2. Time of Completion: The Contractor shall begin Work under this Contract on the date specified in the written "Notice to Proceed" of the Awarding Authority and shall bring the Work to Substantial Completion on \_\_\_\_\_, 20\_\_. Damages for delays in the performance of the Work shall be paid by the Contractor to the Awarding Authority in accordance with Articles 8 and 9 of the Conditions of the Contract.
3. Article 3. Contract Sum: The Awarding Authority shall pay the Contractor, in current funds, for the performance of the Work, subject to Additions and Deductions by Change Order of the Contract Sum of:

\_\_\_\_\_ dollars,  
(\$\_\_\_\_\_).

The Contract Sum is subdivided as follows:

Item 1: The Work of the Contractor, being all Work other than that covered by Item 2:

\_\_\_\_\_ dollars,  
(\$\_\_\_\_\_).

Item 2: Subcontractors as follows:

SECTION/TRADE	SUBCONTRACTOR	AMOUNT
Section 220000 - Plumbing	_____	\$ _____
Section 260000 - Electrical	_____	_____
Total of Item 2:	_____	\$ _____

Quincy College

4. Article 4. Included Items: The Contract Amount includes all extra work in connection therewith, under the terms as stated in the General Conditions and Supplementary Conditions of the Contract. The Contractor shall, at its own cost and expense, furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance and other accessories and services necessary to complete the said project in accordance with the terms and conditions as set forth in its Bid, and the Contract Documents described hereinafter.

5. The Contract Documents:

The following, together with this Agreement are incorporated into and made a part of this Contract and all are as fully a part of the Contract as if attached to this Agreement or herein repeated. In the event that any provision in any part of this Contract conflicts with any provision in another, the provision in the part first enumerated below shall govern over any other part which follows it numerically, except as may be otherwise specifically stated:

- 1) Supplementary Conditions, including any amendments,
- 2) General Conditions, including any amendments,
- 3) Awarding Authority – Contractor Agreement, including any amendments
- 4) Specifications, including any amendments,
- 5) Plans and drawings, including any amendments,
- 6) Advertisement and Information for Bidders, and
- 7) Contractor's Bid (bidding documents).

Terms used in this Agreement which are defined in the Conditions of the Contract shall have the meanings designated in those Conditions.

6. Article 6. REAP Certification: Pursuant to M.G.L. c62(c), §49(a), the individual signing this Contract on behalf of the Contractor certifies, under the penalties of perjury, that, to the best of his/her knowledge and belief, the Contractor has complied with any and all applicable state tax laws.
7. Article 7. Performance: The Work performed under this Contract shall be rendered in conformity with the standards of the trade and shall be professional and shall be of the highest fabrication and installation quality in all respects. Substandard fabrication and installation quality shall be deemed a breach of this Contract.
8. Article 8. Compliance: This Contract shall be construed in accordance with and shall be governed by the laws of the Commonwealth of Massachusetts. Any Contract provision inconsistent with state law shall be given no force or effect. In the event that a provision is deemed to be unlawful, it shall be severed from the Contract, and at the option of the Awarding Authority, the balance of the provision and/or Contract shall continue in full force and effect.
9. Article 9. Executive Order 195: The Governor or Governor's designee, the Secretary of Administration and Finance, and the state Auditor or Auditor's designee shall have the right at reasonable times and on reasonable notice to examine the books, records, and other compilations of data of the Contractor which pertain to the performance of the provisions and requirements of this Contract.
10. Article 10. Contributions: I hereby certify, under the penalties of perjury, that, within the meaning of M.G.L. c151A, §19A, \_\_\_\_\_ has complied with all Commonwealth of Massachusetts laws relating to contributions and payments instead of contributions.

Quincy College

11. Article 11. Miscellaneous Provisions:

1. This Contract shall be governed by the laws of the Commonwealth of Massachusetts, regardless of conflict-of-law principles.
2. If any provisions, or any portion thereof, of this Agreement is determined by final judgment of a court of competent jurisdiction to be invalid or unenforceable, the remaining provisions shall continue in effect to the extent permitted by law.
3. No change will be made in the membership of the Contractor's Project Team without the Owner's written approval, which approval shall not be unreasonably withheld. The Owner may require the replacement of any member of the Project Team upon reasonable notice to the contractor.

In Witness Whereof, the Parties Have Caused This Instrument to be Executed Under Seal.

(Name of Contractor)	(Awarding Authority)
(Address)	By: (Name and Seal)
By: (Name and Seal)	(Title)
Witness:	Attest:

Note: If Contractor is a corporation, attach a notarized copy of the Corporate Vote authorizing Signatory to sign Contract.

**End of Document**

Quincy College

**Document 006110**

**CERTIFICATE OF CORPORATE VOTE OF AUTHORIZATION**

\_\_\_\_\_, 20\_\_

PROJECT: Saville Hall Interior Alterations  
PROJECT LOCATION: Quincy College – 24 Saville Avenue Quincy, MA  
AWARDING AUTHORITY: City of Quincy on behalf of Quincy College  
PREPARED BY: Quincy College Office of Facilities Planning

I hereby certify that a meeting of the Board of Directors of the

duly called and held at \_\_\_\_\_ on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_,  
when a quorum was present and acting, it voted that \_\_\_\_\_ of  
the \_\_\_\_\_, be and is authorized to execute, seal, and deliver for, in the name  
of, and on behalf of the Corporation a Contract with the Awarding Authority for the construction of the  
above project, substantially in the form attached, as well as all documents related or incidental thereto,  
the execution, sealing and delivery of the same to be valid and binding upon this Corporation for all  
purposes, and as Principal to execute a performance bond and Payment concerning this, which  
Contract and Bond were presented to and made a part of the records of said meeting.

I further certify that \_\_\_\_\_ is duly qualified and acting  
\_\_\_\_\_ of the Corporation and that said vote has not  
been repealed, rescinded, or amended, and shall remain in full force and effect.

A true copy of the record,

ATTEST:

\_\_\_\_\_

(Corporate Seal)

Subscribed and Sworn to this \_\_\_\_\_ day of \_\_\_\_\_, 2008 before me:

\_\_\_\_\_

(Notary Public)

My Commission Expires:

\_\_\_\_\_

**End of Document**

Quincy College

**Document 006113**

**CONTRACTOR'S PERFORMANCE BOND**

PROJECT: Saville Hall Interior Alterations  
PROJECT LOCATION: 24 Saville Avenue Quincy, MA  
AWARDING AUTHORITY: The City of Quincy on behalf of Quincy College  
PREPARED BY: Quincy College Facilities Department

KNOW ALL PERSONS BY THESE PRESENTS:

That we, \_\_\_\_\_

as Principal, and \_\_\_\_\_

Surety, are held and firmly bound unto the Awarding Authority,

as Obligee, in the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), to be paid to the Obligee, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Whereas, the said Principal has made a Contract with the Obligee, bearing the date of \_\_\_\_\_, 20\_\_, for the construction of the Project.

The condition of this obligation is such that if the Principal and all Subcontractors under said Contract shall well and truly keep and perform all the undertakings, covenants, agreements, terms, and conditions of said Contract on its part to be kept and performed during the original term of said Contract and any extensions that may be granted by the Obligee, with or without notice to the Surety, and during the life and any guarantee required under the Contract, and shall also well and truly keep and perform all the undertakings, covenants, agreements, terms, and conditions of all duly authorized modifications, alterations changes or additions to said Contract that may be made, notice to the Surety of such modifications, alterations, changes or additions being hereby waived, then this obligation shall become void; otherwise, it shall remain in full force and virtue.

In the event that the Contract is abandoned by the Principal, or in the event that the Obligee, under the provisions of Article 14 of the Supplementary Conditions of said Contract ends the employment of the Principal or the authority of the Principal to continue the work, said Surety hereby further agrees that it shall, if requested in writing by the Obligee, take action as is necessary to complete said Contract.

Quincy College

In witness whereof, the Principal and Surety have set their

hands and seals this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

PRINCIPAL

SURETY

\_\_\_\_\_  
(Name and Seal)

\_\_\_\_\_  
(Attorney-in-fact - Seal)

\_\_\_\_\_  
(Title)

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

The rate for this Bond is \_\_\_\_% for the first \$ \_\_\_\_\_ and \_\_\_\_% for the next \$ \_\_\_\_\_.

The total Premium for this Bond is \$ \_\_\_\_\_.

**End of Document**

Quincy College

**Document 006114**

**CONTRACTOR'S PAYMENT BOND**

PROJECT: Saville Hall Interior Alterations  
PROJECT LOCATION: Quincy College – 24 Saville Avenue Quincy, MA  
AWARDING AUTHORITY: City of Quincy on behalf of Quincy College  
PREPARED BY: Quincy College Office of Facilities Planning

KNOW ALL PERSONS BY THESE PRESENTS:

That we, \_\_\_\_\_ as Principal, and \_\_\_\_\_ Surety, are held and firmly bound unto the Awarding Authority, as Obligee, in the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), to be paid to the Obligee, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Whereas, the said Principal has made a Contract with the Obligee, bearing the date of \_\_\_\_\_, 20\_\_\_\_, for the construction of the Project.

The conditions of this obligation are such that, if the Principal and all Subcontractors under said Contract shall pay for all labor performed or furnished and for all materials used or employed in said Contract and in all duly authorized modifications, alterations, extensions of time, changes, or additions to said Contract that may be made, notice to the Surety of such modifications, alterations, extensions of time, changes, or additions being hereby waived, the foregoing to include any other purposes or items set out in, and to be subject to, provisions of M.G.L. c.30, §39A, and M.G.L. c.149, §29, as amended, then this obligation shall become void; otherwise, it shall remain in full force and virtue.

In witness whereof, the Principal and Surety have set their hands and seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

PRINCIPAL

SURETY

\_\_\_\_\_  
(Name and Seal)

\_\_\_\_\_  
(Attorney-in-fact - Seal)

\_\_\_\_\_  
(Title)

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

The rate for this Bond is \_\_\_% for the first \$ \_\_\_\_\_ and \_\_\_% for the next \$ \_\_\_\_\_.

The total Premium for this Bond is \$ \_\_\_\_\_.

**End of Document**

**PART C**  
**CONDITIONS OF THE CONTRACT**

**DOCUMENT 007000**

**GENERAL CONDITIONS**

**Part 1 - General**

**1.01 Description**

- A. General Conditions of the Contract for Construction, AIA Document A201-1997.
- B. Document is incorporated by reference as part of this Project Manual.

**End of Document**

**DOCUMENT 007300****SUPPLEMENTARY CONDITIONS****I. THE GENERAL CONDITIONS**

The "General Conditions of the Contract for Construction", AIA Document A201 - (1997) Articles 1 through 14 inclusive, is a part of this contract.

**II. THE SUPPLEMENTARY GENERAL CONDITIONS**

The following supplements modify, delete and/or add to the General Conditions. Where any Article, Paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any Article, Paragraph, or subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

**III. MODIFICATIONS TO VARIOUS ARTICLES OF THE AIA GENERAL CONDITIONS****ARTICLE 1: GENERAL PROVISIONS**

1.1.1 Delete the last sentence of subparagraph 1.1.1 and replace with the following:

The Contract Documents include the Project Manual, Bidding Requirements, including the Advertisement or Invitation to Bid, Instructions to Bidders, sample forms, the Contractor's Bid, and portions of Addenda relating to any of these or any other documents. In the event of any addenda or amendments, the version bearing the later date is to take precedence over the earlier version.

In the event of any conflict among the Contract Documents, the Documents shall be construed according to the following priorities:

Highest Priority:	Supplementary Conditions
Second Priority:	General Conditions
Third Priority:	Owner-Contractor Agreement, including any amendments
Fourth Priority:	Drawings and Specifications, including any amendments
Fifth Priority:	Advertisement and Information for Bidders
Sixth Priority:	Contractor's Bid

1.1.2 At line 1, insert at the beginning of the subparagraph, "Except as provided in Paragraph 3.18."

At line 2-3, after the phrase "or oral", delete "The Contract may be amended or modified only by a Modification" and insert in its place "The Contract may be amended or modified only by a prior written modification signed by the authorized representative of each party and certified as to the availability of an appropriation."

Delete the fifth sentence of subparagraph 1.1.2.

Add the following new provision

Notwithstanding the order of priority of documents set forth in Subparagraph 1.1.1, any matters contained in the Specification which have been omitted from the Drawings or vice versa shall be construed as though contained in both. In case of any conflict or inconsistency between the Drawings and Specifications, requirements providing the greatest benefit to the Owner shall govern. Neither party shall take advantage of any obvious error or omission in the Contract Documents. Any apparent discrepancies shall be submitted to the Architect for determination, without whose instructions the Contractor shall not adjust the matter except at his own risk. Any instructions of the

Quincy College

Architect shall be given in writing. Any claim of the Contractor arising out of such instructions shall be governed by the provisions of Article 4.

1.1.3 Change the first sentence of subparagraph 1.1.3 to read as follows:

The term "Work" means the construction required by the Contract Documents, including all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated therein.

1.1.3.1 Insert a new paragraph 1.1.3.1 as follows:

The Work shall include the transportation of materials and supplies to or from the location of the project by employees of the Contractor and any Subcontractor.

1.1.5 Add at the end of the paragraph:

The drawings and details for construction and changes show layouts as taken from available original drawings and subsequent known changes. The Contractor shall make all necessary adjustments and changes required by actual conditions existing at the time of the bid opening, at no cost to the Owner.

1.1.6.2 Insert a new subparagraph 1.1.6.2 as follows:

Where standard specifications, codes, regulations, and publications of governmental agencies, technical societies, manufacturer's associations and regulatory groups or bureaus are referred to in the Specifications, the applicable portion shall be of the same effect as if fully printed in the Specifications and work shall be done in full accordance. The edition current as of the date of issue of the Specifications shall be used except where publication date is specifically stated.

1.2.1 Add at the end of the first sentence of subparagraph 1.2.1:

The Contract shall be executed in three complete sets.

1.2.3 Add the following at the end of subparagraph 1.2.3:

All Work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work in accordance with the Architect's interpretation unless otherwise directed by written addendum to the Contract.

1.2.11 Add new subparagraphs 1.2.4 through 1.2.11 as follows:

1.2.4 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

1.2.5 Where codes, standards, requirements and publications of public and private bodies are referred to in the Specifications, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated.

1.2.6 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

Quincy College

- 1.2.7 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.
- 1.2.8 The Mechanical, Electrical, Plumbing and Fire Protection Drawings are diagrammatic only, and are not intended to show the alignment, physical locations or configurations of such Work. Such Work shall be installed without additional cost to the Owner to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the Contractor shall prepare coordination drawings showing the exact alignment, physical location and configuration of the Mechanical, Electrical and Fire Protection installations and demonstrating to the Contractor's satisfaction that the installation will comply with the preceding sentence. The Contractor shall be solely liable and responsible for any costs and/or delays resulting from the Contractor's failure to prepare such coordination drawings.
- 1.2.9 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in subparagraph 3.2.4 before the Work is roughed in; Work installed without such information from the Architect shall be relocated at the Contractor's expense.
- 1.2.10 Test information included with the Contract Documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architect in the design of the Project or Work. The Owner does not hold out such information to the Contractor as an accurate or approximate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from a reliance by the Contractor on such information shall be allowed except as provided in subparagraph 4.3.6.
- 1.2.11 Where the Work is to fit with existing conditions or work to be performed by others, the Contractor shall fully and completely join the Work, with such conditions or work, unless otherwise specified.
- 1.2.12 Add the following new provision:
- The Work shall be performed in such sequence and manner as to avoid conflicts, to provide clear access to all control points (including valves, strainers, control devices, and specialty items of every nature related to such systems and equipment), to obtain maximum headroom, to provide adequate clearances as required for operation and maintenance, and to present an orderly appearance where exposed. The alignment of pipes, ducts, or similar equipment shall be varied from that shown on the Drawings without additional expense to the Owner where necessary to prevent conflicts. If the actual layout of the Work affects the architectural and structural integrity and limitations of the Work, further directions shall be obtained from the Architect.

**ARTICLE 2: OWNER**

- 2.1.1 Retain the second, third and fourth sentences. In line 2, before "designate," change "shall" to "may." Add the following at the end of the second sentence: ", subject to such limitations (if any) as are set forth in such written designation of authority. Such representative shall have no authority to bind the Owner to expend money in excess of the Contract Price or the appropriation, or to suspend, stop or accelerate the Work. Any action taken on Owner's behalf by anyone other than the representative so designated by Owner will not be binding upon Owner."
- 2.1.2 Delete subparagraph 2.1.2.
- 2.2.1 Delete subparagraph 2.2.1.

Quincy College

2.2.3 Change subparagraph 2.2.3 to read as follows:

The Owner shall furnish, to the extent reasonably necessary for the completion of the Project, surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Owner expressly disclaims any warranty or guarantee of the accuracy or completeness of any materials, documents, or information provided by the Owner.

2.2.4 Change subparagraph 2.2.4 to read as follows:

Information or services required of the Owner hereunder shall be furnished by the Owner with reasonable promptness after receipt from the Contractor of a written request for such information or services.

2.2.5 Change subparagraph 2.2.5 to read as follows:

The Owner will furnish the Contractor with three (3) copies of Drawings and Project Manuals free of charge. Additional copies will be furnished at the cost of reproduction, postage and handling.

2.3.1 Add to the end of subparagraph 2.3.1:

The Owner shall have the authority to clean up or correct any situation which presents a hazard or unsafe condition or affects the Owner's use of the facility, without any notice to the Contractor. Costs incurred by the Owner for such work shall be charged to the Contractor.

2.4.1 A. The first two sentences shall be deleted in their entirety and the following shall be substituted in their place:

"If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, or if, having commenced such correction, the Contractor fails to continue such cure with diligence, then the Owner may, upon written notice to the Contractor, and without prejudice to other remedies the Owner may have, correct such deficiencies. In performing any work pursuant to this Subparagraph 2.4.1, the Owner shall have the right to take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor or any Subcontractor."

B. Substitute the word "actual" for the word "reasonable" in the third sentence and the following at the end of the third sentence:

"and the Contractor shall be responsible for all other costs, damages, delays, and associated impacts arising in the event that the Owner exercises its rights under this Subparagraph 2.4.1."

C. Delete the fourth sentence.

### ARTICLE 3: CONTRACTOR

3.1.4 Add the following new provision:

"The Contractor warrants that its financial condition is sound and that the Contractor shall be capable of obtaining any bonds required by the Contract Documents. The Contractor shall promptly advise the Owner of any occurrence, event, fact, or other matter that has had or will have a materially adverse effect upon the financial condition of the Contractor."

3.1.5 Add the following new provision:

“The Contractor hereby represents and warrants to the Owner that the Contractor is a business entity which is experienced and skilled in the construction of projects of the type described in the Contract Documents, is licensed to engage in the general construction business in the Commonwealth of Massachusetts, and is in compliance with all applicable governmental laws and regulations precedent thereto. The Contractor shall provide the Owner with a copy of Contractor’s license prior to commencement of the Work, if not provided previously.”

3.2.1 Change subparagraph 3.2.1 to read as follows:

Before starting the Work, and at frequent intervals during the progress thereof, the Contractor shall carefully study and compare the Contract Documents with each other and with the information furnished by the Owner pursuant to subparagraph 2.2.3, and shall at once report to the Architect any error, inconsistency or omission the Contractor may discover. Any necessary change shall be ordered as provided in Article 7, subject to the requirements of Paragraph 1.2 and other provisions of the Contract Documents. If the Contractor proceeds with the Work without such notice to the Architect, having discovered such errors, inconsistencies or omissions, or if by reasonable study of the Contract Documents the Contractor could have discovered such, the Contractor shall bear all costs arising therefrom.

3.2.2 Change subparagraph 3.2.2 to read as follows:

The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. The Contractor shall promptly report to the Architect any errors, inconsistencies or omissions which he discovers.

3.2.3 Delete the last sentence of the subparagraph and insert the following in its place:

If the Contractor proceeds with such work without obtaining further drawings or instructions or without providing prompt prior notification to the Architect or Owner, the incorrect or improperly completed work will be corrected at the contractor’s expense.

Add new subparagraphs 3.2.4, 3.2.5, 3.2.6 and 3.2.7 as follows:

3.2.4 The Contractor shall give the Architect timely notice of any additional Drawings, Specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work.

3.2.5 The Contractor shall not proceed with any Work not clearly and consistently defined in detail in the Contract Documents, but shall request additional drawings or instructions from the Architect as provided in subparagraph 3.2.2.

3.2.6 If the Contractor proceeds with such Work without obtaining further Drawings, Specifications or instructions, the Contractor shall correct Work incorrectly done at the Contractor’s own expense.

3.2.7 Work shown on the Contract Documents shall be considered new work unless specifically noted or labeled as existing.

3.3.1 Delete the third, fourth and fifth sentences.

3.3.2 At the end of the subparagraph, add “regardless of tier.”

Add the following new provisions:

Quincy College

- “3.3.4 The Contractor shall furnish sufficient forces, plant and equipment as may be necessary to insure the progress of the Work in accordance with the Project Schedule. If, in the opinion of the Owner, the Contractor has fallen behind the Project Schedule, the Contractor shall submit his proposal demonstrating the manner in which the desired rate of progress may be increased and shall take such steps, at the Contractor’s own cost, as may be necessary to meet the Project Schedule. It shall be the responsibility of the Contractor to maintain his schedule so as not to delay the progress of the Work or the scheduled work of separate contractors.
- 3.3.5 Coordination of all work shall include without limitation, review of all shop drawings (including, without limitation, structural mechanical, and electrical shop drawings) submitted by Subcontractors for various trades or sub-divisions of work; and approval of such shop drawings indicated by Contractor’s stamp of approval in accordance with Paragraph 3.12.
- 3.3.6 The Contractor shall be solely responsible for properly laying out the Work, and for all lines, elevations and measurements for all of the Work. He shall verify the figures shown on the Drawings before laying out the work and will be responsible for any error or inaccuracies resulting from his failure to do so. In the event that the Contractor shall, while laying out the Work, become aware of (i) any conflicts among or between the Drawings, the Specifications or any Modification to the Drawings or the Specifications and the actual layout of the Work, or (ii) any conflicts or inconsistencies in the Drawings and Specification themselves, he shall promptly notify the Architect, without whose instructions the Contractor shall not adjust the matter except at his own risk.
- 3.3.7 The Contractor shall comply with all Federal, State and Local safety laws and regulations applicable to the Work performed under the Contract, including without limitation the Occupational Safety and Health Act of 1970 (OSHA).
- 3.3.8 If this Project requires the containment, abatement or removal of asbestos or material containing asbestos, lead or waste containing lead-based paint, the Contractor shall ensure that the person or entity performing the asbestos or lead related services is licensed pursuant to applicable State laws and regulations.
- 3.3.9 Chemical waste shall be stored in corrosion resistant containers, removed from the Project site, and disposed of not less frequently than every three weeks unless directed otherwise. Disposal of chemical waste shall be in accordance with requirements of the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). Fueling and lubricating of vehicles and equipment shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants to be discarded or burned shall be disposed of in accordance with approved procedures meeting all applicable Federal, State and Local regulations. In the event of an oil or hazardous materials spill large enough to violate Federal, State or Local regulations, the Contractor shall notify the Owner and the Authorities Having Jurisdiction immediately. The Contractor shall be responsible for immediately cleaning up any oil or hazardous waste spills resulting from its operations. Any costs incurred in cleaning up any such spills shall be borne exclusively by the Contractor.
- 3.3.10 The Contractor, at its sole expense, shall be solely responsible for compliance with laws and regulations governing the handling, storage, use or disposal of hazardous materials or wastes used, stored, generated or disposed of in connection with construction of the Work and shall obtain all permits and approvals, give all required notices, and observe all applicable procedures prescribed by the EPA, DEP or other governmental authorities having jurisdiction with respect to such activities. At the Owner’s request, the Contractor shall properly furnish the Owner with evidence satisfactory to the Owner demonstrating the Contractor’s compliance with such procedures, the giving of such notices, and the issuance of such permits and approvals.
- 3.3.11 The Contractor, at its sole expense, shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

Quincy College

- 3.3.12 The Contractor, at its sole expense, shall at all times protect excavations, trenches, buildings and materials from rain water, ground water, backup or leakage of sewers, drains and other piping, and from water of any other origin, and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end, all at Contractor's sole expense.
- 3.3.13 The Contractor, at its sole expense, shall remove snow and ice which might result in damage or delay.
- 3.3.14 The Contractor shall provide and pay for security measures necessary to protect the Work until acceptance by the Owner to assure that the Work, and all materials and equipment stored at the Site, are fully and completely protected against loss or damage due to vandalism, theft, or malicious mischief. The Contractor shall not use guard dogs for this purpose unless authorized in advance in writing by the Owner. If the Owner approves the use of guard dogs, each dog shall at all times be accompanied by an adult handler.
- 3.3.15 The Contractor shall be responsible for the adequate strength and safety of all scaffolding, staging, and hoisting equipment and for temporary shoring, bracing, and tying.
- 3.3.16 The Contractor shall furnish on site all personal protective equipment as required, approved first aid supplies, the name of its first-aid attendant, and a posted list of emergency facilities.
- 3.3.17 No unauthorized visitors shall be allowed on the work site without permission from the Contractor.
- 3.4.2 At line one, add the word "written" before the phrase "consent of Owner".
- 3.4.2.1-  
3.4.2.7 Proposed Supplementary Subparagraphs 3.5.2-3.5.8 shall be renumbered as clauses 3.4.2.1-3.4.2.7.
- 3.4.4 Add the following new provisions:
- 3.4.4 Directions, specifications, and recommendations by manufacturers for installation, handling, sorting, adjustment, and operation of their materials or equipment shall be complied with; but the Contractor shall nonetheless bear the responsibility of determining whether such directions, specifications, and recommendations may safely and suitably be employed in the Work, and of notifying the Owner in advance, in writing, of any deviation or modification necessary for installation safety or proper operation of the item.
- 3.4.5 The Contractor is solely responsible for the proper and safe operation and maintenance of all utility systems within the construction limits, whether these are supplied by the Owner's distribution system or otherwise, and shall facilitate and accommodate the Owner's continued use of the school buildings and surrounding area, until the work is accepted by the Owner, and until the Owner has notified the Contractor that other arrangements have been made. The Contractor shall maintain and operate appurtenances within the construction area which serve the distribution system, subject to periodic inspection by the Owner's operating personnel. Inspection by any representative or personnel of the Owner shall not relieve the Contractor of his responsibilities in connection with operation and maintenance of these facilities and equipment. The Contractor shall provide the Owner at least 72 hours' advance notice of the Contractor's desire to extend, connect, disconnect, or turn on or off any steam, electric, water, or other service from the Owner's supply systems. The actual operation shall be witnessed and approved by an authorized representative of the Owner. All plumbing, heating, and electrical work, including installation of equipment, and other work to be performed by the Contractor, shall be carried out without interference with the Owner's normal operation. Where any work requires interruption of any service, the Contractor shall make advance arrangements with the Owner for dealing with and minimizing such interruption.

Quincy College

3.4.6 The Owner will supply to the Contractor all water and electricity reasonably required for all construction requirements. The Owner reserves the right to charge the Contractor for excessive usage of interior electrical service or other utilities furnished by the Owner. The Contractor shall supply its own hoses, extension cords, etc., necessary for the proper installation of the work.

3.4.8 The Contractor is responsible for the proper removal, storage, protection and similar precautions necessary to prevent damage to these materials which are removed from the work and scheduled to be built back into the work later. The costs of damage to or loss of such materials while removed from the work shall be borne by the Contractor.

3.5.1 At line three, delete the phrase "not inherent in the quality required or permitted".

3.5.2 Add the following new subparagraph 3.5.2:

At the expense of the Contractor, the contractor shall make repairs or replacements made necessary by defects in materials or workmanship that become evident within two (2) years after the date of substantial completion. The Contractor shall restore to full compliance with the requirements set forth in the Contract Documents for the Work constructed which during the Warranty period is found to be deficient with the respect to provisions of the Contract Documents. The Contractor also shall hold the Owner harmless from claims arising from damage due to warranted defects. The Contractor shall make repairs and replacements promptly upon receipt of written orders from the Owner. If the Contractor fails to make the repairs and replacements promptly, the Owner may do the work and the Contractor shall be liable to the Owner for the cost thereof.

3.5.3 Add the following new subparagraph 3.5.3:

The Contractor further agrees that each Subcontractor shall contain a guarantee of the Work performed there-under in the same form as the above stated guarantee of Contractor. Included in said guarantee shall be the statement that the guarantee shall be enforceable directly by the Owner, if the Owner so elects. The guarantee of any Subcontractor shall not relieve the Contractor of its guarantee as set forth above, and the Owner may look to the Contractor directly, and in the first instance, to correct any defects in the Work.

3.6.2 Add the following new subparagraph 3.6.2

The Owner is a tax exempt entity and as such this Project is free from state sales tax requirements. The Owner's tax exempt number shall be provided to the contractor for use on this Project.

3.7.1 At line 3-4, after the word "Work", delete the phrase "which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded".

At the end of subparagraph 3.7.1, add the following:

The Contractor shall provide the Architect and owner with reproductions of all permits, licenses and permissions.

3.7.1.1 Insert a new paragraph 3.7.1.1 as follows:

Permits shall be obtained by the Contractor. No work shall begin and no materials shall be ordered, nor shall any financial responsibility be assumed on the part of the Owner, until permits are issued and in the possession of the Contractor. The Contractor's failure to timely obtain any such permits shall not constitute cause for delay in the timely commencement and/or completion of the Project. Delays in issuance of any permits shall immediately be brought to the attention of the Architect.

3.7.3 At line one, after the phrase "it is", delete the word "not". At line 2, after the word "regulations", delete the words "However, if" and insert in their place the word "If".

Quincy College

3.7.4 In line 1, after "Word," delete the phrase "knowing it to be".

3.8.1 Delete subparagraphs 3.8.1, 3.8.2 and 3.8.3 in their entirety.

3.9.1 Change the first sentence of subparagraph 3.9.1 to read as follows:

The Contractor shall employ a competent superintendent, reasonably acceptable to the Owner, and necessary assistants who shall be in attendance at the Project site full time during the progress of the Work until the date of Substantial Completion, and for such additional time thereafter as the Architect may determine to be necessary for the expeditious completion of the Work. The Contractor shall remove the superintendent if requested to do so in writing by the Owner, and shall promptly replace him with a competent person reasonably acceptable to the Owner.

3.9.1 At the end of subparagraph 3.9.1, add the following:

The Owner reserves the right to request alternative superintendent from the Contractor. The Contractor shall provide the Owner with after hours phone numbers by which the Owner may contract appropriate personnel in the event of emergencies.

3.9.2 Add new subparagraphs 3.9.2 through 3.9.4 as follows:

3.9.2 The Contractor shall establish the building grades, lines, levels, column, wall and partition lines required by the various Subcontractors in laying out their Work.

3.9.3 The Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time causes delay to the general progress of the Work. The Contractor and all Subcontractors shall at all times afford each trade, any separate Contractor, or the Owner, every reasonable opportunity for the installation of Work and the storage of materials.

3.9.4 The Contractor shall arrange for and attend job meetings with the Architect and such other persons as the Architect may from time to time wish to have present. The Contractor shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the Contractor's own superintendent. An authorized representative of any Subcontractor or Sub-subcontractor shall attend such meetings if the representative's presence is required by the Architect. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, change orders, time schedules and manpower. Any notices required under the Contract may be served on such representatives.

3.10.1 Change subparagraph 3.10.1 to read as follows:

The Contractor shall prepare and submit to the Architect a progress schedule which shall be subject to the review and approval of the Owner and shall not exceed the time limits set out in the Bid Form. The Contractor shall comply with such schedule, as described in subparagraphs 8.2.4 through 8.2.10.

3.10.3 Delete and replace with the following new provision:

**"3.10.3 Owner's Right to Order Extraordinary Measures**

If the Owner determines at any time that the performance of the Work has not progressed or reached the level of completion required by the Contract Documents, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including without limitations: (i) working additional shifts or overtime, (ii) supplying additional workers, equipment, and facilities, and (iii) other similar measures (hereinafter referred to as "Extraordinary Measures"). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents, or is sufficient to

Quincy College

ensure that Substantial Completion of the Project will be achieved within the Contract Time. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule. The Contractor shall not be entitled to an adjustment in the Contract price in connection with Extraordinary Measures required by the Owner under or pursuant to this Subparagraph 3.10.3 unless the need for such Extraordinary Measures arises solely from causes beyond the Contractor's reasonable control. The Owner may exercise the rights furnished the Owner pursuant to this Subparagraph 3.10.3 as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with any milestone date or completion date set forth in the Contract Documents."

3.11.1 Delete and insert the following in its place:

"3.11.1 The Contractor shall maintain at the Site a record set of plans which shall record all deviations from the Drawings and Specifications and shall be updated in detail to reflect the actual progress of the Work. The Owner and the Architect shall have free and complete access to such drawings during the construction of the Work. Upon Substantial Completion, the Contractor shall furnish to the Owner through the Architect one set of "as built" plans in such form as the Owner shall require. Such plans shall completely record all Work in place.

3.11.2 The Contractor shall prepare and deliver to the Architect four copies of an operating and maintenance manual for the Project. The manual shall contain full information for each item of mechanical, electrical, or other operating equipment, copies of warranties therefore, schematic diagrams of control systems, circuit directories for each electric and communications panel board, and charts showing the tagging of all valves. The manual shall also contain complete keying schedules, paint color schedules, and paint color samples. Each volume of the manual shall be clearly indexed, and shall include a directory of all Subcontractors and maintenance contractors, indicating the area of responsibility of each, and the name and telephone number of the responsible member of each organization. The volumes shall be bound in book form. Typewritten, drawn or photographic material shall be protected by clear plastic sleeves."

3.12.6 Change subparagraph 3.12.6 to read as follows:

By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor thereby represents that the Contractor has determined and verified all materials, dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals, the Architect and the Owner shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

3.12.8 At line 5, delete the phrase "has been issued" and insert the phrase "was issued prior to performance of the work" in its place.

3.12.9 Change the last sentence of subparagraph 3.12.9 to read as follows:

Unless such written notice has been given, the Architect's review of a resubmitted Shop Drawing, Product Data, Sample, or similar submittal shall not constitute approval of any changes not requested on the prior submittal.

3.12.10 Delete subparagraph 3.12.10.

3.12.11 Add new subparagraph 3.12.11 as follows:

When professional certification of performance criteria of materials, systems or equipment is required by the Specifications and Building Code, the Owner shall be entitled to rely upon such certifications, and neither the Owner nor the Architect shall be expected to make any independent examination with respect thereto.

3.13.1 Change subparagraph 3.13.1 to read as follows:

The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times in the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Contractor shall confine the Contractor's apparatus, the storage of materials and the operations of the Contractor's workmen to limits indicated by law, ordinances, the Contract Documents and permits and/or directions of the Architect and/or the Owner, and shall not unreasonably encumber the premises with the Contractor's materials. The Owner shall not be liable to the Contractor, the Subcontractors, their employees or anyone else with respect to the conditions of the premises.

3.13.2 Add new subparagraph 3.13.2 as follows:

Contractor shall use only areas specifically assigned by the Owner for parking, storage or materials and construction operations and shall comply with all local municipal regulations regarding use of and parking on public ways.

3.13.3 Add new subparagraph 3.13.3 as follows:

Contractor shall repair any and all streets, drives, curbs, sidewalks, and landscaping which are disturbed by construction operations and shall leave them in as good condition after completion of the work as they were in before commencement of the Work.

3.13.4 Add new subparagraph 3.13.4 as follows:

"Adequate toilet facilities for use during construction shall be provided by the Contractor at no additional expense to the Owner."

3.13.5 Add new subparagraph 3.13.5 as follows:

The Contractor shall not block or interfere with building access, operations, traffic or parking facilities, except as authorized by the Owner.

3.14.3 Add new subparagraph 3.14.3 as follows:

Contractor shall be responsible for installation of all required sleeves, forms and/or inserts for any built-in building component. No finished materials or existing structural work shall be cut which is not shown on the Contract Documents unless the Architect approves such cutting after submittal of appropriate detail drawings to the Architect by the Contractor. At no cost to the Owner, the Contractor shall effect all cutting and/or patching of any building elements which is required due to a failure to provide or properly to locate sleeves, forms and/or inserts or due to incorrect location of work or failure to cooperate with other trades. All installation and repair work shall be carried out by mechanics skilled in the repair trade concerned, with due regard to trade practices and with suitable protection of existing work.

3.15.1 Add the following at the end of subparagraph 3.15.1:

Immediately prior to the Architect's inspection for Substantial Completion, the Contractor shall completely clean the premises. Concrete and ceramic surfaces shall be cleaned and washed. Resilient coverings shall be cleaned, waxed and buffed. Woodwork shall be dusted and cleaned. Sashes, fixtures and equipment shall be thoroughly cleaned. Stains, spots, dust, marks and smears shall be removed from all surfaces. Hardware and all metal surfaces shall be cleaned and polished. Glass and plastic surfaces shall be thoroughly cleaned by professional window cleaners. All damaged, broken or scratched glass or plastic shall be replaced by the Contractor at the Contractor's expense.

Quincy College

3.15.3 Add the following new provision:

“All adjacent property and all roads abutting and leading to the Site shall be kept clean of all construction dirt, spoil, rubbish, concrete, debris and materials.”

3.17.1 At line 7, after the phrase “the Architect”, insert the words “and Owner”.

3.18.1 Delete and replace with the following:

“To the fullest extent permitted by law, the Contractor shall indemnify, defend, protect, and hold harmless the Owner, its officers, directors, shareholders, representatives, agents, employees, the Architect, and anyone else acting for or on behalf thereof (herein individually called “indemnatee” and collectively called “Indemnitees”) from and against all liabilities, damages, losses, claims, penalties, judgments, costs, expenses, demands, lawsuits, proceedings, arbitrations, and actions of any nature whatsoever (“Claims”) which arise out of or are connected with, or are claimed to arise out of or be connected with:

1. The performance of Work or any act, activities, operations, conducts, negligence or omission of the Contractor, its Subcontractors, suppliers, material men or anyone directly or indirectly employed by any of them or anyone for whose acts they may be liable;
2. Any accident or occurrence which happens, or is alleged to have happened, in or about the place where such Work is being performed or in the vicinity thereof (a) while the Contractor is performing the Work, either directly or indirectly through a Subcontractor, Sub-subcontractor, or material supplier, or (b) while any of the Contractor’s property, equipment or personnel are in or about such place or the vicinity thereof by reason of or as a result of the performance of the Work;
3. The use, misuse, erection, maintenance, operation or failure of any machine or equipment (including, but not limited to, cranes, scaffolds, derricks, ladders, hoists, rigging supports, etc.) Whether or not such machinery of equipment was furnished, rented or loaned by the Owner or its officers, directors, shareholders, representatives, employees, agents, servants or others, to the Contractor; or
4. The breach by the Contractor of any of its obligations under this Agreement.

Without limiting the generality of the foregoing, such defense and indemnity includes all Claims on account of bodily and personal injury, death or property damage (other than the Work itself) and loss to any Indemnatee, any of Indemnatee’s employees, agents, contractors or subcontractors, licensees or invitees, or any other persons, whether based upon, or claimed to be based upon, statutory (including, without limiting the generality of the foregoing, worker’s compensation and/or wage claims), contractual, tort or other liability of any Indemnatee or any other persons. In additions, the Claims indemnified against shall include all Claims for trademark, copyright or patent infringement, which arise out of any failure of the Contractor to discharge it duties specified in the Contract Documents, including, without limitation, these General Conditions.”

3.19 Add the following new provision:

“3.19 Harmonious Labor. The Contractor agrees to procure materials, equipment, labor and supplies from such sources and to perform all Work on the Project with labor, material suppliers and Subcontractors that will work harmoniously with the Owner’s employees, employees of other contractors employed by the Owner, and with other elements of labor involved in the construction of the Project or the operation of the building in which the Project is located, including, without limitation, any tenant improvement work contractors engaged by Owner or any tenants of Owner.”

**ARTICLE 4: ADMINISTRATION OF THE CONTRACT**

4.1.3. At line 1, after the word "Owner", delete the word "shall" and insert in its place the word "may".

4.2.1. At line 1, after the word "Architect", insert the phrase "if retained by the Owner".

At the end of the subparagraph, add the following:

Notwithstanding any provisions to the contrary, this Contract does not reduce or limit the duties and responsibilities of the Architect to the Owner, as set forth in the contract between the same, Further, the Architect is not authorized to bind the Owner to pay sums in excess of the Contract Price or of the appropriation, or to stop, suspend or accelerate the work.

4.2.2. In subpart (2) of the first sentence, delete the word "endeavor" and replace with the phrase "use due diligence."

At the end of the subparagraph, add the following:

The Owner may elect to have an observer present during the work to act as the Owner's agent with such authority and limitations as set forth in the agreement between the Owner and said observer. This observer may record and report to the Owner the departures from the Contract Documents and job progress. The observer shall not have the authority to obligate the Owner to spend money in excess of the Contract Price or the appropriation, alter or modify the Contract Documents, stop, suspend or accelerate the Work, change the Contract Documents, direct the work (including starting and stopping the work), or approve shop drawings. The presence of the observer shall not create responsibility for the Owner not otherwise provided for in this agreement.

4.2.3 Insert the following at the end of the subparagraph:

"Nothing in this Subparagraph 4.2.3 shall relieve the Architect of its responsibilities under Subparagraph 4.2.2, other provisions of this Agreement or under the terms of the Architect's Agreement with the Owner."

4.2.4. Delete subparagraph 4.2.4 in its entirety and replace with the following:

Except as otherwise provided in the Contract Documents or by the law, the Owner and Contractor shall endeavor to communicate through the Architect whenever practicable. Communications by and with the Architect's consultants shall be through the Architect and communications by and with Subcontractors and material suppliers shall be through the Contractor, unless otherwise required or necessitated for compliance with any and all laws, statutes, ordinance, rules and regulation governing the contract.

4.2.4.3 Add the following new clauses after Subparagraph 4.2.4:

4.2.4.1 The Contractor shall forward copies of all communications to the Architect directly to the Owner except for communications required pursuant to Paragraph 3.12. With respect to communications required pursuant to Paragraph 3.12, the Contractor shall send to the Owner copies of the transmittal letters accompanying such communications.

4.2.4.2 The Owner shall forward to the Architect copies of any approvals, instructions or other communications which the Owner gives to the Contractor relating to the Drawings, the Specifications, or any Modifications thereof.

4.2.4.3 The Contractor shall forward to the Architect any communications which the Contractor gives to the Owner relating to the Drawings, the Specifications, or any Modifications thereof."

Quincy College

4.2.5 After the word "Payment" in the first clause, add "and his site inspections".

4.2.6 Delete this subparagraph and add the following paragraph:

If the Architect determines that the Work does not conform to the Contract Documents, the Architect shall notify the Owner, and may recommend that the non-conforming Work be rejected, but, except in matters affecting life safety, only the Owner will have authority to reject non-conforming Work. Whenever, in the Architect's opinion it is necessary or advisable to conduct special inspection or testing of the Work, the Architect shall notify the Owner, but only the Owner will have authority to order such special inspection or testing, except in matters affecting life safety. Any such rejection of work shall not relieve the Contractor of the responsibility for maintaining protection of the Work and the Owner's property.

4.2.7 Add to the end of the first sentence of subparagraph 4.2.7, "and only to the extent which the Architect believes desirable to protect the Owner's interest." Change the second sentence to read:

"The Architect's action will be taken with reasonable promptness, while allowing sufficient time in the Architect's professional judgment to permit adequate review, taking into account the time periods set forth in the latest schedule prepared by the Contractor and approved by the Architect pursuant to subparagraphs 8.2.4 through 8.2.10." In the fifth sentence, delete the words "unless otherwise specifically stated by the Architect."

4.2.8 At the end of the sentence, add the following:

so long as such minor changes will not change the design, intent or performance requirements and may be performed at no additional cost to the Contractor and the Owner.

4.2.10 At the end of subparagraph 4.2.10, add the following:

If no such exhibit has been so incorporated, the duties, responsibilities, and limitations of authority of such Project Representative shall be as set forth in the edition of AIA Document B207 current as of the date of the Agreement. Alternatively, the Owner may employ a Clerk of the Works for the Project.

4.2.11 Delete the last sentence of subparagraph 4.2.11 and substitute the following:

The Architect may, as the Architect judges desirable, issue additional drawings or instructions indicating in greater detail the construction or design of the various parts of the Work; such drawings or instructions may be effected by field order or other notice to the Contractor, and provided such drawings or instructions are reasonably consistent with the previously existing Contract Documents, the Work shall be executed in accordance with such additional drawings or instructions without additional cost or extension of the Contract Time. If the Contractor claims additional cost or time on account of such additional drawings or instructions, the Contractor shall give the notice provided in subparagraph 4.3.7.

4.2.12 Delete the second sentence in its entirety.

4.3.1 At the end of subparagraph 4.3.1, add the following:

All changes in the work shall be approved before the start of any work through written consent by both Owner and Architect in accordance with the procedure above. Changes not approved in writing by the Architect and Owner in advance shall not be recognized as a valid claim at a later date, except where the Owner and Architect agree in writing that the change shall be started, subject to an equitable price adjustment at a later date, in the interest of job progress.

Quincy College

4.3.2 Revise the last sentence of subparagraph 4.3.2 to read as follows:

Any change or additions to a previously made Claim shall be made by timely written notice in accordance with this subparagraph 4.3.2.

4.3.3 At the end of the sentence ", except for disputed items."

4.3.4 Change subparagraph 4.3.4 to read as follows:

If, during the progress of the work, the Contractor or the Owner discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the Contract Documents, either the Contractor or the Owner may request an equitable adjustment in the contract price of the contract applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a Contractor, or upon its own initiative, the Owner shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the Contract Documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and Contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a Change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the Owner shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly. The Parties shall comply fully with the provisions of General Laws Chapter 30, Section 39N, to the extent required by law. Said statute is hereby incorporated and made a part of this contract.

4.3.5 Change subparagraph 4.3.5 to read as follows:

If the Contractor claims that any acts or omissions of the Owner or the Architect, including any instructions or orders, whether oral, written, by Drawings, or otherwise, involve extra cost or time, and the Contractor has not received a written acknowledgement by the Owner or Architect that extra payment will be made or time extended on account thereof, the Contractor shall promptly so notify the Architect in writing of such Claim and shall not proceed with the Work relating to such Claim until the Contractor has received a further written order to proceed in accordance with Paragraph 4.4. except, as provided in Paragraph 10.3, in the case of an emergency affecting life or property. No Claim by the Contractor on account of such acts, omissions, instructions or orders shall be valid unless the Contractor has so notified the Architect, before proceeding, and has received the further written order to proceed.

4.3.7.1 Delete the second sentence of subparagraph 4.3.7.1 and substitute the following:

The Contractor shall have the burden of demonstrating the effect of the claimed delay on the Contract Time, and shall furnish the Architect with such documentation relating thereto as the Architect may reasonably require.

4.3.10 Delete subparagraph 4.3.10.

4.4.3 Delete the second sentence of subparagraph 4.4.3.

4.4.5 At line 2, after the phrase "parties of any", insert the word "recommended". At line 3, delete the phrase "mediation and arbitration" and insert in its place the phrase "review by a court of competent jurisdiction".

Quincy College

4.4.6 Change subparagraph 4.4.6 to read as follows:

When a written decision of the Architect states that (1) the decision is final but subject to review by a court of competent jurisdiction and (2) litigation regarding a Claim covered by such a decision must be commenced within thirty days after the date on which the party making the demand receives the final written decision of the Architect, then failure to so commence court action within said thirty day period shall result in the Architect's decision becoming final and binding upon the Owner and the Contractor. If the Architect renders a decision after court proceedings have been initiated, such decision may be entered as evidence, but shall not supersede court proceedings unless the decision is acceptable to all parties concerned.

4.4.8 Change subparagraph 4.4.8 to read in its entirety as follows:

Notwithstanding any provision to the contrary, the Owner may assert any breach of contract, warranty claim or any claim regarding the Contractor's failure to perform the Work as set forth in the Contract Documents without regard to the claim and dispute resolution procedures contained herein, particularly in Articles 4.3 and 4.4.

4.4.9 Add a subparagraph 4.4.9 as follows:

The Contractor shall carry on the Work and maintain the progress schedule during any court proceedings, unless otherwise mutually agreed in writing.

4.5 Delete paragraph 4.5 in its entirety.

4.6 Delete paragraph 4.6 in its entirety.

5.4.2 Delete subparagraph 5.4.2 in its entirety and replace with the following:

If the Work has been suspended for more than thirty (30) days, and the Subcontractor is without fault for said suspension, the Subcontractor's payment shall be equally adjusted.

**ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

6.1.4 Delete subparagraph 6.1.4.

6.2.3 After the first sentence, insert: "The Owner shall have the right to off-set such costs against any amounts owed by the Contractor to the Owner." At the end of the subparagraph, insert: "provided that the Contractor timely notifies the Owner of its Claim based upon the fault of such separate contractor."

Delete the last sentence of the subparagraph.

6.2.4 Add the following at the end of subparagraph 6.2.4:

If such separate contractor sues or initiates an arbitration or other legal proceeding against the Owner on account of any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at the Contractor's expense, and if any judgment or award against the Owner arises therefrom the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys' fees and court or arbitration costs which the Owner has incurred.

7.1.4 –7.1.6 Add the following subparagraphs as 7.1.4, 7.1.5, and 7.1.6:

7.1.4. The Owner may direct by a written instruction fully complying with all requirements set forth herein, the Contractor to perform any change in the Work and the Contractor shall immediately do the Work required to effect the change in contract.

7.1.5. Notwithstanding any provision to the contrary, the Owner shall not be obligated to pay sums in excess of the contract price in the absence of a prior written change order, certified by the City Auditor.

7.1.6. Other provisions of the Contract notwithstanding, neither the Architect nor the Contractor shall have the authority to bind the Owner to expend money in excess of the certified appropriation.

7.2.1.1 Add a subparagraph 7.2.1.1 as follows:

7.2.1.1 Any and all such change orders shall be certified by the appropriating authority if the change would increase the contract sum.

7.2.2 Add to subparagraph 7.2.2 the following:

Adjustments in the Contract Sum for Change Orders may include mark-ups of not more than the following:

At the Contractor level: 7% for overhead (general conditions); 4% for profit (fee),  
at the Subcontractor level: 5% for overhead; 4% for profit.

7.2.3 -7.2.5 Add the following subparagraphs as 7.2.3, 7.2.4, 7.2.5

7.2.3. A change order request may be submitted for changes in the work within the contract's scope including but not limited to, changes in the Contract Documents, in the method or manner of performance of the Work, in the facilities, equipment, materials, services, or site supplied by the Owner, or in the schedule of performance.

7.2.4 Each claim or proposal for a change in the Contract amount shall be submitted with detailed documentation of labor and materials involved. Each item of material other than fasteners and mounting accessories shall be listed with its corresponding cost. The amount listed as miscellaneous materials shall not be more than 10% of the total cost of materials.

7.2.5 Each change order, at the sole discretion of the Owner, may include a requirement that the Contractor release the Owner from any and all claims which have been made or could have been made relation to the change order.

7.3.2 Add the following at the end of the subparagraph:

Any and all Construction Change Directives which would increase the contract sum shall be certified by the appropriating authority and shall be in the form of a Change Order.

7.3.8 At line 2, after the phrase "in the Work", change the word "shall" to "may".

7.3.9 Delete subparagraph 7.3.9 in its entirety and replace with the following:

When the Owner and the Contractor agree on an adjustment in the contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be recorded by preparation and execution of an appropriate Change Order.

## **ARTICLE 8: TIME**

8.1.2 At the end of subparagraph 8.1.2, add the following:

The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible. The computation of the Contract Time shall commence on the date specified in the Contract and continue for every contract day following.

Quincy College

8.2.2 Delete subparagraph 8.2.2.

8.2.3 At line 1, after the word "Substantial", insert the words "and Final".

8.2.4-

8.2.10 Add new subparagraphs 8.2.4 through 8.2.11 as follows:

8.2.4 At least 10 working days before the first Application for Payment, the Contractor shall submit to the Architect a Progress Schedule showing for each class of work included in the Schedule of Values, the percentage completion to be obtained and the total dollar value of work to be completed as of the first of each month until Substantial Completion. All calculations shall be on the basis of work in place, but not including the value of materials delivered but not in place.

8.2.5 The Progress Schedule shall be based on an orderly progression of the Work, allowing adequate time for each operation (including adequate time for submission and review of submittals), and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Progress Schedule will be reviewed by the Architect for compliance with the requirements of this Article and will be accepted by the Architect or returned to the Contractor for revision and resubmittal. Unless specifically required by law, no payment under this Contract shall be due until the Progress Schedule has been approved by the Architect and Owner. The Architect's review of the Progress Schedule shall not impose any duty on the Architect or the Owner with respect to the timing, planning, scheduling, or execution of the Work. In particular, if the Contractor proposes a Progress Schedule indicating a date of Substantial Completion which is earlier than the Contract Time, the Contractor shall not be entitled to additional payment or compensation of any kind if, for any reason, the full Contract Time is required to achieve Substantial Completion of the Work.

8.2.6 If in any Application for Payment the total value of the completed Work in place, as certified by the Architect, is less than 90% of the total value of the Work in place estimated in the Progress Schedule, the Owner may, at the Owner's option, require the Contractor to accelerate the progress of the Work without cost to the Owner by increasing the work force or hours of work, or by other reasonable means approved by the Architect.

8.2.7 If each of three successive Applications for Payment, as certified by the Architect, indicate that the actual Work completed is less than 90% of the values estimated in the Progress Schedule to be completed by the respective dates, the Owner may, at the Owner's option, treat the Contractor's delinquency as a default justifying the action permitted under Paragraph 14.2.

8.2.8 If the Architect has determined that the Contractor should be permitted to extend the time for completion as provided in Paragraph 8.3, the calendar dates in the Progress Schedule shall be adjusted accordingly to retain their same relationship to the adjusted date of Substantial Completion, and the dollar value of Work to be completed as of the first of each month shall be adjusted prorata.

8.2.9 If the Contractor fails to submit any Application for Payment in any month, the Architect shall, for the purpose of this evaluation of progress, certify separately to the actual value of the Work in place completed as of the first of the month to the best of the Architect's knowledge.

8.2.10 Nothing herein shall limit the Owner's right to liquidated or other damages for delays by the Contractor or to any other remedy which the Owner may possess under other provisions of the Contract Document or by law.

8.2.11 Any work performed after regular working hours, on Saturdays, Sundays of legal holidays, shall be performed without change in the contract amount.

Quincy College

**8.3.1** Change subparagraph 8.3.1 to read in its entirety as follows:

If the Contractor is delayed at any time in the commencement or progress of the Work solely by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes (except weather) beyond the Contractor's control, then the Contract Time shall be extended by Construction Change Directive for such reasonable time as the Architect and Owner may determine.

**8.3.1.1** Add a subparagraph 8.3.1.1 as follows:

The Contractor shall, within ten (10) days from the beginning of a delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner, in writing, of the causes of delay. The Owner shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decisions in the matter.

**8.3.3-8.3.6** Change subparagraph 8.3.3 and add new subparagraphs 8.3.4 through 8.3.6, as follows:

**8.3.3** No claim for extension of time shall be allowed on account of failure of the Architect to furnish Drawings, Specifications or instructions or to return Shop Drawings or Samples until 15 days after receipt by the Architect by registered or certified mail of written demand for such instructions, Drawings, or Samples, and not then unless such claim be reasonable.

**8.3.4** No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

**8.3.5** The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on account of any delay in the commencement of the Work and/or any hindrance, delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

**8.4** Add new Paragraph 8.4 as follows:**8.4 LIQUIDATED DAMAGES**

If the Contractor shall fail to achieve substantial Completion within the Contract Time, it shall be liable to pay the Owner the daily amount of \$2,500.00 not as a penalty, but as fixed and agreed upon damages for the Owner's administrative costs for each calendar day that the Contractor is in default after the time stipulated in the contract for completing the work. The said amount is fixed and agreed upon because of the difficulty of ascertaining the Owner's actual damages. It is mutually understood that the said amount is a reasonable approximation or estimate thereof as of the date of the Contract. The said amount may be withheld from periodic or final payments due to the Contractor, in addition to retainage and other backcharges. The foregoing shall not limit or otherwise abridge any additional remedies, recourse or right of recovery which the Owner may have at law or in equity to pursue the Contractor for damages suffered as a result of Contractor's breach of contract.

**ARTICLE 9: PAYMENTS AND COMPLETION**

9.2.1 Add at the end of the first sentence of subparagraph 9.2.1:

"and shall be revised if later found by the Architect to be inaccurate."

9.3.1.1 Change subparagraph 9.3.1.1 to read as follows:

Such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives but not yet included in Change Orders when such Construction Change Directives have set forth an adjustment to the Contract Sum.

9.3.1.2 After "material supplier", insert "because of a dispute or other reason".

9.3.2 At the end of subparagraph 9.3.2, add as follows:

The Contractor shall assume responsibility to protect all such materials from loss or damage, at no cost to the Owner, until they are finally incorporated into the work, whether or not they have been paid for by the Owner.

9.3.3 Change subparagraph 9.3.3 to read as follows:

The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to in this Article 9 as "liens." The Contractor further agrees that the submission of any Application for Payment shall conclusively be deemed to waive all liens with respect to said Work to which the Contractor may then be entitled, provided that such waiver of the lien rights shall not waive the Contractor's right to payment for such work. In addition to the provisions of subparagraph 9.6.7, the Contractor shall submit a "lien-release" from all subcontractors, suppliers and other parties supplying labor, equipment and materials to the Project.

9.3.4 Add new subparagraph 9.3.4 as follows:

9.3.4 Each Application for Payment or periodic estimate requesting payment shall be accompanied by a certificate from each Subcontractor stating that the Subcontractor has been paid all amounts due the Subcontractor on the basis of the previous periodic payment to the Contractor, or else stating the amount not so paid and the reason for the discrepancy. In the event of any such discrepancy, the Contractor shall furnish the Contractor's own written explanation to the Owner through the Architect. Such waiver or certificate shall be in a form acceptable to the Owner.

9.3.5 Add a new subparagraph 9.3.5 as follows:

Progress payments shall be made up to 95% of the proportion of the contract price properly allocable to labor, materials and equipment incorporated in the work and 95% of the portion of the contract price properly allocable to materials and equipment suitably stored at the site. The remaining 5% shall be held as a retainage until Final Completion.

9.4.2.1 Add a new subparagraph 9.4.2.1 as follows:

Within thirty (30) days from the date of approval of a Request for Payment by the Architect, the Owner shall:

1. Pay the Request for Payment as approved, or

Quincy College

2. May withhold payment in whole or in part on an approved Request for Payment to the extent necessary to protect the Owner from loss on account of any of the following causes discovered subsequent to approval of Request for Payment by the Architect, provided the Owner informs the Contractor and Architect in writing of reasons for withholding payment in whole or in part:
  - a. Defective work.
  - b. Evidence indicating the probable filing of claims by other parties against the Contractor.
  - c. Failure of the Contractor to make payments to Subcontractors, material suppliers or labor.
  - d. Damage to another Contractor or to the Owner.
  - e. For any of the reasons set forth in Article 9.5.1.

9.5.1 In subparagraph 9.5.1, change item .6 and add a new item .8 as follows:

- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that retainage currently held by the Owner would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .8 failure of mechanical trade or electrical trade subcontractors to comply with mandatory requirements for maintaining record drawings. The Contractor shall check record drawings each month. Written confirmation that the record drawings are current will be required by the Architect before approval of the Contractor's monthly payment requisition.

9.6.1 At line 1, after the word "Payment", insert the phrase "and the Owner has approved such payment".

9.6.1.1 Add a new subparagraph 9.6.1.1 as follows:

The Parties shall comply fully with the applicable provisions of General Laws Chapter 30, Section 39(a)-(i) and Section 39K to the extent required by law. Said provisions are hereby incorporated by reference and made a part of this contract as though reproduced herein.

9.6.7 Change subparagraph 9.6.7 to read in its entirety as follows:

The Owner shall make partial payment to the Contractor within 15 days of receipt of the Contractor's payment application on the basis of an Application for Payment, modified as appropriate by the Owner, certified by the Architect and approved by the Owner, provided that the estimate is submitted to the Architect by the first calendar day of the preceding month. Submission by the Contractor shall be on AIA Document G 702, most recent edition, entitled, "Application and Certificate for Payment", and AIA Document G 703, most recent edition entitled, "Continuations Sheet". In addition to amounts withheld pursuant to paragraph 9.5, the Owner shall retain 5% of the amount of each such estimate until sixty-five (65) days after final completion and acceptance of all work covered by this Contract.

9.7.1 Change 9.7.1 to read in its entirety as follows:

Notwithstanding any provisions to the contrary, the requirements of Chapter 30, sections 39F and 39G, of the General Laws are hereby incorporated by reference and made a part of this contract.

9.8.1 Change 9.8.1 to read in its entirety as follows:

Notwithstanding any provisions to the contrary, the definition for substantial completion contained in Chapter 30, Sec. 39G, shall apply throughout this contract.

Quincy College

## 9.8.2 Change subparagraph 9.8.2 to read as follows:

When the Contractor considers that the Work, or a portion thereof designated in the Contract Documents for separate completion, is substantially complete and the premises comply with subparagraph 3.15.1, the Contractor shall submit to the Architect (1) a list of items to be completed or corrected, (2) all special warranties required by the Contract Documents, endorsed by the Contractor and in a form reasonably acceptable to the Architect, and (3) the permits and certificates referred to in subparagraph 13.5.4. The failure to include any items on the list mentioned in the preceding sentence does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

## 9.8.5 At line 2, delete "acceptance and consent of the surety, if any" and replace it with "certification by the Architect and acceptance by the Owner."

## 9.9.1 Change subparagraph 9.9.1 to read as follows:

The Owner may occupy or use any completed or partially completed portion of the Work at any stage. Such partial occupancy or use may begin whether or not the portion is substantially complete, provided that the respective responsibilities of the Owner and Contractor with respect to payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work, insurance, correction of the Work, and warranties shall be established by agreement of the Owner and Contractor or, absent such agreement, shall be determined by the Architect subject to the right of either party to contest such determination as provided in Paragraph 4.5. Such normal usage of the facilities shall in no way affect the insurance coverages required under Article 11.

## 9.10.1.1 Add a subparagraph 9.10.1.1 as follows:

Notwithstanding anything in the Contract Documents to the contrary, final payment shall be made in accordance with the requirements of General laws, chapter 30, section 39K.

## 9.10.2 Insert the following at the end of the subparagraph:

"Without limiting any other conditions to final payment, as set forth in the Contract Documents, the Contractor shall be required to submit the following to the Owner as conditions to final payment:

1. Final documents of similar nature to those required by the Contract Documents for any monthly payments hereunder,
2. All final permits, approvals, (including, without limitation, the approval of the Owner's insurance company, if required) certificates (including, without limitation, certificates in respect of elevator, plumbing, sprinklers, electrical systems and life safety systems) and authorizations for use and occupancy of the Project required by any authority having jurisdiction, including an unconditioned permanent and full Certificate of Occupancy and any other necessary occupancy and use permits,
3. Formally prepared "as built" drawings, records and related data including all field notes of all the Work (such drawings shall be on "mylar" reproducible drawings, or as otherwise called for in the Contract Documents),
4. All operating and maintenance manuals, parts lists, the final version of the Project Directory, and repair source lists,
5. All guarantees and warranties to which the Owner is entitled hereunder,
6. Satisfactory proof that all claims, including taxes, arising out of the Work (including any claims of Subcontractors) have been released or bonded,

Quincy College

7. Acknowledgment of prior payments from all Subcontractors and the Contractor,
8. Certificate of insurance for product liability and completed operations, for the three-year period following final completion,
9. A final statement of accounting for the Cost of the Work in form satisfactory to the Owner,
10. If required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Owner, and
11. Delivery of all spare parts required to be submitted pursuant to the Contract Documents, and

If the final documentation submitted by the Contractor is not deemed complete by the Owner or if the Owner deems the Work incomplete in any respect, the Contractor shall promptly complete any such Work and shall promptly resubmit the final documentation.

- 9.10.3 In the first sentence of subparagraph 9.10.3, after "through no fault of the Contractor or", add "Subcontractor or". In the final line, delete the phrase "except that it shall not constitute a waiver of claims."
- 9.10.4 Delete.
- 9.10.5 Change the subparagraph to read in its entirety as follows:

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of claims and liability to the Contractor. No payment, however, final or otherwise, shall operate to release the Contractor, its insurer, or its Surety(ies) from any obligation under the contract or the Performance Bond and Payment Bond.

#### **ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY**

- 10.2.1.2 In subparagraph 10.2.1.2, delete the word "and" at the end of the subparagraph
- 10.2.1.3 In subparagraph 10.2.1.3, add the word "and" to the end of the subparagraph.
- 10.2.1.4 Add new subparagraph 10.2.1.4 as follows:

- .4 any other property of the Owner, whether or not forming part of the Work, located at the site or adjacent thereto in areas to which the Contractor has access.

- 10.2.5 Change subparagraph 10.2.5 to read as follows:

The Contractor shall promptly remedy any damage and loss to property referred to in clauses 10.2.1.2, 10.2.1.3 and 10.2.1.4. If the damage or loss is due in whole or in part to the actions and/or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed or hired by any of them or anyone for whose acts they may be liable, and/or to due to the Contractor's failure to take the precautions required by this Paragraph 10.2, the Contractor shall bear the cost, subject to any reimbursement to which the Contractor is entitled under property insurance required by the Contract Documents. The Contractor shall be fully and solely responsible for all Work and other operations carried out on adjacent properties. The insurance required under Article 11 shall cover such Work or operations, and the Contractor shall indemnify and hold harmless and shall defend the Owner, the Architect, and the owners of such adjacent properties from and against all claims, suits, losses, liabilities or costs arising out of such Work or operations.

10.2.8- 10.2.12 Add new subparagraphs 10.2.8 through 10.2.14 as follows:

10.2.8 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

10.2.9 The Contractor shall at all times protect excavations, trenches, buildings and materials from rain water, ground water, backup or leakage of sewers, drains and other piping, and from water of any other origin, and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

10.2.10 The Contractor shall remove snow and ice which might result in damage or delay.

10.2.11 The Contractor shall install weather protection and furnish adequate heat in the protected area from November 1 to March 13.

10.2.12 The Contractor shall provide, within the Contract Sum, a sufficient number of watchmen at the Site at all times when the Contractor's personnel are not present, from commencement of Work until Substantial Completion, to assure that the Work, and all materials and equipment stored at the Site, are fully and completely protected against loss or damage due to vandalism, theft, or malicious mischief. If the Contractor elects, in addition, to use guard dogs for this purpose, each dog shall at all times be accompanied by an adult handler. If the Contractor fails to comply with the requirements of this Subparagraph 10.2.12, then the Owner may provide appropriate security, and charge the cost thereof to the Contractor. The Owner's provision of such security, or failure to do so, shall not relieve the Contractor of its sole responsibility to pay for loss or damage due to vandalism, theft, or malicious mischief at the Site.

10.2.13 The Contractor shall protect and maintain in operation all pipelines, conduits, sewers, drains, poles, wiring and the like whether or not they interfere with the work and, whether or not they are specifically shown on the drawings. The Contractor shall see that all such items are protected, supported and/or adjusted as necessary to accommodate the new work. Any items adjusted temporarily shall be promptly and fully restored as soon as the progress of the work allows.

10.2.14 During any flame cutting and/or welding operation, incombustible curtains and blankets shall be used to intercept and catch hot metal, sparks and burning embers. The Contractor shall employ a watchperson, equipped with portable fire extinguishing equipment, to maintain a fire watch continuously during all flame cutting and welding operation and for 4 hours minimum thereafter. No flammable rubbish or liquid shall be kept in any part of the buildings, except one-gallon quantities in approved safety cans or sealed metal containers. All fire doors shall be kept clear of rubbish and in operating condition, and closed during non-working hours. The Contractor shall not allow any locking and blocking of any door in the building, except entrance doors, during non-working hours. Used construction materials, solvent soaked rags, empty volatile containers and any other material or container which may be combustible shall be removed from the construction site daily and at the end of the work.

10.3.2 At the beginning of the subparagraph, insert the following:

If the Contractor, its subcontractors and any and all other entities for whom the Contractor is responsible are without fault for the presence of hazardous material and/or substance on the site, and has done nothing to exacerbate the presence or effect of such hazardous material and/or substance, then

At line 9, replace the phrase "material or substance has been rendered harmless" with the phrase "work site is safe from such material or substance"

10.3.3 Delete in its entirety.

10.5 Delete in its entirety.

10.6.1 At the end of subparagraph 10.6.1, add the following:

The Contractor shall furnish the Owner and Architect, in writing, the names, addresses and telephone numbers of all members of his organization who are to be contacted in the event of an after-hours emergency.

10.7 Add a new paragraph as follows: In the event of a temporary suspension of work, or during inclement weather, the Contractor shall and shall cause Subcontractors to carefully protect work and materials against damage or injury from the weather. If in the opinion of the Architect, work or materials have been damaged or injured by reason of failure on the part of the Contractor or Subcontractor to protect work, the damaged materials shall be removed and replaced at the expense of the Contractor.

## ARTICLE 11: INSURANCE AND BONDS

11.1.1 In the first sentence of subparagraph 11.1.1 following the word "located" insert the words "and to which the Owner has no reasonable objection".

11.1.1.9 Add a new subparagraph 11.1.1.9 as follows: The Contractor shall, before commencing performance of this Contract, provide by insurance for the payment of compensation and the furnishing of other benefits as required under the laws applicable to the project site to all persons to be employed under the Contract. Failure to provide and continue in force such insurance shall be deemed a material breach of the Contract and shall operate as an immediate termination thereof.

11.1.2 Change subparagraph 11.1.2 to read as follows: 11.1.2 The insurance required by subparagraph 11.1.1 shall be written for not less than the limits of liability specified in the Contract Document or required by law, which ever is greater. Coverage shall be written on a Commercial General Liability Policy Form and include Premises and Operations (including X,C,U hazards), Owners' and Contractors' Protective, Products and Completed Operations. Commercial Automobile Liability shall include all owned, non-owned and hired autos. The following minimum limits shall apply:

### Employer's Liability:

Bodily Injury by Accident	\$500,000	Each Accident
Bodily Injury by Disease	\$500,000	Each Employee
Bodily Injury by Disease	\$500,000	Policy Limit

### Commercial General Liability:

General Aggregate	\$5,000,000
Products & Completed Operations Aggregate	\$2,000,000
Personal & Advertising Injury	\$2,000,000
Each Occurrence	\$2,000,000
Fire Damage Liability	\$ 500,000
Medical Payments (each person)	\$ 10,000

\*Owner shall be named as an Additional Insured with respect to all operations of the Contractor.

\*Per Project/General Aggregate Limit is required (must name the project)

Commercial Automobile:		
Bodily Injury & Property Damage (Combined Single Limit)		\$2,000,000
Include all owned, non-owned and hired autos		
Umbrella Liability:		
General Aggregate		\$10,000,000
Products & Completed Operations Aggregate		\$ 5,000,000
Each Occurrence Limit		\$ 5,000,000

All policies of insurance shall be written on an occurrence policy form ("claims-made" is unacceptable) and shall be maintained without interruption from the date of commencement of the Work until at least ninety days after the final date of completion and acceptance of the Work.

11.1.2 Contractor will maintain completed Operators and Product Liability insurance in an amount acceptable to the Owner for one (1) year after substantial completion and will provide Owner with copies of binders and policies for such insurance. Coverage shall include broken glass in new work and existing buildings.

11.1.2.1 –

11.1.2.6 Add the following new subparagraphs 11.1.2.1 through 11.1.2.6 as follows:

11.1.2.1. The Contractor shall procure and maintain during the contract time, in accordance with the provisions of the laws of the Commonwealth of Massachusetts, Workers Compensation Insurance, including Employers Liability for employees at the site of the Project and in case any work is sublet, the Contractor shall require Subcontractors similarly to provide Worker's Compensation insurance, including Employers Liability of the Subcontractor's employees unless the employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under the contract at the site of the Project is legally exempt from the Workers Compensation statute, the contractor shall provide, and shall cause each Subcontractor to provide, adequate and suitable insurance for the protection of employees not otherwise protected.

11.1.2.2. The certificate holder shall be the City of Quincy.

11.1.2.3 Failure to provide and continue in force insurance shall be deemed a material breach of the Contract.

11.1.2.4 Each Subcontractor and Sub-subcontractor shall purchase and maintain the insurance required by the provisions of Paragraph 11.1 in the amount and type at least equal to that required of the Contractor and provisions of Article 11 shall be equally applicable to them. Each Subcontractor and Sub-subcontractor shall be required to furnish the certificates of such insurance to the Owner and to the Architect, unless such shall be included in the certifications submitted by the Contractor and approved by the Owner.

11.1.2.5 The Contractor shall give prompt written notice to the Owner of all occurrences under the coverages of Article 11.

11.1.2.6 The Owner and Architect shall be listed as additional entities insured on the certificate. The Owner and Contractor intend that any policy provided in response to Article 11 shall protect all of the parties insured and provide primary coverage for all losses and damages caused by the perils covered thereby. Accordingly, all such policies shall contain provisions to the affect that in the event of payment of any loss or damage the insurer will have no rights or recovery against any of the parties named as insured or additional insured.

Quincy College

11.1.3 Change the first sentence of subparagraph 11.1.3 to read as follows:

Certificates of Insurance acceptable to the Owner and confirming the insurance coverage required by Paragraph 11.1 are attached to the Contract. The Owner shall have no obligation to execute the Contract, and may award the Contract to the next lowest responsible and responsive bidder, if such insurance certificates have not been provided to the Owner within five business days after presentation of the Contract to the Contractor for execution.

Add the following between second and third sentences of subparagraph 11.1.3:

These certificates shall set forth evidence of all coverage required by 11.1.1 and 11.1.2. The form of certificate shall be the ACORD form, supplemented as necessary by AIA Document G715. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending limits of coverage.

11.1.6 All costs relating to required insurance coverages by Contractor, including bonds as set forth in Section 11.5.1, are included in the Contract Sum.

11.3 Change paragraph to read as follows:

“Each policy of insurance, and the certificate or other evidence thereof, required to be purchased and maintained by the Contractor under this Article 11 shall contain a provision or endorsement that the coverage afforded will not be cancelled or materially amended and no renewal will be refused unless and until at least thirty (30) days’ prior written notice has been given to the Owner.” The Contractor and all parties claiming by, through or under the Contractor shall have no claim against the Owner on account of the Owner’s failure to provide such property insurance. The Contractor shall promptly replace all damaged Work in which it or its Subcontractors and Sub-subcontractors have an insurable interest, and all Work which is stolen, vandalized, or damaged due to the Contractor’s failure to protect the Site as required by Article 10, at no additional cost to the Owner.

11.4.1: Line 1, Delete the word “Owner” and insert “Contractor” in its place.

11.4.1.1: Line 5, delete the word “Contractor’s” and insert “Owner’s” in its place

Add the following sentence at the conclusion of the subparagraph: The form of policy for this coverage shall be acceptable to the Owner.

11.4.1.2: Delete this provision in its entirety.

11.4.1.3: Delete this provision in its entirety and insert the following in its place:

If the property insurance involves any deductible amount, the Contractor shall bear the cost not covered because of such deductible.

11.4.1.4: Delete this provision in its entirety and insert the following:

This property insurance shall cover portions of the Work stored off-site and in transit, unless otherwise provided in the Contract Documents.

11.4.1.5: Delete in its entirety and insert the following:

The building shall be occupied by the Owner during the work. Insurance shall not lapse or be canceled on account of this occupancy. The insurance certificates required under this Contract shall include this requirement.

11.4.2: Delete this provision in its entirety.

Quincy College

- 11.4.3: Delete the final sentence of the subparagraph.
- 11.4.4: Delete this subparagraph in its entirety.
- 11.4.5: Delete this subparagraph in its entirety.
- 11.4.6: Delete this subparagraph in its entirety and insert the following:
- Prior to execution of the contract, the Contractor shall file with the Owner a copy of each policy that includes insurance coverages required by this Paragraph 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days prior written notice have been given to the Owner.
- 11.4.7: Delete in its entirety.
- 11.4.8: Lines 1-3, delete "A loss insured under ... and of Subparagraph 11.4.1 0."
- 11.4.9: Delete this subparagraph in its entirety and insert the following:
- The Owner shall have the power to adjust and settle with its insurers any loss for which it has obtained insurance pursuant to the article 11.2.1.
- 11.4.10: Delete this subparagraph in its entirety and insert the following:
- Upon the occurrence of an insured loss the Owner and the Contractor shall cooperate with each other and with each other's insurer in the submission of the claims and related information and the distribution of any insurance proceeds.
- 11.5.1 The Contractor shall obtain 100% payment and performance bonds for the Work as well as a statutory lien bond equal to 100% of the Contract Sum. Such bonds shall be dual Obligee naming Owner and the Owner's construction lender. Bonds must be obtained through a surety acceptable to the Owner, and legally registered to do business in the locality of the Work. The cost thereof shall be included in the contract Sum. The amount of each bond shall be equal to 100 percent of the Contract Sum.
- 11.5.1.1-11.5.1.4: Add four new sub-subparagraphs as follows:
- 11.5.1.1. The Contractor shall deliver the required bonds to the Owner not later than five (5) days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.
- 11.5.1.2. The Contractor shall furnish in a form satisfactory to the Owner performance bond in an amount at least equal to one hundred percent (100%) of the Contract price as security for the faithful performance of the contract and also a labor and materials payment bond in an amount not less than one hundred percent (100%) of the Contract price as security for the payment of persons performing labor on the project under the Contract and furnishing materials in connection with the Contract.
- 11.5.1.3. The sureties of bond shall be surety company or companies as are approved by the owner, and as are authorized to transact business in the Commonwealth of Massachusetts.
- 11.5.1.4. The Contractor shall require the attorney-in-fact who executes the required bonds on behalf on the surety to affix thereto a certified and current copy of the power of attorney.

11.5.3 Add the following new provision:

"If at any time prior to final payment to the Contractor the Surety (a) is adjudged bankrupt or has made a general assignment for the benefit of its creditors; (b) has liquidated all assets and has made a general assignment for the benefit of its creditors; (c) is placed in receivership; (d) otherwise petitions a state or federal court for protection from its creditors; or (e) allows its license to do business in Massachusetts to lapse or be revoked; the Contractor shall, within 21 days of any such action listed above, provide the Owner with new performance and payment bonds in the amounts and forms required by the Contract Documents. Such bonds shall be provided at the Contractor's sole expense."

**ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**

12.1.2 At line 5-6, delete the remainder of the sentence after the words "unless the condition".

Add the following at the conclusion of the subparagraph:

If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Paragraph 2.4. If the Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from the Architect, the Owner may remove it and store the savable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of the such removal and storage within ten days after written notice, the Owner may upon ten additional days' written notice sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including payment for the Architect's services and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

12.2.1.1 At the end of subparagraph 12.2.1.1, add the following:

"in addition to any cost, loss, or damages to the Owner resulting from such failure or defect."

12.2.2.1 In the first line, substitute the phrase "one year"

12.2.2.1: Substitute "two year" for the phrase "one year" where it appears in the first line.

At line 1, after "Paragraph 3.5," insert "and elsewhere in the Contract Documents."

At lines 6-9, delete the second and third sentences in their entirety.

12.2.2.2: Substitute "two year" for the phrase "one year" where it appears in the first line.

12.2.2.3 Delete this provision in its entirety and insert the following in its place:

The two year period for correction of Work shall be extended by corrective Work performed by the Contractor pursuant to this Paragraph 12.2

12.2.5 Renumber subparagraph 12.2.5 as new subparagraph 12.2.6.

Add the following as new subparagraph 12.2.5:

If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Paragraph 2.4. If the Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from the Architect, the Owner may remove it and store the salvable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten days

after written notice, the Owner may upon ten additional days' written notice sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Architect's services and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

### ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1.1.1- 13.1.1.6 Add the following six additional paragraphs:

13.1.1.1. The Contract shall be governed by the laws of the Commonwealth of Massachusetts.

13.1.1.2. The Contractor shall comply with applicable federal, state and local laws, ordinances and codes.

13.1.1.3. If the Contract Documents are in contradiction with applicable laws, then the contractor shall notify the Architect immediately and before proceeding with the Work.

13.1.1.4. If the Contract Documents exceed the requirements of applicable laws, but are not in contradiction with the laws, then the Contract Documents shall take precedence over the applicable laws for the specific requirement.

13.1.1.5. Neither party to the contract may assign the contract in whole or in part without prior written consent of the other. Such assignment by the Contractor without the prior written consent of the Owner shall be deemed a material breach of the Contract.

13.1.1.6. Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate of 6% (six percent) per annum.

13.2.2 Delete subparagraph 13.2.2.

13.3.1 Delete subparagraph 13.3.2 in its entirety and insert the following in its place:

Notices shall be deemed sufficient if mailed, first class, postage prepaid or delivered by hand to the following addresses:

FOR OWNER

FOR CONTRACTOR

13.4.2 Add the following at the end of the subparagraph:

“Nor shall forbearance or indulgence in any form or manner by the Owner be construed as a waiver or in any way limit the legal or equitable remedies available to the Owner. No waiver by the Owner of any default or breach shall constitute a waiver of any subsequent default or breach.”

13.5.4 Change subparagraph 13.5.4 to read as follows:

The Contractor shall obtain and deliver promptly to the Architect any occupancy permit and any certificates of final inspection of any part of the Contractor's work and operating permits for any mechanical apparatus, such as elevators, escalators, boilers, air compressors, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the Architect shall be a condition precedent to Substantial Completion of the Work.

Quincy College

13.6.1 Delete this subparagraph in its entirety.

13.7 Change Paragraph 13.7 to read as follows:

#### 13.7 STATUTORY LIMITATION PERIOD

13.7.1 It is expressly agreed that the obligations of the Contract hereinafter arise out of contractual duties, and that the failure of the Contractor to comply with the requirements of the Contract Documents shall constitute a breach of contract, not a tort, for the purpose of applicable statutes of limitation and repose. Any cause of action which the Owner may have on account of such failure shall be deemed to accrue only when the Owner has obtained actual knowledge of such failure, not before.

13.8- 13.10 Add the following three provisions:

#### 13.8: RECORDS

13.8.1. The Contractor shall comply fully with the applicable requirements of Chapter 30, Section 39R, of the Massachusetts General laws, which shall be incorporated by reference and made a part of the contract.

#### 13.9: CONFIDENTIALITY

13.9.1. The Contractor shall protect the privacy of, and respect the confidentiality of, information provided by the program participants consistent with applicable federal and state regulations, including General Law Chapter 66, Section 10, regarding access to public records.

#### 13.10: SEVERABILITY

13.10.1. If any provision of the contract is held invalid, the remainder of the Contract shall not be affected thereby, and other parts of the contract shall nevertheless be in full force and effect.

### **ARTICLE 14: TERMINATION OF THE CONTRACT**

14.1.1 Delete.

14.1.2 Delete.

14.1.3 Delete.

14.1.4 In line 5, delete "and recover from the Owner as provided in subparagraph 14.1.3."

14.1.4.1 Add a new subparagraph 14.1.4.1 as follows:

Notwithstanding any provision to the contrary, the parties shall comply fully with the applicable requirements of Chapter 0, Section 390, of the General Laws, which shall be incorporated by reference and made a part of the contract.

14.2 Change paragraph 14.2 to read as follows:

#### 14.2 TERMINATION BY THE OWNER

14.2.1 If the Contractor is adjudged bankrupt, or if the Contractor makes a general assignment for the benefit of the Contractor's creditors, or if a receiver is appointed on account of the Contractor's insolvency, or if the Contractor persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if the Contractor fails to make prompt payment to Subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules,

regulations or orders of any public authority having jurisdiction or disregards an instruction, order or decision of the Architect, or otherwise is guilty of a substantial violation of any provision of the Contract, then the Contractor shall be in default, and the Owner may, without prejudice to any other right or remedy and upon written notice to the Contractor, take possession of all materials, tools, appliances, equipment, construction equipment and machinery and vehicles, offices and other facilities on the Project site, and all materials intended for the Work, wherever stored, and, seven (7) days after such notice, may terminate the employment of the Contractor, accept assignment of any or all subcontracts pursuant to Paragraph 5.4, and finish the Work by whatever method the Owner may deem expedient. The Owner shall be entitled to collect from the Contractor all direct, indirect, and consequential damages suffered by the Owner on account of the Contractor's default, including without limitation additional services and expenses of the Architect made necessary thereby. The Owner shall be entitled to hold all amounts due the Contractor at the date of termination until all of the Owner's damages have been established, and to apply such amounts to such damages. When the Owner terminates the Contract for one of the reasons set forth herein, the Contractor shall not be entitled to receive further payment until the Work is finished.

14.2.2-14.2.3 Delete subparagraphs 14.2.2 and 14.2.3.

14.2.4 Delete and replace with the following:

"If, after final completion of the Work, the Owner determines that the unpaid amount (if any) due to the Contractor for the portion of the Work performed by the Contractor exceeds any costs and damages incurred by the Owner as the result of the Contractor's breach of this Agreement, such excess shall be paid to the Contractor. If the costs and damages incurred by the Owner as the result of the Contractor's breach of this Agreement exceeds the unpaid amount (if any) due to the Contractor for the portion of the Work performed by the Contractor, the Contractor shall pay such excess on demand."

14.3.2 Delete subparagraph 14.3.2 in its entirety.

14.4.3 Change subparagraph to read as follows:

"In the event of such termination for the Owner's convenience, the Contractor shall be compensated only for Work executed and accepted in accordance with the Contract Documents prior to termination, together with reasonable demobilization expenses (provided that there are appropriated Project funds available for such demobilization expenses). The Owner, however, shall not compensate the Contractor for lost profits, overhead expenses, termination expenses, or other such costs or expenses."

**End of Document**

Quincy College

**DOCUMENT 007343**

**WAGE RATE REQUIREMENTS**

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

- A. The Wage Rate Schedule appended to this Document, obtained by the Awarding Authority for this Project, is current as published by the Commonwealth of Massachusetts, Department of Labor and Occupational Safety.

**End of Document**



DEVAL L. PATRICK  
Governor  
TIMOTHY P. MURRAY  
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DEPARTMENT OF LABOR STANDARDS

**Prevailing Wage Rates**

As determined by the Director under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

JOANNE F. GOLDSTEIN  
Secretary  
HEATHER E. ROWE  
Director

**Awarding Authority:** City of Quincy  
**Contract Number:** **City/Town:** QUINCY  
**Description of Work:** SAVILLE HALL INTERIOR ALTERATIONS - Demolition, interior partitions, doors, science lab tables and cabinets, plumbing, fire protection, HVAC, electrical work and interior finishes.  
**Job Location:** 24 SAVILLE AVE

---

**Information about Prevailing Wage Schedules for Awarding Authorities and Contractors**

- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.
- Awarding authorities must request an updated wage schedule from the Department of Labor Standards (“DLS”) if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. Once a contractor has been selected by the awarding authority, the wage schedule shall be made a part of the contract for that project. The wage schedule must be posted in a conspicuous place at the work site during the life of the project in accordance with M.G.L. c. 149, § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project regardless of whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- All apprentices must be registered with the Massachusetts Division of Apprenticeship Training (DAT) in order to be paid at the lower apprentice rates. All apprentices must keep his/her apprentice identification card on his/her person during all work hours. If a worker is not registered with DAT, he/she must be paid the "total rate" listed on the wage schedule regardless of experience or skills.
- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F “rental of equipment” contracts.
- Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports directly to the awarding authority and keep them on file for three years. Each weekly payroll report must contain: the employee’s name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2012	\$31.55	\$8.91	\$8.00	\$0.00	\$48.46
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2012	\$31.62	\$8.91	\$8.00	\$0.00	\$48.53
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2012	\$31.74	\$8.91	\$8.00	\$0.00	\$48.65
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2012	\$82.32	\$9.80	\$17.67	\$0.00	\$109.79
	08/01/2013	\$85.47	\$9.80	\$17.67	\$0.00	\$112.94
	08/01/2014	\$88.62	\$9.80	\$17.67	\$0.00	\$116.09
	08/01/2015	\$91.77	\$9.80	\$17.67	\$0.00	\$119.24
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2012	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	06/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	12/01/2013	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	06/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	12/01/2014	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	06/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	12/01/2015	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	06/01/2016	\$38.30	\$7.10	\$12.45	\$0.00	\$57.85
	12/01/2016	\$39.30	\$7.10	\$12.45	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>ASBESTOS WORKERS LOCAL 6 (BOSTON)</i>	12/01/2012	\$29.08	\$10.40	\$5.95	\$0.00	\$45.43
	06/01/2013	\$29.88	\$10.40	\$5.95	\$0.00	\$46.23
	12/01/2013	\$30.68	\$10.40	\$5.95	\$0.00	\$47.03
	06/01/2014	\$31.58	\$10.40	\$5.95	\$0.00	\$47.93
	12/01/2014	\$32.48	\$10.40	\$5.95	\$0.00	\$48.83
	06/01/2015	\$33.43	\$10.40	\$5.95	\$0.00	\$49.78
	12/01/2015	\$34.38	\$10.40	\$5.95	\$0.00	\$50.73
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$40.09	\$10.00	\$13.02	\$0.00	\$63.11
	06/01/2013	\$40.87	\$10.00	\$13.02	\$0.00	\$63.89
	12/01/2013	\$41.65	\$10.00	\$13.02	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$40.09	\$10.00	\$13.02	\$0.00	\$63.11
	06/01/2013	\$40.87	\$10.00	\$13.02	\$0.00	\$63.89
	12/01/2013	\$41.65	\$10.00	\$13.02	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	12/01/2012	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	06/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	12/01/2013	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	06/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	12/01/2014	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	06/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	12/01/2015	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	06/01/2016	\$38.30	\$7.10	\$12.45	\$0.00	\$57.85
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2010	\$37.70	\$6.97	\$11.18	\$0.00	\$55.85

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2010**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
2	65	\$24.51	\$6.97	\$11.18	\$0.00	\$42.66
3	70	\$26.39	\$6.97	\$11.18	\$0.00	\$44.54
4	75	\$28.28	\$6.97	\$11.18	\$0.00	\$46.43
5	80	\$30.16	\$6.97	\$11.18	\$0.00	\$48.31
6	85	\$32.05	\$6.97	\$11.18	\$0.00	\$50.20
7	90	\$33.93	\$6.97	\$11.18	\$0.00	\$52.08
8	95	\$35.82	\$6.97	\$11.18	\$0.00	\$53.97

Notes:

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (QUINCY)</i>	08/01/2012	\$47.41	\$10.18	\$17.25	\$0.00	\$74.84
	02/01/2013	\$47.41	\$10.18	\$17.83	\$0.00	\$75.42
	08/01/2013	\$48.31	\$10.18	\$17.90	\$0.00	\$76.39
	02/01/2014	\$48.87	\$10.18	\$17.90	\$0.00	\$76.95
	08/01/2014	\$49.77	\$10.18	\$17.97	\$0.00	\$77.92
	02/01/2015	\$50.33	\$10.18	\$17.97	\$0.00	\$78.48
	08/01/2015	\$51.23	\$10.18	\$18.04	\$0.00	\$79.45
	02/01/2016	\$51.80	\$10.18	\$18.04	\$0.00	\$80.02
	08/01/2016	\$52.70	\$10.18	\$18.12	\$0.00	\$81.00
	02/01/2017	\$53.27	\$10.18	\$18.12	\$0.00	\$81.57

**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Quincy**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$10.18	\$17.25	\$0.00	\$51.14
2	60	\$28.45	\$10.18	\$17.25	\$0.00	\$55.88
3	70	\$33.19	\$10.18	\$17.25	\$0.00	\$60.62
4	80	\$37.93	\$10.18	\$17.25	\$0.00	\$65.36
5	90	\$42.67	\$10.18	\$17.25	\$0.00	\$70.10

**Effective Date - 02/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$10.18	\$17.83	\$0.00	\$51.72
2	60	\$28.45	\$10.18	\$17.83	\$0.00	\$56.46
3	70	\$33.19	\$10.18	\$17.83	\$0.00	\$61.20
4	80	\$37.93	\$10.18	\$17.83	\$0.00	\$65.94
5	90	\$42.67	\$10.18	\$17.83	\$0.00	\$70.68

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2012	\$33.45	\$7.10	\$12.60	\$0.00	\$53.15
	06/01/2013	\$34.20	\$7.10	\$12.60	\$0.00	\$53.90
	12/01/2013	\$34.95	\$7.10	\$12.60	\$0.00	\$54.65
	06/01/2014	\$35.70	\$7.10	\$12.60	\$0.00	\$55.40
	12/01/2014	\$36.45	\$7.10	\$12.60	\$0.00	\$56.15
	06/01/2015	\$37.20	\$7.10	\$12.60	\$0.00	\$56.90
	12/01/2015	\$37.95	\$7.10	\$12.60	\$0.00	\$57.65
	06/01/2016	\$38.70	\$7.10	\$12.60	\$0.00	\$58.40
	12/01/2016	\$39.70	\$7.10	\$12.60	\$0.00	\$59.40

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2012	\$32.30	\$7.10	\$12.60	\$0.00	\$52.00
	06/01/2013	\$33.05	\$7.10	\$12.60	\$0.00	\$52.75
	12/01/2013	\$33.80	\$7.10	\$12.60	\$0.00	\$53.50
	06/01/2014	\$34.55	\$7.10	\$12.60	\$0.00	\$54.25
	12/01/2014	\$35.30	\$7.10	\$12.60	\$0.00	\$55.00
	06/01/2015	\$36.05	\$7.10	\$12.60	\$0.00	\$55.75
	12/01/2015	\$36.80	\$7.10	\$12.60	\$0.00	\$56.50
	06/01/2016	\$37.55	\$7.10	\$12.60	\$0.00	\$57.25
	12/01/2016	\$38.55	\$7.10	\$12.60	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2012	\$32.30	\$7.10	\$12.60	\$0.00	\$52.00
	06/01/2013	\$33.05	\$7.10	\$12.60	\$0.00	\$52.75
	12/01/2013	\$33.80	\$7.10	\$12.60	\$0.00	\$53.50
	06/01/2014	\$34.55	\$7.10	\$12.60	\$0.00	\$54.25
	12/01/2014	\$35.30	\$7.10	\$12.60	\$0.00	\$55.00
	06/01/2015	\$36.05	\$7.10	\$12.60	\$0.00	\$55.75
	12/01/2015	\$36.80	\$7.10	\$12.60	\$0.00	\$56.50
	06/01/2016	\$37.55	\$7.10	\$12.60	\$0.00	\$57.25
	12/01/2016	\$38.55	\$7.10	\$12.60	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	09/01/2012	\$33.48	\$9.80	\$15.61	\$0.00	\$58.89
	03/01/2013	\$33.92	\$9.80	\$15.61	\$0.00	\$59.33
	09/01/2013	\$34.53	\$9.80	\$15.61	\$0.00	\$59.94
	03/01/2014	\$35.13	\$9.80	\$15.61	\$0.00	\$60.54
	09/01/2014	\$35.90	\$9.80	\$15.61	\$0.00	\$61.31
	03/01/2015	\$36.67	\$9.80	\$15.61	\$0.00	\$62.08

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date - 09/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.74	\$9.80	\$1.57	\$0.00	\$28.11
2	60	\$20.09	\$9.80	\$1.57	\$0.00	\$31.46
3	70	\$23.44	\$9.80	\$10.90	\$0.00	\$44.14
4	75	\$25.11	\$9.80	\$10.90	\$0.00	\$45.81
5	80	\$26.78	\$9.80	\$12.47	\$0.00	\$49.05
6	80	\$26.78	\$9.80	\$12.47	\$0.00	\$49.05
7	90	\$30.13	\$9.80	\$14.04	\$0.00	\$53.97
8	90	\$30.13	\$9.80	\$14.04	\$0.00	\$53.97

**Effective Date - 03/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.96	\$9.80	\$1.57	\$0.00	\$28.33
2	60	\$20.35	\$9.80	\$1.57	\$0.00	\$31.72
3	70	\$23.74	\$9.80	\$10.90	\$0.00	\$44.44
4	75	\$25.44	\$9.80	\$10.90	\$0.00	\$46.14
5	80	\$27.14	\$9.80	\$12.47	\$0.00	\$49.41
6	80	\$27.14	\$9.80	\$12.47	\$0.00	\$49.41
7	90	\$30.53	\$9.80	\$14.04	\$0.00	\$54.37
8	90	\$30.53	\$9.80	\$14.04	\$0.00	\$54.37

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

CEMENT MASONRY/PLASTERING	08/01/2012	\$42.42	\$10.50	\$18.61	\$1.30	\$72.83
BRICKLAYERS LOCAL 3 (QUINCY)	02/01/2013	\$42.87	\$10.50	\$18.61	\$1.30	\$73.28
	08/01/2013	\$43.62	\$10.50	\$18.61	\$1.30	\$74.03
	02/01/2014	\$44.05	\$10.50	\$18.61	\$1.30	\$74.46
	08/01/2014	\$44.80	\$10.50	\$18.61	\$1.30	\$75.21
	02/01/2015	\$45.23	\$10.50	\$18.61	\$1.30	\$75.64
	08/01/2015	\$45.98	\$10.50	\$18.61	\$1.30	\$76.39
	02/01/2016	\$46.43	\$10.50	\$18.61	\$1.30	\$76.84
	08/01/2016	\$47.18	\$10.50	\$18.61	\$1.30	\$77.59
	02/01/2017	\$47.63	\$10.50	\$18.61	\$1.30	\$78.04

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.21	\$10.50	\$12.11	\$1.30	\$45.12
2	60	\$25.45	\$10.50	\$13.61	\$1.30	\$50.86
3	65	\$27.57	\$10.50	\$14.61	\$1.30	\$53.98
4	70	\$29.69	\$10.50	\$15.61	\$1.30	\$57.10
5	75	\$31.82	\$10.50	\$16.61	\$1.30	\$60.23
6	80	\$33.94	\$10.50	\$17.61	\$1.30	\$63.35
7	90	\$38.18	\$10.50	\$18.61	\$1.30	\$68.59

**Effective Date - 02/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.44	\$10.50	\$12.11	\$1.30	\$45.35
2	60	\$25.72	\$10.50	\$13.61	\$1.30	\$51.13
3	65	\$27.87	\$10.50	\$14.61	\$1.30	\$54.28
4	70	\$30.01	\$10.50	\$15.61	\$1.30	\$57.42
5	75	\$32.15	\$10.50	\$16.61	\$1.30	\$60.56
6	80	\$34.30	\$10.50	\$17.61	\$1.30	\$63.71
7	90	\$38.58	\$10.50	\$18.61	\$1.30	\$68.99

**Notes:**  
Steps are 6000 hours

**Apprentice to Journeyworker Ratio:1:3**

CHAIN SAW OPERATOR LABORERS - ZONE 1	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES OPERATING ENGINEERS LOCAL 4	12/01/2012	\$41.09	\$10.00	\$13.02	\$0.00	\$64.11
	06/01/2013	\$41.87	\$10.00	\$13.02	\$0.00	\$64.89
	12/01/2013	\$42.65	\$10.00	\$13.02	\$0.00	\$65.67

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

COMPRESSOR OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2012	\$28.17	\$10.00	\$13.02	\$0.00	\$51.19
	06/01/2013	\$28.72	\$10.00	\$13.02	\$0.00	\$51.74
	12/01/2013	\$29.27	\$10.00	\$13.02	\$0.00	\$52.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) PAINTERS LOCAL 35 - ZONE 2	01/01/2013	\$45.01	\$7.80	\$15.60	\$0.00	\$68.41
---	------------	---------	--------	---------	--------	---------

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 01/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.51	\$7.80	\$0.00	\$0.00	\$30.31
2	55	\$24.76	\$7.80	\$3.52	\$0.00	\$36.08
3	60	\$27.01	\$7.80	\$3.84	\$0.00	\$38.65
4	65	\$29.26	\$7.80	\$4.16	\$0.00	\$41.22
5	70	\$31.51	\$7.80	\$13.68	\$0.00	\$52.99
6	75	\$33.76	\$7.80	\$14.00	\$0.00	\$55.56
7	80	\$36.01	\$7.80	\$14.32	\$0.00	\$58.13
8	90	\$40.51	\$7.80	\$14.96	\$0.00	\$63.27

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

DEMO: ADZEMAN LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	\$0.00	\$51.35
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.80	\$7.10	\$12.45	\$0.00	\$52.35
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS LABORERS - ZONE 1	12/01/2011	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 1	12/01/2011	\$32.80	\$7.10	\$12.45	\$0.00	\$52.35
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	\$0.00	\$51.35
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER PILE DRIVER LOCAL 56 (ZONE 1)	08/01/2012	\$54.88	\$9.80	\$17.67	\$0.00	\$82.35
	08/01/2013	\$56.98	\$9.80	\$17.67	\$0.00	\$84.45
	08/01/2014	\$59.08	\$9.80	\$17.67	\$0.00	\$86.55
	08/01/2015	\$61.18	\$9.80	\$17.67	\$0.00	\$88.65
DIVER TENDER PILE DRIVER LOCAL 56 (ZONE 1)	08/01/2012	\$54.88	\$9.80	\$17.67	\$0.00	\$82.35
	08/01/2013	\$56.98	\$9.80	\$17.67	\$0.00	\$84.45
	08/01/2014	\$59.08	\$9.80	\$17.67	\$0.00	\$86.55
	08/01/2015	\$61.18	\$9.80	\$17.67	\$0.00	\$88.65

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2012	\$58.80	\$9.80	\$17.67	\$0.00	\$86.27
	08/01/2013	\$61.05	\$9.80	\$17.67	\$0.00	\$88.52
	08/01/2014	\$63.30	\$9.80	\$17.67	\$0.00	\$90.77
	08/01/2015	\$65.55	\$9.80	\$17.67	\$0.00	\$93.02
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2012	\$82.32	\$9.80	\$17.67	\$0.00	\$109.79
	08/01/2013	\$85.47	\$9.80	\$17.67	\$0.00	\$112.94
	08/01/2014	\$88.62	\$9.80	\$17.67	\$0.00	\$116.09
	08/01/2015	\$91.77	\$9.80	\$17.67	\$0.00	\$119.24
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	09/01/2012	\$42.81	\$13.00	\$14.13	\$0.00	\$69.94
	03/01/2013	\$43.52	\$13.00	\$14.16	\$0.00	\$70.68
	09/01/2013	\$44.20	\$13.00	\$14.18	\$0.00	\$71.38
	03/01/2014	\$44.92	\$13.00	\$14.20	\$0.00	\$72.12
	09/01/2014	\$45.60	\$13.00	\$14.22	\$0.00	\$72.82
	03/01/2015	\$46.32	\$13.00	\$14.24	\$0.00	\$73.56
	09/01/2015	\$47.27	\$13.00	\$14.27	\$0.00	\$74.54
	03/01/2016	\$48.23	\$13.00	\$14.30	\$0.00	\$75.53
For apprentice rates see "Apprentice- ELECTRICIAN"						
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	09/01/2012	\$42.81	\$13.00	\$14.13	\$0.00	\$69.94
	03/01/2013	\$43.52	\$13.00	\$14.16	\$0.00	\$70.68
	09/01/2013	\$44.20	\$13.00	\$14.18	\$0.00	\$71.38
	03/01/2014	\$44.92	\$13.00	\$14.20	\$0.00	\$72.12
	09/01/2014	\$45.60	\$13.00	\$14.22	\$0.00	\$72.82
	03/01/2015	\$46.32	\$13.00	\$14.24	\$0.00	\$73.56
	09/01/2015	\$47.27	\$13.00	\$14.27	\$0.00	\$74.54
	03/01/2016	\$48.23	\$13.00	\$14.30	\$0.00	\$75.53

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - ELECTRICIAN - Local 103**

**Effective Date - 09/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.12	\$13.00	\$0.51	\$0.00	\$30.63
2	40	\$17.12	\$13.00	\$0.51	\$0.00	\$30.63
3	45	\$19.26	\$13.00	\$10.52	\$0.00	\$42.78
4	45	\$19.26	\$13.00	\$10.52	\$0.00	\$42.78
5	50	\$21.41	\$13.00	\$10.84	\$0.00	\$45.25
6	55	\$23.55	\$13.00	\$11.18	\$0.00	\$47.73
7	60	\$25.69	\$13.00	\$11.50	\$0.00	\$50.19
8	65	\$27.83	\$13.00	\$11.84	\$0.00	\$52.67
9	70	\$29.97	\$13.00	\$12.16	\$0.00	\$55.13
10	75	\$32.11	\$13.00	\$12.49	\$0.00	\$57.60

**Effective Date - 03/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.41	\$13.00	\$0.52	\$0.00	\$30.93
2	40	\$17.41	\$13.00	\$0.52	\$0.00	\$30.93
3	45	\$19.58	\$13.00	\$10.53	\$0.00	\$43.11
4	45	\$19.58	\$13.00	\$10.53	\$0.00	\$43.11
5	50	\$21.76	\$13.00	\$10.85	\$0.00	\$45.61
6	55	\$23.94	\$13.00	\$11.19	\$0.00	\$48.13
7	60	\$26.11	\$13.00	\$11.51	\$0.00	\$50.62
8	65	\$28.29	\$13.00	\$11.85	\$0.00	\$53.14
9	70	\$30.46	\$13.00	\$12.17	\$0.00	\$55.63
10	75	\$32.64	\$13.00	\$12.51	\$0.00	\$58.15

**Notes :**  
 App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

**Apprentice to Journeyworker Ratio:2:3\*\*\***

ELEVATOR CONSTRUCTOR ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2012	\$52.45	\$8.78	\$6.96	\$0.00	\$68.19
---	------------	---------	--------	--------	--------	---------

**Apprentice - ELEVATOR CONSTRUCTOR - Local 4**

**Effective Date - 01/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.23	\$8.78	\$0.00	\$0.00	\$35.01
2	55	\$28.85	\$8.78	\$6.96	\$0.00	\$44.59
3	65	\$34.09	\$8.78	\$6.96	\$0.00	\$49.83
4	70	\$36.72	\$8.78	\$6.96	\$0.00	\$52.46
5	80	\$41.96	\$8.78	\$6.96	\$0.00	\$57.70

**Notes:**  
Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

**Apprentice to Journeyworker Ratio:1:1**

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2012	\$38.59	\$8.78	\$6.96	\$0.00	\$54.33
FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2012	\$38.26	\$10.00	\$12.65	\$0.00	\$60.91
	05/01/2013	\$38.87	\$10.00	\$12.65	\$0.00	\$61.52
	11/01/2013	\$39.63	\$10.00	\$12.65	\$0.00	\$62.28
	05/01/2014	\$40.40	\$10.00	\$12.65	\$0.00	\$63.05
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2012	\$39.66	\$10.00	\$12.65	\$0.00	\$62.31
	05/01/2013	\$40.28	\$10.00	\$12.65	\$0.00	\$62.93
	11/01/2013	\$41.05	\$10.00	\$12.65	\$0.00	\$63.70
	05/01/2014	\$41.82	\$10.00	\$12.65	\$0.00	\$64.47
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2012	\$21.18	\$10.00	\$12.65	\$0.00	\$43.83
	05/01/2013	\$21.54	\$10.00	\$12.65	\$0.00	\$44.19
	11/01/2013	\$22.00	\$10.00	\$12.65	\$0.00	\$44.65
	05/01/2014	\$22.45	\$10.00	\$12.65	\$0.00	\$45.10
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	09/01/2012	\$42.81	\$13.00	\$14.13	\$0.00	\$69.94
	03/01/2013	\$43.52	\$13.00	\$14.16	\$0.00	\$70.68
	09/01/2013	\$44.20	\$13.00	\$14.18	\$0.00	\$71.38
	03/01/2014	\$44.92	\$13.00	\$14.20	\$0.00	\$72.12
	09/01/2014	\$45.60	\$13.00	\$14.22	\$0.00	\$72.82
	03/01/2015	\$46.32	\$13.00	\$14.24	\$0.00	\$73.56
	09/01/2015	\$47.27	\$13.00	\$14.27	\$0.00	\$74.54
	03/01/2016	\$48.23	\$13.00	\$14.30	\$0.00	\$75.53
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS LOCAL 103</i>	09/01/2012	\$32.11	\$13.00	\$12.49	\$0.00	\$57.60
	03/01/2013	\$32.64	\$13.00	\$12.51	\$0.00	\$58.15
	09/01/2013	\$33.15	\$13.00	\$12.52	\$0.00	\$58.67
	03/01/2014	\$33.69	\$13.00	\$12.54	\$0.00	\$59.23
	09/01/2014	\$34.20	\$13.00	\$12.56	\$0.00	\$59.76
	03/01/2015	\$34.74	\$13.00	\$12.57	\$0.00	\$60.31
	09/01/2015	\$35.45	\$13.00	\$12.59	\$0.00	\$61.04
	03/01/2016	\$36.17	\$13.00	\$12.62	\$0.00	\$61.79
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$33.61	\$10.00	\$13.02	\$0.00	\$56.63
	06/01/2013	\$34.26	\$10.00	\$13.02	\$0.00	\$57.28
	12/01/2013	\$34.92	\$10.00	\$13.02	\$0.00	\$57.94
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 1</i>	12/01/2012	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
	06/01/2013	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
	12/01/2013	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
	06/01/2014	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
	12/01/2014	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
	06/01/2015	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
	12/01/2015	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
	06/01/2016	\$20.50	\$7.10	\$12.45	\$0.00	\$40.05
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	03/01/2012	\$37.20	\$9.80	\$16.61	\$0.00	\$63.61

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - FLOORCOVERER - Local 2168 Zone 1**

**Effective Date - 03/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.60	\$9.80	\$1.79	\$0.00	\$30.19
2	55	\$20.46	\$9.80	\$1.79	\$0.00	\$32.05
3	60	\$22.32	\$9.80	\$11.24	\$0.00	\$43.36
4	65	\$24.18	\$9.80	\$11.24	\$0.00	\$45.22
5	70	\$26.04	\$9.80	\$13.03	\$0.00	\$48.87
6	75	\$27.90	\$9.80	\$13.03	\$0.00	\$50.73
7	80	\$29.76	\$9.80	\$14.82	\$0.00	\$54.38
8	85	\$31.62	\$9.80	\$14.82	\$0.00	\$56.24

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$40.09	\$10.00	\$13.02	\$0.00	\$63.11
	06/01/2013	\$40.87	\$10.00	\$13.02	\$0.00	\$63.89
	12/01/2013	\$41.65	\$10.00	\$13.02	\$0.00	\$64.67

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$28.17	\$10.00	\$13.02	\$0.00	\$51.19
	06/01/2013	\$28.72	\$10.00	\$13.02	\$0.00	\$51.74
	12/01/2013	\$29.27	\$10.00	\$13.02	\$0.00	\$52.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	01/01/2013	\$35.51	\$7.80	\$14.60	\$0.00	\$57.91
---	------------	---------	--------	---------	--------	---------

**Apprentice - GLAZIER - Local 35 Zone 2**

**Effective Date - 01/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.76	\$7.80	\$0.00	\$0.00	\$25.56
2	55	\$19.53	\$7.80	\$3.25	\$0.00	\$30.58
3	60	\$21.31	\$7.80	\$3.54	\$0.00	\$32.65
4	65	\$23.08	\$7.80	\$3.84	\$0.00	\$34.72
5	70	\$24.86	\$7.80	\$12.83	\$0.00	\$45.49
6	75	\$26.63	\$7.80	\$13.13	\$0.00	\$47.56
7	80	\$28.41	\$7.80	\$13.42	\$0.00	\$49.63
8	90	\$31.96	\$7.80	\$14.01	\$0.00	\$53.77

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$40.09	\$10.00	\$13.02	\$0.00	\$63.11
	06/01/2013	\$40.87	\$10.00	\$13.02	\$0.00	\$63.89
	12/01/2013	\$41.65	\$10.00	\$13.02	\$0.00	\$64.67

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 12/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.05	\$10.00	\$0.00	\$0.00	\$32.05
2	60	\$24.05	\$10.00	\$13.02	\$0.00	\$47.07
3	65	\$26.06	\$10.00	\$13.02	\$0.00	\$49.08
4	70	\$28.06	\$10.00	\$13.02	\$0.00	\$51.08
5	75	\$30.07	\$10.00	\$13.02	\$0.00	\$53.09
6	80	\$32.07	\$10.00	\$13.02	\$0.00	\$55.09
7	85	\$34.08	\$10.00	\$13.02	\$0.00	\$57.10
8	90	\$36.08	\$10.00	\$13.02	\$0.00	\$59.10

**Effective Date - 06/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.48	\$10.00	\$0.00	\$0.00	\$32.48
2	60	\$24.52	\$10.00	\$13.02	\$0.00	\$47.54
3	65	\$26.57	\$10.00	\$13.02	\$0.00	\$49.59
4	70	\$28.61	\$10.00	\$13.02	\$0.00	\$51.63
5	75	\$30.65	\$10.00	\$13.02	\$0.00	\$53.67
6	80	\$32.70	\$10.00	\$13.02	\$0.00	\$55.72
7	85	\$34.74	\$10.00	\$13.02	\$0.00	\$57.76
8	90	\$36.78	\$10.00	\$13.02	\$0.00	\$59.80

**Notes:**

**Apprentice to Journeyworker Ratio:1:6**

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2012	\$41.10	\$9.82	\$18.24	\$2.08	\$71.24
	02/01/2013	\$42.32	\$9.82	\$18.24	\$2.11	\$72.49

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 103</i>	09/01/2012	\$42.81	\$13.00	\$14.13	\$0.00	\$69.94
	03/01/2013	\$43.52	\$13.00	\$14.16	\$0.00	\$70.68
	09/01/2013	\$44.20	\$13.00	\$14.18	\$0.00	\$71.38
	03/01/2014	\$44.92	\$13.00	\$14.20	\$0.00	\$72.12
	09/01/2014	\$45.60	\$13.00	\$14.22	\$0.00	\$72.82
	03/01/2015	\$46.32	\$13.00	\$14.24	\$0.00	\$73.56
	09/01/2015	\$47.27	\$13.00	\$14.27	\$0.00	\$74.54
	03/01/2016	\$48.23	\$13.00	\$14.30	\$0.00	\$75.53

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	08/01/2012	\$41.10	\$9.82	\$18.24	\$2.08	\$71.24
	02/01/2013	\$42.32	\$9.82	\$18.24	\$2.11	\$72.49

For apprentice rates see "Apprentice- SHEET METAL WORKER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>	09/01/2012	\$48.09	\$8.75	\$14.39	\$0.00	\$71.23
	03/01/2013	\$49.34	\$8.75	\$14.39	\$0.00	\$72.48
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	09/01/2012	\$48.09	\$8.75	\$14.39	\$0.00	\$71.23
	03/01/2013	\$49.34	\$8.75	\$14.39	\$0.00	\$72.48
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	12/01/2012	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	06/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	12/01/2013	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	06/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	12/01/2014	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	06/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	12/01/2015	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	06/01/2016	\$38.30	\$7.10	\$12.45	\$0.00	\$57.85
	12/01/2016	\$39.30	\$7.10	\$12.45	\$0.00	\$58.85
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>ASBESTOS WORKERS LOCAL 6 (BOSTON)</i>	09/01/2012	\$41.46	\$10.65	\$11.50	\$0.00	\$63.61
	09/01/2013	\$43.06	\$10.65	\$11.50	\$0.00	\$65.21
	09/01/2014	\$45.06	\$10.65	\$11.50	\$0.00	\$67.21

**Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston**

**Effective Date - 09/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.73	\$10.65	\$8.60	\$0.00	\$39.98
2	60	\$24.88	\$10.65	\$9.18	\$0.00	\$44.71
3	70	\$29.02	\$10.65	\$9.76	\$0.00	\$49.43
4	80	\$33.17	\$10.65	\$10.34	\$0.00	\$54.16

**Effective Date - 09/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.53	\$10.65	\$8.60	\$0.00	\$40.78
2	60	\$25.84	\$10.65	\$9.18	\$0.00	\$45.67
3	70	\$30.14	\$10.65	\$9.76	\$0.00	\$50.55
4	80	\$34.45	\$10.65	\$10.34	\$0.00	\$55.44

**Notes:**

Steps are 1 year

**Apprentice to Journeyworker Ratio:1:4**

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	09/16/2012	\$38.98	\$7.70	\$18.35	\$0.00	\$65.03
	03/16/2013	\$40.23	\$7.70	\$18.35	\$0.00	\$66.28

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - IRONWORKER - Local 7 Boston**

**Effective Date - 09/16/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.39	\$7.70	\$18.35	\$0.00	\$49.44
2	70	\$27.29	\$7.70	\$18.35	\$0.00	\$53.34
3	75	\$29.24	\$7.70	\$18.35	\$0.00	\$55.29
4	80	\$31.18	\$7.70	\$18.35	\$0.00	\$57.23
5	85	\$33.13	\$7.70	\$18.35	\$0.00	\$59.18
6	90	\$35.08	\$7.70	\$18.35	\$0.00	\$61.13

**Effective Date - 03/16/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.14	\$7.70	\$18.35	\$0.00	\$50.19
2	70	\$28.16	\$7.70	\$18.35	\$0.00	\$54.21
3	75	\$30.17	\$7.70	\$18.35	\$0.00	\$56.22
4	80	\$32.18	\$7.70	\$18.35	\$0.00	\$58.23
5	85	\$34.20	\$7.70	\$18.35	\$0.00	\$60.25
6	90	\$36.21	\$7.70	\$18.35	\$0.00	\$62.26

**Notes:**

\*\* Structural 1:6; Ornamental 1:4

**Apprentice to Journeyworker Ratio:\*\***

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 1	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 1	12/01/2012	\$32.30	\$7.10	\$12.45	\$0.00	\$51.85
	06/01/2013	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	12/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	06/01/2014	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	12/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	06/01/2015	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	12/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	06/01/2016	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	12/01/2016	\$38.55	\$7.10	\$12.45	\$0.00	\$58.10

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - LABORER - Zone 1**

**Effective Date - 12/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.38	\$7.10	\$12.45	\$0.00	\$38.93
2	70	\$22.61	\$7.10	\$12.45	\$0.00	\$42.16
3	80	\$25.84	\$7.10	\$12.45	\$0.00	\$45.39
4	90	\$29.07	\$7.10	\$12.45	\$0.00	\$48.62

**Effective Date - 06/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.83	\$7.10	\$12.45	\$0.00	\$39.38
2	70	\$23.14	\$7.10	\$12.45	\$0.00	\$42.69
3	80	\$26.44	\$7.10	\$12.45	\$0.00	\$45.99
4	90	\$29.75	\$7.10	\$12.45	\$0.00	\$49.30

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

LABORER: CARPENTER TENDER LABORERS - ZONE 1	12/01/2012	\$32.30	\$7.10	\$12.45	\$0.00	\$51.85
	06/01/2013	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	12/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	06/01/2014	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	12/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	06/01/2015	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	12/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	06/01/2016	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	12/01/2016	\$38.55	\$7.10	\$12.45	\$0.00	\$58.10

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 1	12/01/2012	\$32.30	\$7.10	\$12.45	\$0.00	\$51.85
	06/01/2013	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	12/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	06/01/2014	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	12/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	06/01/2015	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	12/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	06/01/2016	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	12/01/2016	\$38.55	\$7.10	\$12.45	\$0.00	\$58.10

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	\$0.00	\$51.35
--	------------	---------	--------	---------	--------	---------

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MASON TENDER <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.30	\$7.10	\$12.45	\$0.00	\$51.85
	06/01/2013	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	12/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	06/01/2014	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	12/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	06/01/2015	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	12/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	06/01/2016	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	12/01/2016	\$38.55	\$7.10	\$12.45	\$0.00	\$58.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.30	\$7.10	\$12.45	\$0.00	\$51.85
	06/01/2013	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	12/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	06/01/2014	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	12/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	06/01/2015	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	12/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	06/01/2016	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	12/01/2016	\$38.55	\$7.10	\$12.45	\$0.00	\$58.10
This classification applies to the wholesale removal of standing trees including all associated trimming of branches and limbs, and applies to the removal of branches at locations not on or around utility lines. For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2012	\$36.20	\$10.18	\$16.04	\$0.00	\$62.42
	02/01/2013	\$36.20	\$10.18	\$16.51	\$0.00	\$62.89
	08/01/2013	\$36.91	\$10.18	\$16.58	\$0.00	\$63.67
	02/01/2014	\$37.36	\$10.18	\$16.58	\$0.00	\$64.12
	08/01/2014	\$38.07	\$10.18	\$16.65	\$0.00	\$64.90
	02/01/2015	\$38.52	\$10.18	\$16.65	\$0.00	\$65.35
	08/01/2015	\$39.23	\$10.18	\$16.72	\$0.00	\$66.13
	02/01/2016	\$39.68	\$10.18	\$16.72	\$0.00	\$66.58
	08/01/2016	\$40.38	\$10.18	\$16.80	\$0.00	\$67.36
	02/01/2017	\$40.84	\$10.18	\$16.80	\$0.00	\$67.82

**Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.10	\$10.18	\$16.04	\$0.00	\$44.32
2	60	\$21.72	\$10.18	\$16.04	\$0.00	\$47.94
3	70	\$25.34	\$10.18	\$16.04	\$0.00	\$51.56
4	80	\$28.96	\$10.18	\$16.04	\$0.00	\$55.18
5	90	\$32.58	\$10.18	\$16.04	\$0.00	\$58.80

**Effective Date - 02/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.10	\$10.18	\$16.51	\$0.00	\$44.79
2	60	\$21.72	\$10.18	\$16.51	\$0.00	\$48.41
3	70	\$25.34	\$10.18	\$16.51	\$0.00	\$52.03
4	80	\$28.96	\$10.18	\$16.51	\$0.00	\$55.65
5	90	\$32.58	\$10.18	\$16.51	\$0.00	\$59.27

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

MARBLE MASONS, TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	08/01/2012	\$47.45	\$10.18	\$17.25	\$0.00	\$74.88
	02/01/2013	\$47.45	\$10.18	\$17.83	\$0.00	\$75.46
	08/01/2013	\$48.35	\$10.18	\$17.90	\$0.00	\$76.43
	02/01/2014	\$48.91	\$10.18	\$17.90	\$0.00	\$76.99
	08/01/2014	\$49.81	\$10.18	\$17.97	\$0.00	\$77.96
	02/01/2015	\$50.37	\$10.18	\$17.97	\$0.00	\$78.52
	08/01/2015	\$51.27	\$10.18	\$18.04	\$0.00	\$79.49
	02/01/2016	\$51.84	\$10.18	\$18.04	\$0.00	\$80.06
	08/01/2016	\$52.74	\$10.18	\$18.12	\$0.00	\$81.04
	02/01/2017	\$53.31	\$10.18	\$18.12	\$0.00	\$81.61

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.73	\$10.18	\$17.25	\$0.00	\$51.16
2	60	\$28.47	\$10.18	\$17.25	\$0.00	\$55.90
3	70	\$33.22	\$10.18	\$17.25	\$0.00	\$60.65
4	80	\$37.96	\$10.18	\$17.25	\$0.00	\$65.39
5	90	\$42.71	\$10.18	\$17.25	\$0.00	\$70.14

**Effective Date - 02/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.73	\$10.18	\$17.83	\$0.00	\$51.74
2	60	\$28.47	\$10.18	\$17.83	\$0.00	\$56.48
3	70	\$33.22	\$10.18	\$17.83	\$0.00	\$61.23
4	80	\$37.96	\$10.18	\$17.83	\$0.00	\$65.97
5	90	\$42.71	\$10.18	\$17.83	\$0.00	\$70.72

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 1) <i>MILLWRIGHTS LOCAL 1121 - Zone 1</i>	04/01/2011	\$33.57	\$8.67	\$15.61	\$0.00	\$57.85

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - MILLWRIGHT - Local 1121 Zone 1**

**Effective Date - 04/01/2011**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.79	\$8.67	\$11.64	\$0.00	\$37.10
2	55	\$18.46	\$8.67	\$11.64	\$0.00	\$38.77
3	60	\$20.14	\$8.67	\$13.23	\$0.00	\$42.04
4	65	\$21.82	\$8.67	\$13.23	\$0.00	\$43.72
5	70	\$23.50	\$8.67	\$14.02	\$0.00	\$46.19
6	75	\$25.18	\$8.67	\$14.02	\$0.00	\$47.87
7	80	\$26.86	\$8.67	\$14.82	\$0.00	\$50.35
8	85	\$28.53	\$8.67	\$14.82	\$0.00	\$52.02

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

MORTAR MIXER LABORERS - ZONE 1	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2012	\$21.28	\$10.00	\$13.02	\$0.00	\$44.30
	06/01/2013	\$21.70	\$10.00	\$13.02	\$0.00	\$44.72
	12/01/2013	\$22.12	\$10.00	\$13.02	\$0.00	\$45.14

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2012	\$24.62	\$10.00	\$13.02	\$0.00	\$47.64
	06/01/2013	\$25.10	\$10.00	\$13.02	\$0.00	\$48.12
	12/01/2013	\$25.59	\$10.00	\$13.02	\$0.00	\$48.61

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 - ZONE 2	01/01/2013	\$45.01	\$7.80	\$15.60	\$0.00	\$68.41
---	------------	---------	--------	---------	--------	---------



**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint**

**Effective Date - 01/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.99	\$7.80	\$0.00	\$0.00	\$24.79
2	55	\$18.68	\$7.80	\$3.52	\$0.00	\$30.00
3	60	\$20.38	\$7.80	\$3.84	\$0.00	\$32.02
4	65	\$22.08	\$7.80	\$4.16	\$0.00	\$34.04
5	70	\$23.78	\$7.80	\$13.68	\$0.00	\$45.26
6	75	\$25.48	\$7.80	\$14.00	\$0.00	\$47.28
7	80	\$27.18	\$7.80	\$14.32	\$0.00	\$49.30
8	90	\$30.57	\$7.80	\$14.96	\$0.00	\$53.33

**Notes:**

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (TRAFFIC MARKINGS)	12/01/2012	\$32.30	\$7.10	\$12.45	\$0.00	\$51.85
LABORERS - ZONE 1	06/01/2013	\$33.05	\$7.10	\$12.45	\$0.00	\$52.60
	12/01/2013	\$33.80	\$7.10	\$12.45	\$0.00	\$53.35
	06/01/2014	\$34.55	\$7.10	\$12.45	\$0.00	\$54.10
	12/01/2014	\$35.30	\$7.10	\$12.45	\$0.00	\$54.85
	06/01/2015	\$36.05	\$7.10	\$12.45	\$0.00	\$55.60
	12/01/2015	\$36.80	\$7.10	\$12.45	\$0.00	\$56.35
	06/01/2016	\$37.55	\$7.10	\$12.45	\$0.00	\$57.10
	12/01/2016	\$38.55	\$7.10	\$12.45	\$0.00	\$58.10

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	01/01/2013	\$34.51	\$7.80	\$15.60	\$0.00	\$57.91
--------------------------------	------------	---------	--------	---------	--------	---------

\* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW**

**Effective Date - 01/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.26	\$7.80	\$0.00	\$0.00	\$25.06
2	55	\$18.98	\$7.80	\$3.52	\$0.00	\$30.30
3	60	\$20.71	\$7.80	\$3.84	\$0.00	\$32.35
4	65	\$22.43	\$7.80	\$4.16	\$0.00	\$34.39
5	70	\$24.16	\$7.80	\$13.68	\$0.00	\$45.64
6	75	\$25.88	\$7.80	\$14.00	\$0.00	\$47.68
7	80	\$27.61	\$7.80	\$14.32	\$0.00	\$49.73
8	90	\$31.06	\$7.80	\$14.96	\$0.00	\$53.82

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER / TAPER (BRUSH, REPAINT) PAINTERS LOCAL 35 - ZONE 2	01/01/2013	\$32.57	\$7.80	\$15.60	\$0.00	\$55.97
--	------------	---------	--------	---------	--------	---------

**Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT**

**Effective Date - 01/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.29	\$7.80	\$0.00	\$0.00	\$24.09
2	55	\$17.91	\$7.80	\$3.52	\$0.00	\$29.23
3	60	\$19.54	\$7.80	\$3.84	\$0.00	\$31.18
4	65	\$21.17	\$7.80	\$4.16	\$0.00	\$33.13
5	70	\$22.80	\$7.80	\$13.68	\$0.00	\$44.28
6	75	\$24.43	\$7.80	\$14.00	\$0.00	\$46.23
7	80	\$26.06	\$7.80	\$14.32	\$0.00	\$48.18
8	90	\$29.31	\$7.80	\$14.96	\$0.00	\$52.07

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 ZONE A	12/01/2012	\$31.38	\$8.91	\$8.00	\$0.00	\$48.29
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) PILE DRIVER LOCAL 56 (ZONE 1)	08/01/2012	\$39.20	\$9.80	\$17.67	\$0.00	\$66.67
	08/01/2013	\$40.70	\$9.80	\$17.67	\$0.00	\$68.17
	08/01/2014	\$42.20	\$9.80	\$17.67	\$0.00	\$69.67
	08/01/2015	\$43.70	\$9.80	\$17.67	\$0.00	\$71.17

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PILE DRIVER	08/01/2012	\$39.20	\$9.80	\$17.67	\$0.00	\$66.67
<i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2013	\$40.70	\$9.80	\$17.67	\$0.00	\$68.17
	08/01/2014	\$42.20	\$9.80	\$17.67	\$0.00	\$69.67
	08/01/2015	\$43.70	\$9.80	\$17.67	\$0.00	\$71.17

**Apprentice - PILE DRIVER - Local 56 Zone 1**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.60	\$9.80	\$17.67	\$0.00	\$47.07
2	60	\$23.52	\$9.80	\$17.67	\$0.00	\$50.99
3	70	\$27.44	\$9.80	\$17.67	\$0.00	\$54.91
4	75	\$29.40	\$9.80	\$17.67	\$0.00	\$56.87
5	80	\$31.36	\$9.80	\$17.67	\$0.00	\$58.83
6	80	\$31.36	\$9.80	\$17.67	\$0.00	\$58.83
7	90	\$35.28	\$9.80	\$17.67	\$0.00	\$62.75
8	90	\$35.28	\$9.80	\$17.67	\$0.00	\$62.75

**Effective Date - 08/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.35	\$9.80	\$17.67	\$0.00	\$47.82
2	60	\$24.42	\$9.80	\$17.67	\$0.00	\$51.89
3	70	\$28.49	\$9.80	\$17.67	\$0.00	\$55.96
4	75	\$30.53	\$9.80	\$17.67	\$0.00	\$58.00
5	80	\$32.56	\$9.80	\$17.67	\$0.00	\$60.03
6	80	\$32.56	\$9.80	\$17.67	\$0.00	\$60.03
7	90	\$36.63	\$9.80	\$17.67	\$0.00	\$64.10
8	90	\$36.63	\$9.80	\$17.67	\$0.00	\$64.10

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

PIPEFITTER & STEAMFITTER	09/01/2012	\$48.09	\$8.75	\$14.39	\$0.00	\$71.23
<i>PIPEFITTERS LOCAL 537</i>	03/01/2013	\$49.34	\$8.75	\$14.39	\$0.00	\$72.48

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PIPEFITTER - Local 537**

**Effective Date - 09/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.24	\$8.75	\$6.50	\$0.00	\$34.49
2	45	\$21.64	\$8.75	\$14.39	\$0.00	\$44.78
3	60	\$28.85	\$8.75	\$14.39	\$0.00	\$51.99
4	70	\$33.66	\$8.75	\$14.39	\$0.00	\$56.80
5	80	\$38.47	\$8.75	\$14.39	\$0.00	\$61.61

**Effective Date - 03/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$19.74	\$8.75	\$6.50	\$0.00	\$34.99
2	45	\$22.20	\$8.75	\$14.39	\$0.00	\$45.34
3	60	\$29.60	\$8.75	\$14.39	\$0.00	\$52.74
4	70	\$34.54	\$8.75	\$14.39	\$0.00	\$57.68
5	80	\$39.47	\$8.75	\$14.39	\$0.00	\$62.61

**Notes:**  
 \*\* 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.  
 Refrig/AC Mechanic \*\*1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

**Apprentice to Journeyworker Ratio:\*\***

PIPELAYER	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
LABORERS - ZONE 1	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

PLUMBERS & GASFITTERS	09/01/2012	\$48.06	\$9.32	\$13.29	\$0.00	\$70.67
PLUMBERS & GASFITTERS LOCAL 12	03/01/2013	\$49.31	\$9.32	\$13.29	\$0.00	\$71.92

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PLUMBER/GASFITTER - Local 12**

**Effective Date - 09/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$16.82	\$9.32	\$4.97	\$0.00	\$31.11
2	40	\$19.22	\$9.32	\$5.61	\$0.00	\$34.15
3	55	\$26.43	\$9.32	\$7.53	\$0.00	\$43.28
4	65	\$31.24	\$9.32	\$8.81	\$0.00	\$49.37
5	75	\$36.05	\$9.32	\$10.09	\$0.00	\$55.46

**Effective Date - 03/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$17.26	\$9.32	\$4.97	\$0.00	\$31.55
2	40	\$19.72	\$9.32	\$5.61	\$0.00	\$34.65
3	55	\$27.12	\$9.32	\$7.53	\$0.00	\$43.97
4	65	\$32.05	\$9.32	\$8.81	\$0.00	\$50.18
5	75	\$36.98	\$9.32	\$10.09	\$0.00	\$56.39

**Notes:**

\*\* 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr  
Step4 with lic\$53.29 Step5 with lic\$59.49

**Apprentice to Journeyworker Ratio:\*\***

PNEUMATIC CONTROLS (TEMP.)	09/01/2012	\$48.09	\$8.75	\$14.39	\$0.00	\$71.23
PIPEFITTERS LOCAL 537	03/01/2013	\$49.34	\$8.75	\$14.39	\$0.00	\$72.48

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
LABORERS - ZONE 1	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35

For apprentice rates see "Apprentice- LABORER"

POWDERMAN & BLASTER	12/01/2012	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
LABORERS - ZONE 1	06/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	12/01/2013	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	06/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	12/01/2014	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	06/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	12/01/2015	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	06/01/2016	\$38.55	\$7.10	\$12.45	\$0.00	\$58.10
	12/01/2016	\$39.55	\$7.10	\$12.45	\$0.00	\$59.10

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$40.09	\$10.00	\$13.02	\$0.00	\$63.11
	06/01/2013	\$40.87	\$10.00	\$13.02	\$0.00	\$63.89
	12/01/2013	\$41.65	\$10.00	\$13.02	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$40.09	\$10.00	\$13.02	\$0.00	\$63.11
	06/01/2013	\$40.87	\$10.00	\$13.02	\$0.00	\$63.89
	12/01/2013	\$41.65	\$10.00	\$13.02	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$28.17	\$10.00	\$13.02	\$0.00	\$51.19
	06/01/2013	\$28.72	\$10.00	\$13.02	\$0.00	\$51.74
	12/01/2013	\$29.27	\$10.00	\$13.02	\$0.00	\$52.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 25b</i>	05/01/2011	\$28.03	\$7.75	\$5.91	\$0.00	\$41.69
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RESIDENTIAL WOOD FRAME (All Other Work) <i>CARPENTERS -ZONE 2 (Residential Wood)</i>	04/01/2011	\$24.24	\$8.67	\$15.51	\$0.00	\$48.42
RESIDENTIAL WOOD FRAME CARPENTER ** ** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood frame residences that do not exceed four stories including the basement. <i>CARPENTERS -ZONE 2 (Residential Wood)</i> As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.	05/01/2011	\$24.24	\$6.34	\$6.23	\$0.00	\$36.81
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg) <i>ROOFERS LOCAL 33</i>	08/01/2012	\$36.41	\$10.50	\$10.70	\$0.00	\$57.61
	02/01/2013	\$37.41	\$10.50	\$10.70	\$0.00	\$58.61

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - ROOFER - Local 33**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.21	\$10.50	\$3.38	\$0.00	\$32.09
2	60	\$21.85	\$10.50	\$10.70	\$0.00	\$43.05
3	65	\$23.67	\$10.50	\$10.70	\$0.00	\$44.87
4	75	\$27.31	\$10.50	\$10.70	\$0.00	\$48.51
5	85	\$30.95	\$10.50	\$10.70	\$0.00	\$52.15

**Effective Date - 02/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.71	\$10.50	\$3.38	\$0.00	\$32.59
2	60	\$22.45	\$10.50	\$10.70	\$0.00	\$43.65
3	65	\$24.32	\$10.50	\$10.70	\$0.00	\$45.52
4	75	\$28.06	\$10.50	\$10.70	\$0.00	\$49.26
5	85	\$31.80	\$10.50	\$10.70	\$0.00	\$53.00

**Notes:** \*\* 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1  
 Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.

**Apprentice to Journeyworker Ratio:\*\***

ROOFER SLATE / TILE / PRECAST CONCRETE ROOFERS LOCAL 33	08/01/2012	\$36.66	\$10.50	\$10.70	\$0.00	\$57.86
For apprentice rates see "Apprentice- ROOFER"	02/01/2013	\$37.66	\$10.50	\$10.70	\$0.00	\$58.86
SHEETMETAL WORKER SHEETMETAL WORKERS LOCAL 17 - A	08/01/2012	\$41.10	\$9.82	\$18.24	\$2.08	\$71.24
	02/01/2013	\$42.32	\$9.82	\$18.24	\$2.11	\$72.49

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - SHEET METAL WORKER - Local 17-A**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.44	\$9.82	\$4.00	\$0.00	\$30.26
2	40	\$16.44	\$9.82	\$4.00	\$0.00	\$30.26
3	45	\$18.50	\$9.82	\$8.00	\$1.09	\$37.41
4	45	\$18.50	\$9.82	\$8.00	\$1.09	\$37.41
5	50	\$20.55	\$9.82	\$8.75	\$1.17	\$40.29
6	50	\$20.55	\$9.82	\$9.00	\$1.18	\$40.55
7	60	\$24.66	\$9.82	\$10.24	\$1.34	\$46.06
8	65	\$26.72	\$9.82	\$10.99	\$1.43	\$48.96
9	75	\$30.83	\$9.82	\$12.49	\$1.59	\$54.73
10	85	\$34.94	\$9.82	\$13.49	\$1.75	\$60.00

**Effective Date - 02/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.93	\$9.82	\$4.00	\$0.00	\$30.75
2	40	\$16.93	\$9.82	\$4.00	\$0.00	\$30.75
3	45	\$19.04	\$9.82	\$8.00	\$1.11	\$37.97
4	45	\$19.04	\$9.82	\$8.00	\$1.11	\$37.97
5	50	\$21.16	\$9.82	\$8.75	\$1.19	\$40.92
6	50	\$21.16	\$9.82	\$9.00	\$1.20	\$41.18
7	60	\$25.39	\$9.82	\$10.24	\$1.36	\$46.81
8	65	\$27.51	\$9.82	\$10.99	\$1.45	\$49.77
9	75	\$31.74	\$9.82	\$12.49	\$1.62	\$55.67
10	85	\$35.97	\$9.82	\$13.49	\$1.78	\$61.06

**Notes:**  
Steps are 6 mos.

**Apprentice to Journeyworker Ratio:1:4**

SIGN ERECTOR	06/01/2012	\$25.37	\$6.82	\$6.85	\$0.00	\$39.04
PAINTERS LOCAL 35 - ZONE 2	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - SIGN ERECTOR - Local 35 Zone 2**

**Effective Date - 06/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.69	\$6.82	\$0.00	\$0.00	\$19.51
2	55	\$13.95	\$6.82	\$2.35	\$0.00	\$23.12
3	60	\$15.22	\$6.82	\$2.35	\$0.00	\$24.39
4	65	\$16.49	\$6.82	\$2.35	\$0.00	\$25.66
5	70	\$17.76	\$6.82	\$6.85	\$0.00	\$31.43
6	75	\$19.03	\$6.82	\$6.85	\$0.00	\$32.70
7	80	\$20.30	\$6.82	\$6.85	\$0.00	\$33.97
8	85	\$21.56	\$6.82	\$6.85	\$0.00	\$35.23
9	90	\$22.83	\$6.82	\$6.85	\$0.00	\$36.50

**Effective Date - 06/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

**Notes:**

Steps are 4 mos.

**Apprentice to Journeyworker Ratio:1:1**

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2012	\$31.84	\$8.91	\$8.00	\$0.00	\$48.75
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2012	\$32.13	\$8.91	\$8.00	\$0.00	\$49.04
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A)</i>	01/01/2013	\$51.58	\$8.42	\$12.60	\$0.00	\$72.60
	03/01/2013	\$52.58	\$8.42	\$12.60	\$0.00	\$73.60

**Apprentice - SPRINKLER FITTER - Local 550**

**Effective Date - 01/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.05	\$8.42	\$8.00	\$0.00	\$34.47
2	40	\$20.63	\$8.42	\$8.00	\$0.00	\$37.05
3	45	\$23.21	\$8.42	\$8.00	\$0.00	\$39.63
4	50	\$25.79	\$8.42	\$8.00	\$0.00	\$42.21
5	55	\$28.37	\$8.42	\$8.00	\$0.00	\$44.79
6	60	\$30.95	\$8.42	\$8.00	\$0.00	\$47.37
7	65	\$33.53	\$8.42	\$8.00	\$0.00	\$49.95
8	70	\$36.11	\$8.42	\$8.00	\$0.00	\$52.53
9	75	\$38.69	\$8.42	\$8.00	\$0.00	\$55.11
10	80	\$41.26	\$8.42	\$8.00	\$0.00	\$57.68

**Effective Date - 03/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.40	\$8.42	\$8.00	\$0.00	\$34.82
2	40	\$21.03	\$8.42	\$8.00	\$0.00	\$37.45
3	45	\$23.66	\$8.42	\$8.00	\$0.00	\$40.08
4	50	\$26.29	\$8.42	\$8.00	\$0.00	\$42.71
5	55	\$28.92	\$8.42	\$8.00	\$0.00	\$45.34
6	60	\$31.55	\$8.42	\$8.00	\$0.00	\$47.97
7	65	\$34.18	\$8.42	\$8.00	\$0.00	\$50.60
8	70	\$36.81	\$8.42	\$8.00	\$0.00	\$53.23
9	75	\$39.44	\$8.42	\$8.00	\$0.00	\$55.86
10	80	\$42.06	\$8.42	\$8.00	\$0.00	\$58.48

**Notes:**  
Steps are 850 hours

**Apprentice to Journeyworker Ratio:1:1**

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TELECOMMUNICATION TECHNICIAN ELECTRICIANS LOCAL 103	09/01/2012	\$32.11	\$13.00	\$12.49	\$0.00	\$57.60
	03/01/2013	\$32.64	\$13.00	\$12.51	\$0.00	\$58.15
	09/01/2013	\$33.15	\$13.00	\$12.52	\$0.00	\$58.67
	03/01/2014	\$33.69	\$13.00	\$12.54	\$0.00	\$59.23
	09/01/2014	\$34.20	\$13.00	\$12.56	\$0.00	\$59.76
	03/01/2015	\$34.74	\$13.00	\$12.57	\$0.00	\$60.31
	09/01/2015	\$35.45	\$13.00	\$12.59	\$0.00	\$61.04
	03/01/2016	\$36.17	\$13.00	\$12.62	\$0.00	\$61.79

**Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103**

**Effective Date - 09/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$12.84	\$13.00	\$0.39	\$0.00	\$26.23
2	40	\$12.84	\$13.00	\$0.39	\$0.00	\$26.23
3	45	\$14.45	\$13.00	\$9.77	\$0.00	\$37.22
4	45	\$14.45	\$13.00	\$9.77	\$0.00	\$37.22
5	50	\$16.06	\$13.00	\$10.02	\$0.00	\$39.08
6	55	\$17.66	\$13.00	\$10.27	\$0.00	\$40.93
7	60	\$19.27	\$13.00	\$10.52	\$0.00	\$42.79
8	65	\$20.87	\$13.00	\$10.77	\$0.00	\$44.64
9	70	\$22.48	\$13.00	\$11.02	\$0.00	\$46.50
10	75	\$24.08	\$13.00	\$11.26	\$0.00	\$48.34

**Effective Date - 03/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$13.06	\$13.00	\$0.39	\$0.00	\$26.45
2	40	\$13.06	\$13.00	\$0.39	\$0.00	\$26.45
3	45	\$14.69	\$13.00	\$9.78	\$0.00	\$37.47
4	45	\$14.69	\$13.00	\$9.78	\$0.00	\$37.47
5	50	\$16.32	\$13.00	\$10.03	\$0.00	\$39.35
6	55	\$17.95	\$13.00	\$10.28	\$0.00	\$41.23
7	60	\$19.58	\$13.00	\$10.53	\$0.00	\$43.11
8	65	\$21.22	\$13.00	\$10.78	\$0.00	\$45.00
9	70	\$22.85	\$13.00	\$11.03	\$0.00	\$46.88
10	75	\$24.48	\$13.00	\$11.28	\$0.00	\$48.76

**Notes:**

**Apprentice to Journeyworker Ratio:1:1**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TERRAZZO FINISHERS BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2012	\$46.35	\$10.18	\$17.25	\$0.00	\$73.78
	02/01/2013	\$46.35	\$10.18	\$17.83	\$0.00	\$74.36
	08/01/2013	\$47.25	\$10.18	\$17.90	\$0.00	\$75.33
	02/01/2014	\$47.81	\$10.18	\$17.90	\$0.00	\$75.89
	08/01/2014	\$48.71	\$10.18	\$17.97	\$0.00	\$76.86
	02/01/2015	\$49.27	\$10.18	\$17.97	\$0.00	\$77.42
	08/01/2015	\$50.17	\$10.18	\$18.04	\$0.00	\$78.39
	02/01/2016	\$50.74	\$10.18	\$18.04	\$0.00	\$78.96
	08/01/2016	\$51.64	\$10.18	\$18.12	\$0.00	\$79.94
	02/01/2017	\$52.21	\$10.18	\$18.12	\$0.00	\$80.51

**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

**Effective Date - 08/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.18	\$10.18	\$17.25	\$0.00	\$50.61
2	60	\$27.81	\$10.18	\$17.25	\$0.00	\$55.24
3	70	\$32.45	\$10.18	\$17.25	\$0.00	\$59.88
4	80	\$37.08	\$10.18	\$17.25	\$0.00	\$64.51
5	90	\$41.72	\$10.18	\$17.25	\$0.00	\$69.15

**Effective Date - 02/01/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.18	\$10.18	\$17.83	\$0.00	\$51.19
2	60	\$27.81	\$10.18	\$17.83	\$0.00	\$55.82
3	70	\$32.45	\$10.18	\$17.83	\$0.00	\$60.46
4	80	\$37.08	\$10.18	\$17.83	\$0.00	\$65.09
5	90	\$41.72	\$10.18	\$17.83	\$0.00	\$69.73

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

TEST BORING DRILLER LABORERS - FOUNDATION AND MARINE	12/01/2012	\$37.30	\$7.10	\$12.60	\$0.00	\$57.00
	06/01/2013	\$34.45	\$7.10	\$12.60	\$0.00	\$54.15
	12/01/2013	\$35.20	\$7.10	\$12.60	\$0.00	\$54.90
	06/01/2014	\$35.95	\$7.10	\$12.60	\$0.00	\$55.65
	12/01/2014	\$36.70	\$7.10	\$12.60	\$0.00	\$56.40
	06/01/2015	\$37.45	\$7.10	\$12.60	\$0.00	\$57.15
	12/01/2015	\$38.20	\$7.10	\$12.60	\$0.00	\$57.90
	06/01/2016	\$38.95	\$7.10	\$12.60	\$0.00	\$58.65
	12/01/2016	\$39.95	\$7.10	\$12.60	\$0.00	\$59.65

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2012	\$32.42	\$7.10	\$12.60	\$0.00	\$52.12
	06/01/2013	\$33.17	\$7.10	\$12.60	\$0.00	\$52.87
	12/01/2013	\$33.92	\$7.10	\$12.60	\$0.00	\$53.62
	06/01/2014	\$34.67	\$7.10	\$12.60	\$0.00	\$54.37
	12/01/2014	\$35.42	\$7.10	\$12.60	\$0.00	\$55.12
	06/01/2015	\$36.17	\$7.10	\$12.60	\$0.00	\$55.87
	12/01/2015	\$36.92	\$7.10	\$12.60	\$0.00	\$56.62
	06/01/2016	\$37.67	\$7.10	\$12.60	\$0.00	\$57.37
	12/01/2016	\$38.67	\$7.10	\$12.60	\$0.00	\$58.37
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2012	\$32.30	\$7.10	\$12.60	\$0.00	\$52.00
	06/01/2013	\$33.05	\$7.10	\$12.60	\$0.00	\$52.75
	12/01/2013	\$33.80	\$7.10	\$12.60	\$0.00	\$53.50
	06/01/2014	\$34.55	\$7.10	\$12.60	\$0.00	\$54.25
	12/01/2014	\$35.30	\$7.10	\$12.60	\$0.00	\$55.00
	06/01/2015	\$36.05	\$7.10	\$12.60	\$0.00	\$55.75
	12/01/2015	\$36.80	\$7.10	\$12.60	\$0.00	\$56.50
	06/01/2016	\$37.55	\$7.10	\$12.60	\$0.00	\$57.25
	12/01/2016	\$38.55	\$7.10	\$12.60	\$0.00	\$58.25
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$39.72	\$10.00	\$13.02	\$0.00	\$62.74
	06/01/2013	\$40.49	\$10.00	\$13.02	\$0.00	\$63.51
	12/01/2013	\$41.27	\$10.00	\$13.02	\$0.00	\$64.29
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2012	\$32.42	\$9.07	\$8.00	\$0.00	\$49.49
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2012	\$44.58	\$7.10	\$13.00	\$0.00	\$64.68
	06/01/2013	\$45.33	\$7.10	\$13.00	\$0.00	\$65.43
	12/01/2013	\$46.08	\$7.10	\$13.00	\$0.00	\$66.18
	06/01/2014	\$46.83	\$7.10	\$13.00	\$0.00	\$66.93
	12/01/2014	\$47.58	\$7.10	\$13.00	\$0.00	\$67.68
	06/01/2015	\$48.33	\$7.10	\$13.00	\$0.00	\$68.43
	12/01/2015	\$49.08	\$7.10	\$13.00	\$0.00	\$69.18
	06/01/2016	\$49.83	\$7.10	\$13.00	\$0.00	\$69.93
	12/01/2016	\$50.83	\$7.10	\$13.00	\$0.00	\$70.93
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2012	\$46.58	\$7.10	\$13.00	\$0.00	\$66.68
	06/01/2013	\$47.33	\$7.10	\$13.00	\$0.00	\$67.43
	12/01/2013	\$48.08	\$7.10	\$13.00	\$0.00	\$68.18
	06/01/2014	\$48.83	\$7.10	\$13.00	\$0.00	\$68.93
	12/01/2014	\$49.58	\$7.10	\$13.00	\$0.00	\$69.68
	06/01/2015	\$50.33	\$7.10	\$13.00	\$0.00	\$70.43
	12/01/2015	\$51.08	\$7.10	\$13.00	\$0.00	\$71.18
	06/01/2016	\$51.83	\$7.10	\$13.00	\$0.00	\$71.93
	12/01/2016	\$52.83	\$7.10	\$13.00	\$0.00	\$72.93
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2012	\$36.65	\$7.10	\$13.00	\$0.00	\$56.75
	06/01/2013	\$37.40	\$7.10	\$13.00	\$0.00	\$57.50
	12/01/2013	\$38.15	\$7.10	\$13.00	\$0.00	\$58.25
	06/01/2014	\$38.90	\$7.10	\$13.00	\$0.00	\$59.00
	12/01/2014	\$39.65	\$7.10	\$13.00	\$0.00	\$59.75
	06/01/2015	\$40.40	\$7.10	\$13.00	\$0.00	\$60.50
	12/01/2015	\$41.15	\$7.10	\$13.00	\$0.00	\$61.25
	06/01/2016	\$41.90	\$7.10	\$13.00	\$0.00	\$62.00
	12/01/2016	\$42.90	\$7.10	\$13.00	\$0.00	\$63.00
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2012	\$38.65	\$7.10	\$13.00	\$0.00	\$58.75
	06/01/2013	\$39.40	\$7.10	\$13.00	\$0.00	\$59.50
	12/01/2013	\$40.15	\$7.10	\$13.00	\$0.00	\$60.25
	06/01/2014	\$40.90	\$7.10	\$13.00	\$0.00	\$61.00
	12/01/2014	\$41.65	\$7.10	\$13.00	\$0.00	\$61.75
	06/01/2015	\$42.40	\$7.10	\$13.00	\$0.00	\$62.50
	12/01/2015	\$43.15	\$7.10	\$13.00	\$0.00	\$63.25
	06/01/2016	\$43.90	\$7.10	\$13.00	\$0.00	\$64.00
	12/01/2016	\$44.90	\$7.10	\$13.00	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2012	\$31.84	\$8.91	\$8.00	\$0.00	\$48.75
WAGON DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2012	\$32.55	\$7.10	\$12.45	\$0.00	\$52.10
	06/01/2013	\$33.30	\$7.10	\$12.45	\$0.00	\$52.85
	12/01/2013	\$34.05	\$7.10	\$12.45	\$0.00	\$53.60
	06/01/2014	\$34.80	\$7.10	\$12.45	\$0.00	\$54.35
	12/01/2014	\$35.55	\$7.10	\$12.45	\$0.00	\$55.10
	06/01/2015	\$36.30	\$7.10	\$12.45	\$0.00	\$55.85
	12/01/2015	\$37.05	\$7.10	\$12.45	\$0.00	\$56.60
	06/01/2016	\$37.80	\$7.10	\$12.45	\$0.00	\$57.35
	12/01/2016	\$38.80	\$7.10	\$12.45	\$0.00	\$58.35
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2012	\$40.09	\$10.00	\$13.02	\$0.00	\$63.11
	06/01/2013	\$40.87	\$10.00	\$13.02	\$0.00	\$63.89
	12/01/2013	\$41.65	\$10.00	\$13.02	\$0.00	\$64.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS &amp; GASFITTERS LOCAL 12</i>	09/01/2012	\$48.06	\$9.32	\$13.29	\$0.00	\$70.67
	03/01/2013	\$49.31	\$9.32	\$13.29	\$0.00	\$71.92
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
<b>Outside Electrical - East</b>						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$25.18	\$7.95	\$4.42	\$0.00	\$37.55
	03/03/2013	\$25.18	\$8.20	\$4.17	\$0.00	\$37.55
	09/01/2013	\$25.66	\$8.70	\$4.48	\$0.00	\$38.84
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$35.67	\$7.95	\$5.23	\$0.00	\$48.85
	03/03/2013	\$35.67	\$8.20	\$4.98	\$0.00	\$48.85
	09/01/2013	\$36.55	\$8.70	\$6.58	\$0.00	\$51.83

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$29.38	\$7.95	\$5.93	\$0.00	\$43.26
	03/03/2013	\$29.38	\$8.20	\$5.68	\$0.00	\$43.26
	09/01/2013	\$29.94	\$8.70	\$6.05	\$0.00	\$44.69
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$23.08	\$7.95	\$4.19	\$0.00	\$35.22
	03/03/2013	\$23.08	\$8.20	\$3.94	\$0.00	\$35.22
	09/01/2013	\$23.52	\$8.70	\$5.24	\$0.00	\$37.46
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$35.67	\$7.95	\$9.23	\$0.00	\$52.85
	03/03/2013	\$35.67	\$8.20	\$8.98	\$0.00	\$52.85
	09/01/2013	\$36.35	\$8.70	\$9.43	\$0.00	\$54.48
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$31.48	\$7.95	\$6.44	\$0.00	\$45.87
	03/03/2013	\$31.48	\$8.20	\$6.19	\$0.00	\$45.87
	09/01/2013	\$32.08	\$8.70	\$6.59	\$0.00	\$47.37
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$23.08	\$7.95	\$3.67	\$0.00	\$34.70
	03/03/2013	\$23.08	\$8.20	\$3.42	\$0.00	\$34.70
	09/01/2013	\$23.52	\$8.70	\$3.72	\$0.00	\$35.94
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$18.89	\$7.95	\$2.86	\$0.00	\$29.70
	03/03/2013	\$18.89	\$8.20	\$2.61	\$0.00	\$29.70
	09/01/2013	\$19.25	\$8.70	\$2.85	\$0.00	\$30.80
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2012	\$41.97	\$7.95	\$10.56	\$0.00	\$60.48
	03/03/2013	\$41.97	\$8.20	\$10.31	\$0.00	\$60.48
	09/01/2013	\$42.77	\$8.70	\$11.78	\$0.00	\$63.25

**Classification**

**Effective Date   Base Wage   Health   Pension   Supplemental Unemployment   Total Rate**

**Apprentice - LINEMAN (Outside Electrical) - East Local 104**

**Effective Date - 09/03/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$25.18	\$7.95	\$3.22	\$0.00	\$36.35
2	65	\$27.28	\$7.95	\$3.66	\$0.00	\$38.89
3	70	\$29.38	\$7.95	\$4.36	\$0.00	\$41.69
4	75	\$31.48	\$7.95	\$5.06	\$0.00	\$44.49
5	80	\$33.58	\$7.95	\$5.76	\$0.00	\$47.29
6	85	\$35.67	\$7.95	\$6.47	\$0.00	\$50.09
7	90	\$37.77	\$7.95	\$7.66	\$0.00	\$53.38

**Effective Date - 03/03/2013**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$25.18	\$8.20	\$2.97	\$0.00	\$36.35
2	65	\$27.28	\$8.20	\$3.41	\$0.00	\$38.89
3	70	\$29.38	\$8.20	\$4.11	\$0.00	\$41.69
4	75	\$31.48	\$8.20	\$4.81	\$0.00	\$44.49
5	80	\$33.58	\$8.20	\$5.51	\$0.00	\$47.29
6	85	\$35.67	\$8.20	\$6.22	\$0.00	\$50.09
7	90	\$37.77	\$8.20	\$7.41	\$0.00	\$53.38

**Notes:**

**Apprentice to Journeyworker Ratio:1:2**

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$26.33	\$4.18	\$2.79	\$0.00	\$33.30
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/16/2012	\$24.78	\$4.18	\$2.74	\$0.00	\$31.70
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/01/2009	\$16.59	\$2.42	\$0.00	\$0.00	\$19.01
This classification applies only to the trimming of branches on and around utility lines.						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/01/2009	\$14.64	\$2.42	\$0.00	\$0.00	\$17.06
This classification applies only to the trimming of branches on and around utility lines.						

Additional Apprentices Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentices ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours) unless otherwise specified.

- \* Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof.
- \*\* Multiple ratios are listed in the comment field.
- \*\*\* APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.
- \*\*\*\* APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

**PART D**  
**SPECIFICATIONS**

**SECTION 010450****CUTTING AND PATCHING****Part I General****1.01 General Requirements**

- A. Include under this Section, cutting, coring, drilling, and patching of holes and openings by the General Contractor where the largest dimension exceeds 6 inches for the work of non-filed and filed sub-trades including Plumbing, Heating, and Ventilating and Electrical work, unless specifically noted otherwise in the particular Sections of this Specification. Cutting and patching whether shown or not shown on the drawings, but required for Mechanical, Electrical and Plumbing work is the responsibility of the General Contractor. The General Contractor shall patch roofing, concrete slabs, gypsum board and masonry walls, and floor, wall and ceiling finishes in areas of demolition to match existing material finishes.

**1.02 Structural Work**

- A. Do not cut and patch structural elements in a manner that would reduce the load carrying capacity or load deflection ratio. Obtain approval of the cutting and patching proposal before cutting and patching structural elements.

**1.03 Operational and Safety Limitations**

- A. Do not cut and patch operating elements or safety components in a manner that would reduce their capacity to perform as intended, or would increase maintenance, or decrease operational life or safety. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems.

**1.04 Visual Requirements**

- A. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would reduce the building's aesthetic qualities or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a visually unsatisfactory manner.

**1.05 Materials**

- A. Use materials identical to existing or adjacent materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible. Use materials whose performance will equal or surpass existing materials.

**1.06 Inspection**

- A. Before cutting, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

**1.07 Temporary Support**

- A. Provide temporary support of the work to be cut.

**1.08 Protection**

- A. Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions that might be exposed during cutting and patching operations.
- B. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- C. Take all precautions to avoid cutting existing pipe, conduit, or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

**1.09 Performance**

- A. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cut existing construction to provide for the installation of other components or the performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

**1.10 Cutting**

- A. Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible, review procedures with the original installer; comply with the original installer's recommendations.
  - 1. Where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
  - 2. Cut through concrete and masonry using a cutting machine such as a carborendum saw or diamond core drill.
  - 3. Comply with requirements of applicable sections where cutting and patching requires excavating and backfilling.
  - 4. Bypass utility services such as pipe or conduit before cutting, where services are shown or required to be removed, relocate or abandoned. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after bypassing and cutting.

**1.11 Patching**

- A. Patch with durable seams that area as invisible as possible. Comply with specified tolerances.
  - 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

---

Quincy College

2. 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.
3. Where the removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken area containing the patch, after the patched area has received primer and second coat. This may require painting of an entire wall surface, which extends to a change in plane. A change in plane is identified as an inside corner of wall surface, outside corner of wall surface, bound by casework and wood trim, and floor surface or ceiling surface.
4. Patch, repair or hang existing ceilings as necessary to provide an even plane surface of uniform appearance.

#### **1.12 Cleaning**

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit and similar features before painting or finishing is applied. Restore damage pipe covering to its original condition.

#### **Part 2 Products**

Not Used

#### **Part 3 Execution**

Not Used

**End of Section**

**SECTION 013119**  
**PROJECT MEETINGS**

**Part I General**

**1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. This Section specifies requirements for Project Meetings including:
  - 1. Pre-Construction Conference
  - 2. Construction Conferences

**1.02 Pre-Construction Conference**

- A. The Architect will conduct a pre-construction conference after execution of the Agreement and prior to commencement of construction activities. Review responsibilities and personnel assignments.
  - 1. Attendees - The Owner, Architect, Engineers, the Contractor and its superintendent, subcontractors, suppliers, manufacturers' reps, and other concerned parties shall be represented by persons authorized to conclude matters relating to the Work.
  - 2. Agenda - Discuss significant items that could affect progress, including the tentative construction schedule, critical sequencing, use of the premises, procedures for processing Change Orders and equipment deliveries.

**1.03 Construction Conferences**

- A. The Architect will conduct progress meetings at regular intervals and will notify the Owner and Contractor of scheduled dates. Coordinate meeting dates with preparation of the payment request.
  - 1. Attendees - The Owner and Architect, each subcontractor, supplier or other entity concerned with progress or involved in planning, coordination or performance of future activities shall be represented by persons familiar with the Project and authorized to conclude matters relating to progress.
  - 2. Agenda - Review minutes of the previous progress meeting. Review significant items that could affect progress. Include topics appropriate to the current status of the Project.
  - 3. Contractor's Construction Schedule - Review progress since the last meeting. Determine where each activity is in relation to the Contractor's construction schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether revisions are required to ensure that current and subsequent activities will be completed within the Contract time.

---

Quincy College

4. Review the present and future needs of each entity present, including such items as:
  - a. Time
  - b. Sequences
  - c. Deliveries
  - d. Off-site fabrication problems
  - e. Site utilization
  - f. Temporary facilities and services
  - g. Hazards and risks
  - h. Quality and work standards
  - i. Change orders
  - j. Documentation of information for payment requests

#### **1.04 Reporting**

- A. No later than seven days after each meeting, the Architect will distribute copies of minutes of the meeting to each party present and to parties who should have been present.

#### **Part 2 Products**

Not Used

#### **Part 3 Execution**

Not Used

**End of Section**

**SECTION 013300****SUBMITTAL PROCEDURES****Part I General****1.01 Construction Progress Schedule**

- A. The Contractor shall promptly, after award of Contract, prepare and submit to the Architect for approval, a schedule showing the order in which the Contractor proposes to carry on the work, with dates on which he will start the work of the several trades and the principal features of the work, and the contemplated dates for completing same. The schedule shall indicate with symbols the percentage completed at any time, and shall be based on the approved Schedule of Values as described in the General and Supplementary Conditions. The Contractor shall bring the progress schedule up to date at the end of each month in a manner so as to show all work performed during the month, and shall deliver to the Architect three copies of the revised schedule together with the monthly application for payment. The copies shall be suitable for photographic reproduction.
- B. The Contractor shall furnish sufficient forces, construction plant and equipment to insure the prosecution of the work in accordance with the approved progress schedule. If, in the opinion of the Architect or Owner, the Contractor falls behind in the progress schedule, Contractor shall take such steps as may be necessary to improve his progress and the Architect or Owner may require him to increase the number of shifts, days of work and/or the amount of construction plant, all without additional cost to the Owner.
- C. Submission of updated progress schedules shall be a condition precedent to each progress payment.

**1.02 Shop Drawings, Product Data and Samples**

- A. Submit six copies of Shop Drawings, Product Data and Samples for all items as required by the Specifications and as directed by Architect. See General and Supplementary Conditions for additional requirements.
- B. The Contractor, within 20 days after being awarded the Contract, shall prepare and submit for the Architect's review a schedule of Shop Drawings, Product Data and Samples required to be submitted for the work. The schedule shall indicate by trade the date by which final approval of each item must be obtained, and shall be revised as required by conditions of the work, subject to Architect's review. The Architect's review, including Consultant's review period, will not exceed 21 days from the established date of each submission indicated on the "Schedule of Shop Drawings, Product Data and Samples" plus the additional time, if any, for distribution by the Contractor and receipt of submissions by the Architect. The Contractor is required to strictly adhere to the established schedule dates.
- C. Notes or other information on the Shop Drawings, labels, transmittals or other items submitted which are contrary to provisions of the Contract Documents shall be deemed to be addressed to the applicable Contractor, Subcontractor, vendor or other parties involved, and shall have no force or effect with respect to this Contract, even though the Shop Drawing or sample involved is reviewed by the Architect. In particular, the terms "By Others", "N.I.C.", or words of similar meaning and import on submissions shall not be deemed to imply that the referenced items are to be omitted from this Contract.

- D. Representation: By his submittal of any shop drawing or catalog data, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, or will do so, and that he has checked and coordinated each item with other applicable approved shop drawings and the Contract requirements. Certification shall appear on each shop drawing stating that the General Contractor has made this check. All drawings without this certification will be returned without examination.
- E. Deviations: Review of shop drawings, samples or catalog data by the Architect shall not authorize any deviation from the requirements of the Contract Documents, nor shall such review relieve the Contractor from responsibility for errors or omissions therein. If the shop drawings deviate, or are intended to deviate from the Contract Documents, the Contractor shall so advise the Architect in writing at the time the shop drawings are submitted, stating the difference between the Contract requirements and that denoted by the shop drawings. A brief explanation of the purpose for the change shall also accompany the deviated shop drawings. Such deviation shall not be deemed accepted by the Architect unless the Architect thereafter provides explicit written approval of such deviation.
- F. Shop Drawings
1. To receive consideration by the Architect, Shop Drawings shall be accompanied by a letter of transmittal and each drawing shall contain the following information on the title block:
    - a. Project identification.
    - b. Architect's name.
    - c. Date of preparation of submission, and of revision if applicable.
    - d. Shop Drawing number and title of item the drawing refers to.
    - e. Architect's Drawing numbers and Specification paragraph number used as a reference in preparing Shop Drawing.
    - f. Contractor's and Subcontractor's name.
    - g. Names of person or firm preparing drawings.
    - h. Statement or stamp of approval by the Contractor, which shall signify that he has seen and examined the drawing and that requirements of the General Conditions have been complied with.
  2. Shop Drawings relating to various units comprising a proposed assembly shall be submitted simultaneously so that said units may be checked individually and as an assembly.
  3. All Shop Drawings shall be submitted directly to the Architect through the General Contractor. Drawings submitted directly from the Subcontractors, manufacturers or vendors, or directly to the Architect's consultants, will be returned to the Contractor without action.
  4. Submit six copies of each Shop Drawing of standard manufactured items in the form of manufacturer's catalog sheets, showing illustrated cuts of the items to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, and other pertinent information, accompanied by an appropriate transmittal form with specific reference to the applicable paragraph in the Specification. Two copies of each will be returned to the Contractor following review by the Architect.

5. For all Shop Drawings, including wiring and control diagrams, one transparent reproducible copy of each shall be submitted, along with two black line or blueprints. The print copies shall be made by the Contractor after his stamp and his comments or corrections, if any, have been affixed to the transparency. Procedure shall be as follows:
  - a. Each drawing transparency and print shall have a clear space approximately 40 square inches as an additional border on the right side or bottom of the transparency for stamps and Architect's comments.
  - b. The Architect will annotate the transparency and indicate one of the following marks as applicable.  
  
No Exceptions Taken  
Note Markings – Re-submittal Not Required  
Note Markings – Re-submittal Required  
Rejected
  - c. For drawings marked "Rejected", or "Note Markings – Re-submittal Required", the Architect will have prints made from the marked reproducible. Such prints shall be used for record purposes and for comparison with subsequent resubmissions. One will be retained by the Architect, one furnished to the applicable consultants, if any, and the transparency returned to the Contractor. Such procedures shall be followed until the Shop Drawing is marked "Note Markings – Re-submittal Not Required", or "No Exception Taken".
  - d. Drawings marked "Note Markings – Re-submittal Not Required", shall be treated as acceptable drawings. The Architect's comments shall be considered part of the original drawings. Should the Contractor disagree with such comments, he shall so notify the Architect in writing within fourteen days after receipt of such drawings and before commencing work on the items in question. Failing this, the Contractor shall be deemed to have accepted full responsibility for implementing such comments at no additional cost to the Owner.
  - e. Transparencies for all drawings marked "Note Markings – Re-submittal Not Required" or "No Exceptions Taken" will be returned to the General Contractor.
  - f. When the transparency is returned by the Architect with the stamp "No Exceptions Taken" or "Note Markings – Re-submittal Not Required", the Contractor shall deliver four prints of the corrected original to the Architect for the Architect's and Owner's use.
6. If catalog cuts of standard manufactured items show different types, options, finishes, performance requirements, or other variations, those features that the Contractor proposes to furnish shall be clearly circled or otherwise indicated, and all irrelevant diagrams, notes, or other information deleted or canceled. If any variations from the catalog description are proposed or required, such variations must be clearly noted on the cut by the Contractor. Catalog cuts of wiring diagrams will not be acceptable.

7. Shop Drawings shall clearly indicate all details, sectional views, arrangements, working and erection dimensions, kinds and quality of materials and their finishes, and other information necessary for proper checking and for fabrication and installation of the items, and shall include all information required for making connections to other work.
8. If any information on previously submitted Shop Drawings, aside from notations made by the Architect is revised in any way, such revision shall be circled or otherwise graphically brought to the Architect's attention. If approved drawings are subsequently revised, they shall be resubmitted to the Architect with all revisions clearly marked for the Architect's attention. Whenever drawings are revised, the latest revisions shall be circled or otherwise indicated to distinguish them clearly from all previous revisions (and from the information on the original drawing).
9. Should the Architect in checking Shop Drawings recommend changes which the Contractor deems will increase the Contract Price, the Contractor shall so inform the Architect in writing within fourteen days following receipt of the checked Shop Drawings and prior to starting fabrication of the item or items. Failing this, the Contractor shall be deemed to have waived all claims for extra compensation for the work involved.
10. The Contractor shall be responsible for obtaining and distributing copies of final Shop Drawings to his subcontractors and material suppliers needing such information, at no additional cost to the Owner.
11. The Contractor shall keep on the site, in good order, a complete up-to-date set of all approved Shop Drawings.

G. Samples

1. Before submitting samples, consult with the Architect to verify that samples will be required and to determine whether samples are to be submitted to Architect's office, field, or other location.
2. Samples shall be submitted in triplicate, unless otherwise specified or directed by the Architect.
3. The Architect will prepare a master color schedule indicating the required color, finish, pattern, material, texture, and other pertinent information in connection with interior and exterior finishes.
  - a. To facilitate the preparation of such schedule, the Contractor shall submit, within forty-five days following date of award of contract, unless otherwise extended by the Architect and the Owner, the names of the manufacturers whose products he proposes to use within the framework of the Specifications, wherever color, finish, pattern, texture, or other related information is a consideration.
  - b. Color chips shall be submitted for all items having color unless otherwise directed or approved by the Architect. Upon the expiration of such forty-five day period, the Architect will proceed with color selection and preparation of final color schedule.

- c. The Architect will select the colors and finishes of a manufacturer within the framework of the Specifications, for each item where the Contractor fails to submit the name of a specific manufacturer within the allotted time, and the Contractor shall provide such materials without additional compensation.
4. Samples may be submitted to the Architect directly from manufacturers, vendors, suppliers, subcontractors, or others, but a separate transmittal letter shall be submitted through the Contractor in each such case.
5. Approved samples of major or expensive items or assemblies, if in good condition and meeting all requirements of the Contract, may be properly marked for identification and used in the work, provided that all shipping and handling charges are paid by the Contractor.
6. Each sample shall have a label indicating the material represented, its place or origin, and the names of the producer, the Architect, the Contractor, the Subcontractor, and the building or work for which the material is intended. Samples shall be marked to indicate the Drawing numbers or Specification paragraph requiring the materials represented.
7. Approval of samples for color, texture, and other aesthetic qualities shall not be constructed as approval of other characteristics.

### **1.03 Schedule of Values**

#### **A. General**

1. Submit to the Architect two Schedules of Values within ten days of receipt of notice to proceed.
2. Upon request by the Architect, support values given with data that will substantiate their correctness.
3. Submit quantities of designated material for materials stored on which payment is expected to be made.
4. Use Schedule of Values only as basis for Contractor's Application for Payment.

#### **B. Form of Submittal**

1. Submit typewritten Schedule of Values on 8 1/2 in. by 11 in. white paper.
2. Use Table of Contents of the Project Manual as basis for format for listing costs of work for Sections under Division 2 through 16 and identify each line item with number and title of Section.

#### **C. Preparing Schedules of Values**

1. Itemize separate line item cost for each of the following general cost items:
  - a. Performance and Payment Bonds.
  - b. Field Supervisions and Layout.

---

Quincy College

- c. Temporary Construction Facilities and Controls.
  2. Itemize separate line item cost for work required by each Section of the Specification. Sections shall be further subdivided into separate line items under each Section as required by the Architect.
  3. Break down installed costs into:
    - a. Delivered cost of product.
    - b. Cost of Labor to install.
    - c. Total installed cost, with overhead and profit.
  4. For each line item, which has installed value of more than \$20,000.00, break down costs to list major products or operations under each item.
  5. Make sum of total costs of all items listed in schedule equal to total Contract Sum.
- D. Review and Re-submittal: After review by Architect, revise and resubmit Schedule of Values as is required. Resubmit revised Schedule of Values in same manner.

**Part 2 Products**

Not Used

**Part 3 Execution**

Not Used

**End of Section**

**SECTION 015000****TEMPORARY FACILITIES AND CONTROLS****Part I General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. This Section specifies temporary services. Remove when no longer needed or replaced by permanent facilities. Compliance with these provisions shall be the sole responsibility of the Contractor and shall be at the sole cost and expense of the Contractor.

**1.02 Use Charges**

- A. Cost or use charges for temporary facilities are not chargeable to the Owner or Architect and will not be accepted as a basis of claims for a Change Order. All applicable costs shall be paid by the General Contractor.

**1.03 Regulations**

- A. Comply with applicable laws and regulations including standards set forth by the Massachusetts Department of Public Safety and the Occupational and Safety Health Act of 1970, latest revision.

**1.04 Standards**

- A. Comply with NFPA Code 241, "Building Construction and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition." Comply with Occupational and Safety Health Act of 1970, latest revision.

**1.05 Conditions of Use**

- A. Keep facilities clean and neat. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload or permit facilities to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions or public nuisances to develop or persist on the site.

**1.06 Materials and Equipment**

- A. Provide new materials and equipment; if acceptable to the Architect, undamaged previously used materials and equipment in serviceable condition may be used. Provide materials and equipment suitable for the use intended.
  - 1. Lumber and Plywood - Comply with requirements in Section "Rough Carpentry."
  - 2. Tarpaulins - Waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

3. Open-Mesh Fencing - 11-gage, galvanized 2-inch, chain link fabric fencing 6-feet high with galvanized barbed wire top strand and galvanized steel pipe posts, 1 -1/2 I.D. for line posts and 2-1/2" I.D. for corner posts.

#### **1.07 Weather Protection**

- A. The Contractor shall provide temporary enclosures and heat to permit work to be carried on during the months of November through March in compliance with M.G.L. C.149 sec. 44G(d). These specifications are not be construed as requiring enclosures or heat for operations that are not economically feasible in the opinion of the Authority.
- B. "Weather Protection" shall mean the temporary protection of that Work adversely affected by moisture, wind, and cold by covering, enclosing, and/or heating. This protection shall provide adequate work areas during the months of November through March as determined by the Authority and consistent with the construction schedule to permit the continuous progress of all Work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees Fahrenheit at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Articles with added regard to performance obligations of the Contractor.
- C. Within 20 calendar days after award of the Contract, the Contractor shall submit in writing, to the Architect for approval, three (3) copies of the proposed methods for "Weather Protection."
- D. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection devices.
- E. The Contractor shall provide thermometers at places designated by the Architect in order to determine if specified temperatures are being maintained.
- F. Unit heaters, if used, shall be of the smokeless type and be installed and operated in such a way that they will not damage finished work or endanger the health and welfare of the occupants. Salamanders shall not be used.
- G. The entire responsibility for weather protection during construction, until Substantial Completion, shall be assumed by the Contractor, who shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation. The Contractor shall take the necessary precautions and provide all equipment, materials and labor necessary to adequately protect the Contract Area, previous construction, the building and its contents and occupants, and surrounding landscape areas from damage due to the construction or inclement weather during construction. Storage within the building will be limited to the project area. Neither the Contractor nor its workmen or agents shall be permitted within the building except where necessary to install the work and the Owner's prior permission has been obtained.
- H. Work damaged by frost shall be removed and replaced at the expense of the Contractor and as directed by the Architect.
- I. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Contractor to the perfect execution of the Work. This provision shall not constitute any waiver, release, or lessening of the Contractor's obligation to

bringing the Work to Substantial Completion within the period of time set forth in the Contract Documents.

- J. If during the Contract period, the Contractor is notified of insufficient weather protection, he shall, immediately, properly restore the weather protection and repair or replace any damaged unprotected materials and systems. Should the Contractor not effect immediate repair or replacement when notified, the Owner may, but shall not be obligated to, have the proper protection installed at the Contractor's expense.

#### **1.08 Temporary Construction and Support Facilities Installation**

- A. Locate for each access. Maintain facilities until Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Toilets - Personnel will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- C. Wash Facilities - Personnel will be permitted to use permanent facilities, under conditions acceptable to the Owner. Provide safety showers, eye-wash fountains and similar facilities for safety and sanitation of personnel.
- D. Drinking Water Facilities - Provide containerized tap-dispenser bottled-water type drinking water units.
- E. Temporary Enclosures - Provide temporary enclosure for protection of construction from exposure, foul weather, other construction operations and similar activities. Where heat is needed and the building enclosure is incomplete, provide enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions.
  - 1. Install tarpaulins securely, with incombustible framing. Close openings through floor or roof decks and horizontal surface with load-bearing construction.
- F. Collection and Disposal of Waste - Collect waste daily. Comply with NFP 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner. The Contractor shall supply adequate covered receptacles for waste, debris and rubbish, which shall be immediately removed from the site when full or more often, if necessary. The receptacles shall be located in areas approved by the Owner only. Receptacles shall not remain adjacent to the building overnight.
- G. Scaffolding and Staging – Where scaffolding and staging is required for the proper installation of the Work, it shall be erected to provide a minimal impact on the site. Barriers and warning lines shall be installed at the base of any scaffolding or staging and around ground areas below elevated staging. Overhead protection shall be provided where walkways pass through work areas. All scaffolding and staging shall be erected in conformance with all applicable state, federal and local codes.
- H. Preparatory Work by the Contractor – The Contractor will protect the building contents below work areas where the work requires interior access as follows. The Contractor shall cover open shelving, office and classroom equipment, and furniture, mask openings to closets, encased bookshelves, cabinets and similar fixed storage areas. No fixtures or appliances will be protected by the Owner. Upon completion of the work, the Contractor shall remove

all masking and protection and clean and restore the area to the satisfaction of the Owner, cleaning, repairing and replacing all soiled, stained or damaged floor areas.

- I. Signs – If requested by the Owner, the contractor shall conspicuously post a project sign at ground level. This sign shall designate the project entrance. Only one (1) entry may be used by the Contractor. The entry location shall be as directed by the Owner.
- J. Parking – The Owner may designate parking locations for Contractor's employees, personnel and vehicles.

### **1.09 Security And Protection Facilities Installation**

- A. Fire Extinguisher - Provide hand-carried, portable, UL rated, class "ABC" dry chemical extinguishers. Locate fire extinguishers where effective for the intended purpose, but not less than one on each floor near each usable stairwell.
  - 1. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires.
  - 2. Smoking shall be prohibited in the project area and on the property.
  - 3. Store combustible materials in containers in fire-safe locations.
  - 4. Provide supervision of welding operations, combustion type temporary heating units, and sources of fire ignition.
- B. Barricades, Warning Signs and Lights - Comply with standard and code requirements for erection of barricades. Paint appropriate warning signs to inform personnel and the public of the hazard being protected against. Where needed, provide temporary fencing, barricades, warning lines, barriers and the like, as required to segregate the construction areas from existing facilities, occupants and the public. Also, where needed, provide lighting, including flashing lights.
- C. Security Enclosure and Lockup - Install temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism and theft. Where materials and equipment must be stored, provide a secure lockup. The Owner is not responsible for Contractor's losses due to damage or theft by vandals.

### **1.10 Termination and Removal**

- A. Remove each facility when the need has ended, or replaced by a permanent facility, or no later than Substantial Completion. Complete or restore construction delayed because of interference with the facility. Repair damaged work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
- B. Temporary facilities are property of the Contractors.

## **Part 2 Products**

Not Used

## **Part 3 Execution**

Not Used

**End of Section**

**SECTION 016000**  
**PRODUCT REQUIREMENTS**

**Part I General**

**1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Products**

- A. Products are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.
  - 1. **Named Products** - are items identified by manufacturer's product name, including make or model designation indicated in the manufacturer's product literature.

**1.03 Materials**

- A. Materials are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed or installed to form a part of the Work.

**1.04 Equipment**

- A. Equipment is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

**1.05 Source Limitations**

- A. To the fullest extent possible, provide products of the same kind, from a single source.
  - 1. When the Contractor has the option of selection between two or more products, the product selected shall be compatible with products previously selected.

**1.06 Nameplates**

- A. Except for required labels and operating data, do not attach manufacturer's nameplates or trademarks on surfaces exposed to view in occupied spaces or on the exterior.
  - 1. **Equipment Nameplates** – Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an inconspicuous accessible surface. The nameplate shall contain the design characteristics and essential operating data.

**1.07 Product Deliver, Storage and Handling**

- A. Deliver, store, and handle products in accordance with manufacturer's recommendations, using methods that will prevent damage, deterioration and loss.
1. Schedule delivery to minimize long-term storage and prevent overcrowding construction spaces. Coordinate with installation to ensure minimum holding time for items that are flammable, hazardous, easily damaged or sensitive to deterioration, theft, and other losses.
  2. Deliver products in manufacturer's original sealed container or packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  3. Inspect products on delivery to ensure compliance with Contract Documents and to ensure that products are undamaged and properly protected.
  4. Store products to facilitate inspection and measurement of quantity or counting of units. Store heavy materials away from the structure in a manner that will not endanger supporting construction.
  5. Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
  6. All flammable substances shall be brought to the site daily and unused materials removed at the end of the workday.
  7. In the event that materials are exposed to the elements, they shall be marked as unacceptable and immediately removed from the site. They may not be used.
  8. On-site storage of materials is the responsibility of the Contractor. The Owner is not responsible for Contractor's losses due to damage or vandalism.

**1.08 Product Selection**

- A. Provide products that comply with the Contract Documents, are undamaged and unused at installation. Provide products complete with all accessories, trim, and finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

**1.09 Standard Products**

- A. Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

**1.10 Non-Proprietary Specifications**

- A. When Specifications list products or manufacturers that are available and may be used but do not restrict the Contractor to use of these products only, the Contractor may propose any product that complies with Contract requirement.

### 1.11 Descriptive Specification Requirements

- A. Where Specifications describe a product, listing characteristics required with or without use of brand name, provide a product that provides the characteristics and otherwise complies with requirements.
1. **Visual Matching** - Where Specifications require matching a sample, the Architect's decision on whether a proposed product matches is final. Where no product matches and complies with other requirements, comply with provisions for "substitutions" for selection of a matching product in another category.
  2. **Visual Selection** - Where requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures" or a similar phrase, select a product that complies with other requirements. The Architect will select color, pattern, and texture from the product line selected.

### 1.12 Installation of Products

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

### Part 2 Products

Not Used

### Part 3 Execution

Not Used

**End of Section**

**SECTION 017000****EXECUTION AND CLOSEOUT REQUIREMENTS****Part I General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Cleaning****A. General**

1. Execute cleaning, during progress of the Work, and at completion of the Work, as required by General Conditions and as herein specified.
2. Maintain premises and properties free from accumulations of waste, debris, and rubbish, caused by operations. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces soiled by the execution of the work, leave project clean and ready for occupancy.
3. Cleaning shall include all interior and exterior surfaces including the project site, which have been soiled by the Contractor, Subcontractors, material men, or any other persons or procedures engaged by the Contractor to complete the work.
4. Refer to Sections of the Specifications for cleaning of specific products of work.

**B. Safety and Disposal Requirements**

1. Standards: Maintain project in accordance with State Building Code and local ordinances.
2. Hazards Control:
  - a. Store volatile wastes in covered metal containers, and remove from premises.
  - b. Provide adequate ventilation during use of volatile or noxious substances.
3. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
  - a. Do not burn or bury rubbish and waste materials on project site.
  - b. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - c. Do not dispose of wastes into streams or waterways.

**C. Materials**

1. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
2. Use only those cleaning materials and methods recommended by manufacturer or surface material to be cleaned.

3. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

D. During Construction

1. Execute cleaning to ensure that the buildings, the site, and adjacent properties are maintained free from accumulations of waste materials and rubbish and windblown debris, resulting from construction operations.
2. Provide on-site containers for collection of waste materials, debris and rubbish.
3. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas off Owner's property.
4. Handle materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.
5. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

E. Dust Control

1. Wet down dry materials and rubbish to control dust and prevent blowing dust.
2. Clean interior spaces prior to the start of finish painting and continue cleaning on an as needed basis until painting is finished.

F. Final Cleaning

1. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
2. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of site-exposed interior and exterior surfaces, and all work areas, to verify that the entire Work is clean.
3. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds which have been soiled by the Contractor's operations.

### 1.03 Maintenance Manuals and Instructions

- A. The Contractor shall, upon Substantial Completion of the work, submit rough drafts of maintenance schedules, maintenance manuals, and all approved Shop Drawings, presenting full details for care and maintenance of visible surfaces and all equipment furnished and installed under the Contract.
- B. Maintenance shall consist of manufacturers' catalog cuts with descriptive information, lubricating and maintenance instructions, parts lists, usage instructions, names, addresses and telephone numbers where replacement parts and service can be quickly obtained, and all other information required for the Owner to use, maintain, and service the items properly.
- C. Upon the Architect's approval of drafts, submit three corrected copies properly bound in a logical and well arranged order, with an index, for the Owner's use.

### 1.04 Warranties and Bonds

- A. General: Compile specified warranties and bonds, review to verify compliance with Contract Documents, and submit to the Architect for his review and transmittal to the Owner.
- B. Submittal Requirements

1. Assemble two original signed copies of warranties, bonds and service and maintenance contracts, executed by Officers of each of the respective manufacturers, suppliers, and subcontractors.
  2. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
    - a. Product or work item.
    - b. Firm, with name of principal, address and telephone number.
    - c. Scope.
    - d. Date of beginning of warranty, bond or service and maintenance contract will commence upon date of Substantial Completion as established by the Architect.
    - e. Duration of warranty, bond or service maintenance contract.
    - f. Provide information for Owner's personnel:
      1. Proper procedure in case of failure.
      2. Instances which might affect validity of warranty or bond.
    - g. Contractor, name of responsible principal, address and telephone number.
- C. Form of Submittals: Prepare in duplicate packets and in the following format:
1. Size 8-1/2 inch by 11 inch; punch sheets for 3-ring binder. Fold larger sheets to fit into binders.
  2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List Title or Project and Name of Contractor.
  3. Binders: Commercial quality, three ring, with durable and cleanable plastic covers.
- D. Time of Submittals:
1. For equipment or component parts of equipment put into service during progress of construction, submit documents within ten days after inspection and acceptance. Otherwise, make submittals within ten days after acceptance, listing the date of acceptance as the start of warranty period.
- E. Submittals Required: Submit warranties, bonds, and service and maintenance contracts as specified in the respective Sections of the Specifications.

### **1.05 Closeout Requirements**

- A. Punch List: When the Architect reviews the work for Substantial Completion, he will prepare and issue to the Contractor a "punch list" of items to be corrected before final payment will be made. Such punch list shall not be construed as all-inclusive of the work, which the Contractor will be required to perform before final payment.
- B. Substantial Completion: Architect will prepare and issue a Certificate of Substantial Completion, A.I.A. G704, complete with signatures of Owner and Contractor, accompanied by list of items to be completed or corrected, as verified and amended by the Architect.
- C. Final Inspection
1. Contractor shall submit written certification that:
    - a. Contract Documents have been reviewed.
    - b. Project has been inspected for compliance with Contract Documents.
    - c. Work has been completed in accordance with Contract Documents.
    - d. Equipment and systems have been tested in the presence of Owner's Representative and are operational.
    - e. Project is completed, and ready for final inspection.

Quincy College

2. Architect will begin final inspection within seven days after receipt of certification.
  3. Should the Architect consider the Work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.
  4. Should the Architect consider that work is not finally complete:
    - a. He shall notify Contractor, in writing, stating reasons.
    - b. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to the Architect certifying that Work is complete.
    - c. Architect will inspect the Work
- D. Closeout Submittals
1. Project Record Documents.
  2. Operating and Maintenance Data.
  3. Extended Guarantees and Warranties.
- E. Evidence of Payments, and Release of Liens
1. Contractor's Affidavit of Payment of Debts and Claims, AIA G706.
  2. Contractor's Affidavit of Release of Liens, AIA G706A, with:
    - a. Consent of Surety to Final Payment: AIA G707.
    - b. Contractor's release or waiver of liens.
    - c. Separate releases or waivers of liens for subcontractors, suppliers and others with lien rights against property of Owner, together with list of those parties.
  3. All submittals shall be duly executed before delivery to the Architect.
- F. Final Application and Certificate for Payment
1. Contractor shall submit final application in accordance with requirements of General and Supplementary Conditions.
  2. Architect will issue final certificate in accordance with provisions of Conditions of the Contract.
  3. Prior to issuance of the Certificate for Final Payment by the Architect, all requirements contained in this Paragraph entitled "Closeout Requirements" and other requirements of the Conditions of the Contract shall be executed, received and approved by the Architect.

**Part 2 Products**

Not Used

**Part 3 Execution**

Not Used

**End of Section**

**SECTION 024100****DEMOLITION****Part I General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

A. Work Included:

1. Demolition and removal of existing finishes, partitions, doors and frames, and equipment as required for new work shall be performed by or coordinated and supervised by the general contractor.
2. Removal and legally disposal of demolished materials off site. Existing window treatments shall be reused at the completion of the project. Protect the existing window treatments from damaged during construction or remove, store in a safe dry location and reinstall when the construction work is complete. All existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at her/his expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.
3. Scheduling and sequencing operations without interrupting utilities serving occupied areas. If interruption is required, obtain written permission from the utility company and Quincy College. Provide temporary services as necessary to serve occupied and usable facilities when permanent utilities must be interrupted, or schedule interruption when the least amount of inconvenience will result.

- C. Related Work: The following items are not included in this Section and will be performed under the designated Sections:

1. Section 015000 - Temporary Facilities and Controls:
  - a. Maintenance of access, cleaning during construction, dust and noise control.

**1.03 Definitions**

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Protect the existing window treatments from damaged during construction or remove, store in a safe dry location and reinstall when the construction work is complete.

**1.04 Submittals**

- A. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, with early and late starting and finishing dates for each activity. Ensure Quincy College on-site operations are uninterrupted if applicable.
  2. Interruption of utility services. Indicate how long utility services will be interrupted.
  3. Coordination for shutoff, capping, and continuation of utility services.
  4. Coordination of Quincy College continuing occupancy of portions of existing building and of Quincy College partial occupancy of completed Work.
  5. Means of protection for items to remain and items in path of waste removal from building.
- B. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged, and turned over the Quincy College.
- C. Landfill Records: Provide trip tickets (receipts) indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

**1.05 Quality Assurance**

- A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.
- B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6-2006 Safety Requirements for Demolition Operations and NFPA 241-2004 Standard for Safeguarding Construction, Alteration and Demolition Operations.
- E. Pre-demolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:
1. Inspect and discuss condition of construction to be selectively demolished.
  2. Review structural load limitations of existing structure.
  3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
  5. Review areas where existing construction is to remain and requires protection.

**1.06 Warranty**

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

**PART 2 - Products**

Not Used

**PART 3 - Execution****3.01 Examination**

- A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- C. Survey of Existing Conditions: Record existing conditions by use of preconstruction videotapes.
  - 1. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
- D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

**3.02 Preparation**

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Comply with requirements for access and protection specified in Section 015000 - Temporary Facilities and Controls.
  - 2. Maintain adequate passage to and from all exits at all times. Under no condition block or interfere with the free flow of people at legally required exits, or in any way alter the required condition of such exits.
- B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).
  - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Provide temporary barricades as required to limit access to demolition areas.
  - 2. Protect existing site improvements, appurtenances, and landscaping to remain.

### 3.03 Selective Demolition, General

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each roof before disturbing the next lower roof level.
  - 2. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, roof, or framing.
  - 3. Dispose of demolished items and materials promptly.
- B. Removed and Reinstalled Items
  - 1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
  - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  - 3. Protect items from damage during transport and storage.
  - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Designer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.04 Protection of Public and Property

- A. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and Quincy College during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.
- B. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Architect, and to the satisfaction of the Quincy College.
- C. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.

### 3.05 Discovery of Hazardous Materials

- A. If hazardous materials, such as chemicals, asbestos-containing materials, or other hazardous materials are discovered during the course of the work other than those identified in these construction documents, cease work in affected area only and immediately notify the Architect

and the Quincy College of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

### **3.06 Disposal of Demolished Materials**

- A. Do not allow demolished materials to accumulate on-site.
- B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent and with no airborne particles.
- D. Burning: Do not burn demolished materials.

### **3.07 Cleaning**

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Premises shall be left in a clean condition and ready to accept alteration work and new construction.

**End of Section**

**SECTION 061000**  
**ROUGH CARPENTRY**

**Part I - General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D – Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes:
1. Wood blocking and wood furring required throughout, for the securing of work of other Sections.  
Typically for door frames, counters and cabinets, marker boards, fire extinguishers, washroom accessories, toilet compartments, Chalk board guard rails, mechanical, and electrical work.
  2. Nails, fasteners and hardware.
- B. Related Work - Items of work in the following sections are related to work performed under this section.
1. Section 010450 - Cutting and Patching
  2. Section 062000 – Finish Carpentry
  3. Section 081000 – Doors and Frames
  4. Section 101000 - Visual Display Boards, furnishing of marker boards.
  5. Section 104400 - Fire Protection Specialties, furnishing of fire extinguishers.
  6. Section 123200 - Manufactured Wood Casework

**1.03 Submittals**

- A. Comply with the pertinent provisions of Section 013300 – Submittal Procedures.

**1.04 Job Conditions**

- A. Coordinate the location of nailers, furring, grounds, blocking, framing and similar supports for other trades so that the installation of other work may be properly executed to fulfill the design requirements. Before starting installation of supports check shop drawings of other sections to ensure proper location of all supports.

**1.05 Quality Insurance**

- A. Reference Standards - Comply with applicable provisions of the following references standards, except with requirements of the Contract Documents or with requirements of authorities having jurisdiction, the most restrictive requirement or suggestion, such recommendations or suggestions are mandatory and required under this contract.
1. National Forest Products Association, "National Design Specification for Wood Construction".
  2. American Institute of Timber Construction, "Specifications".
  3. American Plywood Association, "Design and construction guide residential and commercial".
- B. Grade Stamping - Stamp and label each piece of lumber and each panel product to show the grading agency and grade of material on the surface concealed in the finish work. Remove visible grade stamps and marking after approval of material by Architect.

**1.06 Delivery, Storage and Handling**

- A. Immediately upon delivery to job site, place materials in area protected from weather and construction operations.
- B. Store materials above ground on frame work or blocking and cover with protective waterproofing covering providing for adequate air circulation or ventilation.
- C. Do not store seasoned materials in wet or damp areas.

**Part 2 - Products****2.01 Materials - General**

- A. All woodwork shall be of the kind and quality specified, and where the quality is not specified, it shall be the best of the respective kinds, and suitable for the purpose intended.
- B. In general, all framing lumber shall be construction grade fir, douglas fir or southern yellow pine.
- C. Plywood shall be APA Grade A-C, 3/4 inch thick, unless designated otherwise on the drawings.

**2.02 Moisture Content of Lumber**

- A. The maximum moisture content for lumber products shall be 19% on air-dried stock and 15% maximum on kiln-dried stock. All framing lumber shall be furnished air-dried unless specifically noted otherwise.

**2.03 Nominal Lumber Dimensions**

- A. Nominal lumber dimensions shall conform to accepted industry standards.

**2.04 Wood Preservative**

- A. All wood members in contact with the ground, concrete masonry or where noted on the drawings shall be factory pressure treated with a preservative compatible with the adjacent materials. Unless otherwise required by the manufacturers, all woodwork shall be pressure treated with wolman salts in accordance with AWPA Standard P5 for ground contact service. The degree of treatment shall be at least 0.40 lbs. per cubic foot of wood or as required to AWPA Standard U1. Wood shall have a maximum moisture content of 19% by weight on a dry weight basis. Kiln drying may be required after pressure treatment to conform to maximum 19% moisture content.

**2.05 Hardware**

- A. The Contractor shall furnish and apply in connection with his work all usual rough hardware such as hangers, nails, screws, spikes, braces, bolts, nuts, dogs, straps, lag bolts, etc. Provide rough hardware with a hot dip zinc coating ASTM A 153 - 2009 Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware.

**2.06 Fasteners**

- A. Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

- B. Where rough carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating meeting ASTM A 153 - 2009 Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware.

### **Part 3 - Execution**

#### **3.01 Installation - General**

- A. Discard units of material with defects which might impair quality or work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- B. Set carpentry work to required level and lines, with members plumb and true to line.
- C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required to recognized standards.
- D. Countersink nail, screw or bolt heads on exposed carpentry work as required.
- E. Use common wire nails except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood predrill as required.

#### **3.02 Wood Grounds, Nailers, Blocking and Sleepers**

- A. Provide wherever shown and where required for screening or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.
- B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated.

**End of Section**

**SECTION 062000****FINISH CARPENTRY****Part I - General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D – Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes the following:
1. Counter for computers
  2. Cable trays for computers
  3. Installation of door hardware furnished under Section 087000 – Door Hardware
  4. Installation of fire extinguishers furnished under Section 104400 - Fire Protection Specialties
  5. Installation of marker boards furnished under Section 101000 - Visual Display Boards
  6. Installation of signage furnished under Section 104000 - Identification Devices
- B. Related Work - Items of work in the following sections are related to work performed under this section:
1. Section 061000 – Rough Carpentry
  2. Section 087000 – Door Hardware
  3. Section 101000 - Visual Display Boards, furnishing of marker boards
  4. Section 104000 - Identification Devices, furnishing of signage.
  5. Section 104400 – Fire Protection Specialties, furnishing of fire extinguishers.

**1.03 Submittals**

- A. Shop Drawings
1. Submit shop drawings for each item specified. Shop drawings shall show in detail the construction, sizes, thicknesses, dimensions, method of assembly, supports, anchors, plans, elevations and relationship to adjacent construction.
  2. All shop drawings submitted shall be checked by the Contractor and indicated as such on the Shop Drawings.
- B. Samples
- Submit three samples of each type of material requiring selection of color and texture.

**1.04 Job Conditions**

- A. All mill and shop work shall be executed in a shop of approved standing where work may be inspected by the Architect before delivery.

**1.05 Quality Assurance**

- A. All woodwork shall comply with premium grade of the quality standards of the Architectural Woodwork Institute, latest edition.

**Part 2 - Products****2.01 Materials**

- A. All woodwork shall be of the kind and quality specified, and where the quality is not specified, it shall be the best of the respective kinds, and suitable for the purpose intended.
- B. Wherever thickness of material is mentioned in connection with wood finish, it is the finished thickness that is meant unless followed by the word "nominal".
- C. Any material having defects will be rejected and must be immediately removed and replaced with material which is entirely satisfactory to the Architect.
- D. Each panel of softwood plywood shall be identified with the appropriate DFPA grade-trademark of the American Plywood Association, and shall meet requirements of the latest edition of U.S. Product Standard PS-1 for softwood Plywood - Construction & Industrial.
- E. In general, wood finish is to be molded with all exposed sharp corners taken off.
- F. Plastic laminate counter tops by Formica.
- G. All plywood shall be APA Grade A-A.
- G. All colors shall be selected by owner.

**Part 3 - Execution****3.01 Installation - General**

- A. Examine all installation conditions. Do not commence work until installation conditions are acceptable. Commencement of work will be considered unqualified acceptance of installation conditions.
- B. Shim as necessary with concealed shims.
- C. Accurately scribe and closely fit all faceplates, filler strips and trim strips to irregularities of adjacent surfaces.
- D. Install all woodwork level, plumb, true to line and anchored securely.

**3.02 Millwork and Trim**

- A. All millwork and trim shall be finished smooth and free from all machine and tool marks that will show through the finish. Nails used to fasten painted work will be set to receive putty.
- B. All joints will be tight and formed to conceal shrinkage. Miters 4 in. or more from heel to point shall be glued.
- C. Finish shall be made in as long as lengths as possible and jointed.
- D. Running finish shall have a minimum of splices and joints and where such splices and joints occur, they shall be fastened securely and all exposed surfaces shall be smooth, continuous planes. Grain appearance of members to be spliced shall be matched as much as practical.

**3.03 Quality Standards**

- A. All interior finish shall be erected plumb, level and true, firmly backed up and blocked for proper nailing, blind nailed where possible and all nails carefully set. Woodwork shall be carefully fitted to adjoining work and care shall be taken not to damage these adjoining surfaces in any way. All joints where deemed necessary by the Architect shall be made with splines, dowels or tenons and thoroughly glued.
- B. All woodwork erected in an un-workmanlike manner will be rejected and any bruises or imperfections in the finish shall be repaired by refinishing or replacing the entire part as the Architect may direct.

**3.04 Workmanship**

- A. Finished woodwork shall be well smoothed and sandpapered and left complete, ready for painting and finishing. All molding shall be clearly cut, sharply defined, all miters accurately made, shop miters four inches or more from heel to point shall be put together with wood splines, dowels or tenons, and thoroughly glued. All work shall be assembled in the best manner so as to securely hold together with close joints. All fastenings shall be concealed wherever possible.
- B. Measurements for work shall be taken at the building by the wood finish subcontractors.
- C. All work shall be properly and firmly backed up and blocked where required. All finish woodwork shall be erected absolutely true, level and secure, close jointed and blind nailed wherever possible, and where this is not possible, the nails shall be so located and driven as not to be visible in the finish; all nails shall be carefully set. All finish woodwork that may be erected in an un-workmanlike manner will be rejected and either repaired to the Architect's satisfaction or removed and replaced by satisfactory new material as to the Architect may direct.

**End of Section**

**SECTION 079200****JOINT SEALANTS****Part I General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D – Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes:
  - 1. Interior caulking
  - 2. Fire stop caulking
- B. Related Work - Items of work in the following sections are related to work performed under this section.
  - 1. Section 010450 - Cutting and Patching
  - 2. Section 062000 – Finish Carpentry
  - 3. Section 081000 – Doors and Frames
  - 4. Section 096500 - Resilient Flooring
  - 5. Section 123200 – Manufactured Wood Casework
  - 6. Section 092116 – Gypsum Board Assemblies
  - 7. Section 123200 – Manufactured Wood Casework
  - 8. Section 210000 – Fire Protection
  - 9. Section 220000 – Plumbing
  - 10. Section 230000 - Heating, Ventilation, and Air Conditioning
  - 11. Section 260000 - Electrical

**1.03 Submittals**

- A. Manufacturer's Specifications and Installation Instructions.
- B. Color selector

**Part 2 Products****2.01 Materials**

- A. Interior Caulking:
  - 1. Architectural Grade one-part, odorless caulking compound as manufactured by Tremco, PRC, Pecora or approved equal. Color shall be as selected by the Owner.
- B. Fire Stop Caulking and Systems
  - 1. Fire stop caulking shall be a one part, endothermic water based caulking.
  - 2. Fire stop caulking system shall include sheet type barriers and collar accessories to seal large holes.
  - 3. Fire stop caulking system shall be similar or equal to "Interam Firedam 150" as manufactured by 3M, St. Paul, MN.
- C. Primer
  - 1. As recommended by manufacturer of caulking and sealant material.

### Part 3 Execution

#### 3.01 Inspection

- A. Surfaces to receive the sealant and caulking work shall meet at least the minimum requirements of the manufacturer of the materials.
- B. Surfaces to receive materials shall be examined by the Contractor and work shall not be started until defects have been corrected.

#### 3.02 Installation

- A. General
  - 1. Interior caulking shall be used to caulk joints in the interior where called for on the Drawings or required to create well-sealed and finished interior.
  - 2. Exterior sealants shall be used to seal all louvers and all exterior wall penetrations where called for on the Drawings or required to create a well sealed and finished exterior.
  - 3. The sealant shall bond to two opposing surfaces only. A "bond breaker" shall be installed between sealant and non-release types of backup material to prevent destruction of sealant as movements occur. When space for back-up material does not exist, a "bond breaker" shall be used as a release material between sealant and back of joint.
- B. Application
  - 1. All surfaces shall be clean, dry, and free of dust, loose aggregate, oil, grease, wax, tar, asphalt, dirt and grit.
  - 2. Apply primer, as recommended by the manufacturer, to all surfaces prior to the application of caulking or sealant.
  - 3. Caulking compounds and sealants shall be applied with a hand or pressure gun having a nozzle of proper size to fill the joint. Material shall be driven in with sufficient pressure to fill and firmly compact the joint.
  - 4. Caulking compounds and sealant shall not be applied at a temperature below 40 degrees Fahrenheit.
  - 5. Finish joints neatly by pointing with a beading tool.
  - 6. All excess material shall be removed. Care shall be taken to prevent smears. Adjacent material, which has been soiled, shall be cleaned immediately and all work shall be left in a neat clean condition. All caulking and sealing shall be done before final paint coat is applied. All caulked and sealed joints shall be watertight. Masking tape may be employed to assure clean, sharp lines along joint.
  - 7. All joint preparation, mixing of materials, application of caulking and sealants, cleaning, etc. shall be in strict accordance with the printed instructions of the manufacturer.

#### 3.03 Installation of Fire Stop

- A. Remove loose dirt and other foreign materials from penetration surfaces.
- B. Install mineral-wool, batt, and equivalent damming material recommended by caulking manufacturer, into the penetration at the proper depth to allow for the required caulking depth to achieve the required fire rating.
- C. Following manufacturer's written installation requirements, install the proper amount of caulking in the penetrations.

#### End of Section

**SECTION 081000****DOORS AND FRAMES****Part I - General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide all doors, door frames, overhead doors as shown and/or scheduled on the drawings, complete with all stops, anchors and accessories.
  - 1. Wood doors
  - 2. Hollow metal frames
- B. Related Work - Items of work in the following sections are related to work performed under this section:
  - 1. Section 087000 – Door Hardware
  - 2. Section 088000 – Glazing
  - 3. Section 092116 – Gypsum Board Assemblies
  - 4. Section 099123 – Interior Painting

**1.03 Submittals**

- A. Submit shop drawings indicating details of each frame type, schedule of doors and frames, door elevations and details, conditions at openings with various wall thicknesses and materials, location and installation requirements for hardware, thickness of materials, joints, and connections.
- B. All shop drawings submitted shall be checked by the General Contractor and indicated as such on the Shop Drawings.

**1.04 Job Conditions**

- A. Coordinate installation of door and frames so that the installation of other work may be properly executed to fulfill the design requirements. Check shop drawings of other sections to ensure proper installation.

**1.05 Delivery, Storage and Handling**

- A. Immediately upon delivery to job site, place materials in area protected from weather and construction operations.
- B. Deliver, store and handle all materials in a manner to prevent damage and deterioration. Provide standard protective covers.
- C. Store doors upright in a protected dry area off the ground or floor with at least 1/3 inch space between pieces.
- D. Follow storage and handling requirements of the manufacturer.

## Part 2 - Products

### 2.01 Materials

#### A. Gauges

1. Gauges shown on the drawings or specified herein are U.S. Standard for ferrous metals, and Brown and Sharp for non-ferrous metals. Gauges and thickness of materials shown or specified are minimum. Materials shall conform to the requirements specified for the particular item; and where these requirements are not specified in detail, the materials shall be suitable for the intended usage of the item.

#### B. Hollow Metal Doors

1. Metal doors shall be of the indicated thickness, flush type and constructed of new prime quality cold-rolled or hot-rolled stretcher-leveled steel. The face plates for doors shall be formed from 16 gauge steel for exterior doors and 18 gauge steel for interior doors. All exterior doors and frames shall be hot-dip galvanized to meet ASTM A653-2011 specifications with a coating weight of G60.
  - a. Doors shall have continuous internal reinforcing channels or Z-shaped members of 22 gauge steel, full height of door, spaced not more than 6 inches on center and spot welded to face sheets 3 inches on center. Doors with continuous truss sheets 3 inches on center both vertically and horizontally will also be accepted. Provide 16 gauge stile channels and 16 gauge horizontal stiffener channels at top and bottom of doors welded to face sheets. All hollow portions of doors shall be completely filled with mineral rock wool or approved equal. Exposed joints shall be fully welded and ground smooth. Interlocking joints or seams will not be permitted on door faces or edges. Doors shall have flush top and bottom caps sealing against water.
2. Doors shall be prepared and reinforced to receive door hardware in accordance with the approved door hardware schedule and template.
  - a. Doors shall be mortised, reinforced, drilled and tapped at the factory for fully templated hardware only, in accordance with the approved hardware schedule and templates. Where surface-mounted hardware is to be applied, doors shall have reinforcing plates only. All drilling and tapping shall be done in the field.
  - b. Minimum gauges for hardware reinforcing plates shall be as follows:
 

1.	Hinge and pivot reinforcements	7 gauge
2.	Reinforcements for lock face, flush bolts, concealed holders, concealed or surface mounted closers	12 gauge
3.	Reinforcements for all other surface-mounted hardware	16 gauge
3. All welds and joints shall be ground smooth. Door shall be thoroughly cleaned, filled and sanded prior to painting.

4. All doors and accessories shall be given one shop coat, all over, of the specified primer paint.

#### B. Hollow Metal Frames

1. Frames shall be fabricated of formed or rolled steel to the size and profile shown on the drawings. Interior frames shall be 16 gauge. All frames shall be hot dipped galvanized after fabrication and then primed. Hot-dip galvanizing shall meet ASTM A653-2011 specifications with a coating weight of G90.
2. Corners of frames shall be accurately coped. Exterior frames shall be solidly welded with all welds ground smooth and finished flush on exposed and contact surfaces. Interior frames shall be "Knock-Down" type.
3. Frames shall be prepared and reinforced to receive door hardware in accordance with the approved door hardware schedule and templates.
  - a. Frames shall be mortised, reinforced, drilled and tapped at the factory for fully templated mortised hardware only, in accordance with approved hardware schedule and templates. Where surface-mounted hardware is to be applied, frames shall have reinforcing plates only. All drilling and tapping shall be done in the field.
  - b. Minimum thickness of hardware reinforcing plates shall be as follows;
 

Hinge and pivot reinforcements	7 gauge
Strike reinforcements	12 gauge
Flush bolt reinforcements	12 gauge
Closer reinforcements	12 gauge
Reinforcements for surface mounted hardware	12 gauge
4. Anchors shall be not less than 16 gauge steel. The number of anchors provided on each side shall be as follows:
 

Frames up to 7'-6" height	3 anchors
Frames up to 12'-0" height	4 anchors
5. Frames for installation in stud partitions shall be provided with 18 gauge steel anchors welded inside jambs. Anchors spaced as required for masonry work.
6. All frames shall be provided with a steel spreader temporarily attached to the feet of both jambs to serve as a brace during the shipping and handling.
7. Provide all anchors, clips and trim as shown and detailed.
8. All frames (including anchors and accessories) shall be given a shop coat, inside and outside of the specified primer paint.
9. Sidelights shall be of wire glass as specified and provided in Section 08800 - Glazing.

#### D. Wood Doors

1. 7-ply-veneer, structural composite core and fire rated mineral core doors meeting AWI 1300 Premium Grade specifications. Mohawk 7-ply Gold Series Commercial & Architectural Doors.
2. Cross banding are solid wood span entire surface of door with grain positioned perpendicular to the face.

---

Quincy College

3. Stiles shall be edge bonded 1-3/8" standard stiles.
4. Blocking for lock blocks.
5. Finish veneer shall be plain sliced, "A" Grade, booked matched, Oak veneer faces. Mohawk 12-step veneer finish process or equal.

E. Labeled Doors and Frames

1. Provide labeled doors as called for, constructed similar to the doors specified herein. Labeled doors shall be made in strict accordance with Underwriter's Laboratories, Inc. requirements with their label affixed to doors.
2. Where labeled doors are called for, the supporting frames shall bear the same label.

### Part 3 - Execution

#### 3.01 Inspection

- A. Openings to receive doors and frames shall be examined and work shall not be started until defects have been corrected.

#### 3.02 Installation

- A. Painting
1. Shop Painting
    - a. All hollow metal work shall receive one shop coat of primer.
  2. Field Painting
    - a. Field painting shall be done under Section 099123 – Interior Painting.
- B. Protection
1. Protect installed doors and frame work against damage from other construction work. Scratches or disfigurement caused in shipping, handling or installation shall be promptly cleaned and touched up with a rust-inhibitive enamel.
  2. Refinish or replace doors damaged during installation.
  3. Rehang or replace doors which do not swing or operate freely.

**End of Section**

**SECTION 087000****DOOR HARDWARE****Part 1- General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirement, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. This section specifies hardware for doors. Furnish and install hardware for doors except as listed below as "related work" or otherwise noted on door schedule or Drawings.
- B. Related Work Specified in Other Sections:
  - 1. Section 081000 – Doors and Frames

**1.03 Referenced Standards**

- A. National Fire Protection Association (NFPA)
  - 1. NFPA-80 (2013) Standard for Fire Doors and Other Opening Protectives
  - 2. NFPA-101(2012) Life Safety Code
- B. Door and Hardware Institute (DHI)
  - 1. DHI Installation Guide
  - 2. DHI Keying Terminology
- C. ANSI/BHMA Standards
- D. Massachusetts State Building Code, 780 CMR
- E. MAAB: Rules and Regulations of the Massachusetts Architectural Access Board.
- F. ADA: Americans with Disabilities Act.

**1.04 Submittals**

- A. Hardware Schedules and Product Data: Submit 6 copies of a vertical format typed finish hardware schedule including catalog cuts as recommended by DHI. The Architect's approval will not relieve the contractor of the responsibility of providing required hardware needed to complete the project.
- B. Samples: Upon request from the Architect, submit 1 sample of each proposed hardware item to be used in this project. Samples remain the property of the supplier and will be returned after completion of the project.
- C. Furnish templates needed by door and frame manufacturer(s) to enable proper machining for the required template hardware.

Quincy College

- D. Closeout Submittals - Furnish the following for inclusion in the Owner's Operation and Maintenance Manual, specified in Section 017000 – Execution and Closeout Requirements. Place in a three ring binder as specified in Section 017000 – Execution and Closeout Requirements.
1. A final copy of the approved and as-built hardware schedule.
  2. A final copy of the approved keying schedule.
  3. Catalog cuts for each item used in the project.
  4. Parts list and numbers for each item used.
  5. Maintenance and installation instructions for all items.

#### **1.05 Quality Assurance**

- A. Manufacturer's model numbers listed in sets are to establish the standard of quality for this project. Similar items by manufacturers other than those listed that conform to this quality standard may be accepted upon prior approval by Architect provided required data and physical samples are submitted in accordance with Section 01630.
- B. Hardware supplier must be engaged in regularly contracting work and be staffed to expedite the work. The firm shall have been furnishing finish hardware on similar projects in the vicinity of this project for no less than five years. The firm shall also employ a certified Architectural Hardware Consultant (AHC) or a person with proper documented qualifications acceptable and approved by the Architect, to inspect periodically and direct detailing, setting, applying of architectural grade mechanical and electronic finish hardware.

#### **1.06 Delivery, Storage and Handling**

- A. Hardware shall be delivered to the job site in the manufacturer's original packages, marked to correspond with the approved hardware schedule door numbers.
- B. Provide a clean, dry, locked and lighted room with shelves exclusively used to store hardware.
1. After verification of quantities delivered a proof-of-delivery document shall be signed by both the supplier's representative and an authorized representative from the contracting firm confirming receipt of materials.

#### **1.07 Warranties**

- A. Supply written manufacturer's warranties, agreeing to repair or replace door hardware which is defective in manufacture or installation, or which fails to operate in accordance with the specifications during the warranty period. Warranty periods shall be as follows:
1. Door Closers: 10 years from date of Substantial Completion.
  2. Hanging devices: Life of the building.
  3. Other hardware items: 1 year from the date of Substantial Completion.

#### **1.08 Maintenance Materials**

- A. Fasteners: Furnish 6 extra screws or fasteners of each type size and of the same finish used in this project.

Quincy College

**Part 2- Products****2.01 Materials****A. Locksets:**

1. Schlage L-9000 series, lever (07 design) with L standard cylinder escutcheon where noted in the schedule as a mortise lock.

**B. Hinges:**

1. Exterior: Continuous, full mortise, clear anodized aluminum, heavy duty, geared, with rain caps, Roton 780-112HD for exterior doors.
2. Interior: Five knuckle, full mortise, ball bearing, heavy duty, 4-1/2 inch by 4-1/2 inch, three per door leaf. Finish for interior hinges shall be US10 for interior doors.

- C. Closers shall be LCN 4114N-CUSH, parallel arm, push side mounted unless otherwise noted. Door closers shall be 100% forged high strength cast iron and carry a five year manufacturer's warranty.

- D. Thresholds shall be extruded aluminum.

1. Zero 546A – interior doors.
2. Zero 564A – exterior doors.

**E. Keying:**

1. Furnish temporary construction cylinders with keys for all doors.
2. All locks and cylinders shall be keyed to a new building keying system.
2. Furnish the following quantity of keys:
  - a. 3 Master Keys
  - b. 3 Keys for each cylinder or keyed alike set

- F. Kick plates shall be 8 inches in height and shall be 2" in less than full width on swing side. Plates shall be .050 in. thick with beveled edges and countersunk holes.

- G. Finishes of all hardware shall be Satin Bronze (US10) unless otherwise specified.

- H. Silencers shall be made of rubber.

- I. Door stops shall be Glynn-Johnson wall mounted with concealed mounting.

**Part - 3 Execution****3.01 Examination**

- A. Installer shall examine doors, frames and conditions under which the work is to be performed and notify the Architect in writing of any detrimental conditions to the proper completion of the installation. Do not proceed until unsatisfactory conditions have been corrected. Starting the Work means the installer has accepted substrates and conditions and the responsibility.

Quincy College

**3.02 Installation**

- A. Comply with manufacturer's installation instructions. Install door-closing devices away from public view when possible.
- B. Mount the finish hardware at the recommended location listed in DHI's document on installation, except where required by law.
- C. Install surface closer/overhead holder or stops with trough bolts and/or grommet nuts.

**3.03 Adjusting and cleaning**

- A. At completion of installation, hardware shall be left clean and free from disfigurement. Make final adjustments to closing devices after HVAC system has been activated and balanced. Where hardware is found defective, repair or replace as instructed by the Architect.

**3.04 Protection**

- A. Provide proper protection of hardware items until the Architect accepts the project as complete and the building is being turned over to the owner.

**3.05 Hardware Sets**

- A. Hardware sets indicated represent complete hardware for each leaf of door opening. The quantity of each set is the responsibility of the hardware supplier. Number designations following each item are from applicable ANSI Standard or specified manufacturer's number.

**01**

- 1 ½ pair Interior hinges, full mortise, ANSI Grade 1
- 1 each Closer, ANSI Grade 1
- 1 each Mortise Lockset, ANSI Grade 1, Classroom Lock function
- 1 set Silencers
- 1 each Kick plate
- 1 each Door stop

**02**

- 1 ½ pair Interior hinges, full mortise, ANSI Grade 1
- 1 each Mortise Lockset, ANSI Grade 1, Entrance/Office function
- 1 set Silencers
- 1 each Kick plate
- 1 each Door stop

**03**

- 3 pair Interior hinges, full mortise, ANSI Grade 1
- 1 each Cylindrical Lockset, ANSI Grade 1, Classroom Lock function  
(Left hand door to be the operable door)
- 1 set Silencers
- 2 each Flush Bolts
- 1 each Dust Proof Strike
- 2 each Door stops (one floor stop and one wall stop).

**End of Section**

**SECTION 088000****GLAZING****Part I - General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D – Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - The work of this section includes, but is not limited to, glass and glazing for the following:
  - 1. Glass and glazing for interior hollow metal framed sidelights.
- B. Related Work - Carefully examine all of the Contract Documents for requirements which may affect the work of this section. Other specifications sections which relate to the work of this section include, but are not limited to:
  - 1. Section 081000 – Doors and Frames

**1.03 Intent and Performance Requirements**

- A. A major intent of the work of this section is to withstand normal loads without failure, breakage of glass, or other defects.
  - 1. Temperature Range -Glass and glazing shall function correctly and normally throughout an ambient temperature range of 100°F above and below installation temperature.
  - 2. Safety Glass - Provide Building code complying safety glass in all doors, entrances, sidelights, storefronts, and other locations required by code or authorities having jurisdiction. Provide “safety glass” for all tempered and laminated glass used on this project.
  - 3. Laminated Glass - Laminated glass shall be free from delamination, edge separation, visual discoloration, and other damage throughout the warranty period.
  - 4. Clear Wire Glass - Polished plate 1/4” thick, 3/4” square welded wire mesh reinforcing. Use clear wire glass where indicated on the details.

**1.04 Quality of Assurance**

- A. Source - For each type of glass and glazing material required for the work of this section, provide primary materials which are the products of one manufacturer. Provide secondary materials which are acceptable to the manufacturers of the primary materials. All glass of each type shall exactly match as approved by the Architect.
- B. Glass Thicknesses - Thicknesses indicated throughout the Contract Documents are minimum thicknesses only.
  - 1. Determine thicknesses and types of glass in compliance with ASTM E1300.
  - 2. Comply with the applicability restrictions of ASTM E1300.
  - 3. When ASTM E1300 does not apply, provide project specific engineering of glass thickness and type.
  - 4. Comply with recommendations of the glass manufacturer of each type of glass used.

- C. Standards - Comply with applicable provisions of the following reference standards, except where reference standards conflict or appear to conflict with other reference standards or with requirements of the Contract Documents or with requirements of authorities having jurisdiction, the most restrictive requirement is required. Where the language in any of the reference standards is in the form of a recommendation or suggestion, such recommendations or suggestions are mandatory and required under this Contract.
1. General Glass and Glazing - Flat Glass Marketing Association "Glazing Manual" and "Sealant Manual."
  2. Safety Glass Standards - Where tempered glass and laminated glass is indicated, provide glass which complies with ANSI Z97.1-2009 and requirements of CPSC 16 CFR Part 1201 (150 foot-pounds impact force for lites up to 9 square feet and 400 foot-pounds impact force for larger lites). Permanently mark all safety glass with certification label of Safety Glass Certification Council.
  3. Fire-Rated Wire Glass - Provide Products which are identical to those whose fire-resistance rating has been tested and which are labeled or listed by independent agencies acceptable to the Architect and authorities having jurisdiction.

#### 1.05 Submittals

- A. Product Data - Submit manufacturer's product data, installation instructions, use limitations and recommendation for each material used. Provide certifications stating that materials comply with requirements.
1. Warranties - Submit example copies of manufacturer's warranties before ordering materials.
- B. Glass Thicknesses - Provide project specific determination and certification of glass thicknesses.
1. Provide table or schedule showing: each type of glass, glass location, largest glass size for each type and location, and design load for each.
  2. Provide comprehensive, notarized certification that all glass types and thicknesses provided on the project are adequate to meet the required loads and the requirements of authorities having jurisdiction.
- C. Verification Samples - Submit at least two representative samples of each glass and glazing material that is to be exposed in the finished work, showing the full range of color and finish variations expected.
1. Glass - Provide glass samples having minimum area of 144 square inches.
  2. Glazing - Provide samples of sealant and glazing materials.

#### 1.06 Delivery Storage and Handling

- A. Deliver materials and products in labeled, protective cartons and crates. Store and handle in strict compliance with manufacturer's instructions and recommendations and FGMA Glazing Manual.
1. Protect from all possible damage.
  2. Protect materials during storage from moisture, sunlight, excess heat, sparks and flame.
  3. Use clean gloves and tools when handling materials. Avoid contamination.
  4. Sequence deliveries to avoid delays, but minimize on-site storage.

- B. Coordinate installation of glazing work so that the installation of other work may be properly executed to fulfill the design requirements. Check shop drawings of other sections to ensure proper installation.

### **1.07 Warranties**

- A. Glass - Provide written warranties signed by manufacturer, agreeing to repair or replace work which exhibits defects in materials or workmanship for the following periods. "Defects" is defined to include, but is not limited to, abnormal aging or deterioration, failure of hermetic seal in insulating units, edge separation or delamination of laminated glass, peeling, cracking, crazing or other failure of coatings in coated glass, and failure to meet requirements of Contract Documents.
  - 1. Insulating Glass - 10 years from date of Substantial Completion.
- B. Wire Glass Installation - Provide written warrant signed by installer and Contractor, agreeing to repair or replace work which exhibits defects in materials or workmanship. "Defects" is defined to include, failure of glazing system to maintain air tight and water tight seals, and failure to meet requirements of Contract Documents.
  - 1. Warranty Period: 3 years.

## **Part 2 - Products**

### **2.01 Glass Materials and Products**

- A. Clear Glass
  - 1. Clear Heat Strengthened Glass - Provide ASTM C1048-2012, Condition A, Type I, Class 1, Quality q3, kind HS.
  - 2. Clear Tempered Glass - Provide fully tempered safety glass complying with ASTM C1048-2012, Condition A, Type I, Class 1, Quality q3, kind FT.
- B. Wire Glass - Provide UL listed, fire-rated, ASTM C1036-2011 polished transparent wire glass complying with ANSI Z97.1-2009. Provide Type II - patterned and wire glass, Form 1 - polish both sides, Quality q8 - glazing.
  - 1. Thickness of Wire Glass: 1/4 inch, unless otherwise indicated or required.
  - 2. Wire Glass Pattern: Provide square pattern with wires at 45 degree angle to glazing frame.

### **2.02 Glass Materials and Products**

- A. General Glazing Requirements - Provide sealants and glazing materials which have performance characteristics suitable for applications intended. Ensure that glazing sealants are compatible with laminated glass interlayer and with all surfaces to be in contact including setting blocks, side blocks, glazing gaskets and tapes.
  - 1. Colors - Provide colors of sealants and gaskets as selected by Architect from manufacturer's complete range of options.
- B. Glazing Tape and Materials for Interior Work - Except as otherwise indicated, provide PVC foam tape with self-adhering adhesive on one side. Provide tape width equal to bite on glass. Provide tape thickness as recommended by Tape manufacturer for joint size.
  - 1. Acceptable Product: Provide Norton "Norseal V-780."
  - 2. Interior Glazing Tape Color: Black, unless otherwise indicated or approved by Architect.

### Part 3 - Execution

#### 3.01 Installation

- A. Pre-Installation Examination (Required) - The Installer shall examine previous work, related work, and conditions under which this work is to be performed and notify Contractor in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Installer accepts substrates, previous work, and conditions.
- B. Manufacturer's Instruction - Strictly comply with manufacturer's instructions and recommendations, except where more restrictive requirements are specified in this section.
- C. Installation - Comply with FGMA "Glazing Manual" and Sealant Manual". Create water tight and air tight installations. Do not glaze when ambient temperature is below 40°F, unless specifically approved by Architect.
  - 1. Inspect all glass before installation and do not install defective glass. Check glass for proper size, squareness, edge bite, and clearances and make necessary corrections.
  - 2. Protect glass from all damage including edge damage. Use roller blocks when handling glass. Replace all damaged or weakened glass. Protect edges of insulating units from solvents, moisture, and damage.
  - 3. Thoroughly clean glazing channels and pockets immediately before glazing and keep them dry. Where sealants are to be adhered, remove coating which are not firmly bonded to substrates. Remove lacquer, if any, from framing.
  - 4. Center glass in opening, provide minimum 1/2 inch glass bite and 1/8 inch minimum jamb edge clearances, unless other wise indicated.
  - 5. Glaze in a manner to permit simple replacement of glass without dismantling framing.
  - 6. Place glass with uniform pattern, draw, bow, and similar visual characteristics. For tempered glass, place roll wave distortion, if any, parallel to sill to minimize visual objects and conceal tong marks, if any, with framing and glazing materials.
  - 7. Install tapes and gaskets to eliminate dirt and moisture pockets. Miter and seal tapes and gaskets at corners and joints. Do not overlap tapes and gaskets at corners. Install tapes and gaskets to prevent pulling away corners. Do not stretch tapes and gaskets into place. Do not permit gaps at corners whether from stretching, shrinkage, or any other cause.

#### 3.02 Cleaning, Protection and Responsibility for Broken

- A. Cleaning -Clean exposed surfaces using materials and methods recommended by glass manufacturers. Remove and replace work that cannot be successfully cleaned.
  - 1. Re-clean all glass immediately before final acceptance of the project by the Owner. Clean installed glass frequently during the project, if necessary, to remove build-up of potentially harmful construction contaminants.
- B. Protection and Broken Glass - Provide temporary protection to ensure work is without damage or deterioration at time of final acceptance. Do not apply markers to surfaces of glass. Remove protection and reclean glass immediately before final acceptance. Remove and replace all broken, chipped, cracked, scratched or otherwise damaged glass from whatever cause.

#### 3.03 Schedule

- A. The following glass types are used for convenience: See "Description of Work" at the beginning of this section for information on subcontracting and division of work.

Type A - Clear Wire Glass - Polished plate 1/4 inch thick, 3/4 inch square welded mesh wire reinforcing. Use clear wire glass in sidelights as indicated on the elevations and details.

Quincy College

Type B - Tempered Glass - Heat-tempered glass with strength levels 3-5 times that of Standard annealed glass.

**End of Section**

**SECTION 092116****GYP SUM BOARD ASSEMBLIES****Part 1 - General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide all labor materials, equipment, implements and supervision required to complete all gypsum wallboard and metal stud work shown on the Drawings and/or specified herein. The work includes, but is not limited to the following:
1. Metal studs, runners, casing beads, furring channels and accessories for gypsum wallboard applications.
  2. Gypsum wallboard.
  3. Taping and joint treatment.
- B. Related Work - Items of work in the following sections are related to work performed under this section:
1. Section 061000 – Rough Carpentry
  2. Section 062000 – Finish Carpentry
  3. Section 079200 – Joint Sealants
  4. Section 081000 – Doors and Frames
  5. Section 099123 – Interior Painting – painting of gypsum board surfaces.
  6. Section 123200 – Manufactured Wood Casework
  7. Section 220000 – Plumbing
  8. Section 230000 - Heating, Ventilating, and Air-Conditioning
  9. Section 260000 - Electrical

**1.03 Submittals**

- A. Manufacturer's information, installation instructions, gages, spacing, attachments, and material samples shall be submitted for all products specified under this section.

**1.04 Job Conditions**

- A. Coordinate installation of metal stud and drywall work so that the installation of other work may be properly executed to fulfill the design requirements. Check shop drawings of other sections to ensure proper installation.

**1.05 Protection of Work and Material Storage**

- A. Deliver materials to the project site with manufacturer's labels intact and legible and handle with care to prevent damage.
- B. Store materials inside under protective cover, stack flat, off floor. Stack wallboard so that long lengths are not over short lengths. Adhesives, joint compound, and caulking shall be stored in a dry area and protected from freezing.

**Part 2 - Products****2.01 Materials**

- A. Gypsum wallboard system and materials shall be as manufactured by National Gypsum Co., USG Corp., Georgia-Pacific or approved equal.
- B. Products specified by name and number are used to establish type and quality of materials.
- C. Materials shall include but not be limited to the following:
  - 1. Gypsum wallboard shall conform to ASTM C1396.
    - a. Wallboard - 5/8" thick, 48" wide, Type X in lengths as required.
  - 2. Fasteners - drywall screws, in lengths best suited for the purpose as recommended by wallboard manufacturer.
  - 3. Joint reinforcing - perforated joint tape.
  - 4. Joint compound - ready mix shall conform to ASTM C474 and C475 at abuse resistant panels - conform to "Dorabond 90" or equal.
  - 5. Corners beads - Standard.

**2.02 Metal Framing**

- A. Metal studs shall be 20 gauge, galvanized drywall studs. Widths shall be of gauges, sizes and depths as indicated on drawings.
- B. Metal stud tracks shall be 20 gauge, galvanized drywall track. Width shall match width of adjacent studs. The top of all partitions shall be installed with double top channels to allow for deflection of structure.
- C. Any accessories needed to complete the job.

**2.03 Fasteners**

- A. Metal to metal stud securement shall be secured with #12, 3/8" pan head drywall screws. Screws shall be zinc plated.
- B. Metal stud tracks shall be secured to concrete with .177" diameter powder activated fasteners. Length shall be sufficient to allow 1-1/2" embedment to substrate.

**Part 3 – Execution****3.01 Installation**

- A. Examine all installation conditions. Do not commence work until installation conditions are acceptable. Commencement of work will be considered unqualified acceptance of installation conditions.
- B. All work shall be installed in accordance with the manufacturer's printed instructions and shall be rigid, plumb and true to line, with finished surfaces clean and free of imperfections.
- C. Maintain a uniform room temperature between 55 degrees F. and 70 degrees F. in cold weather during application of wallboard, joint treatment, texture, and decoration, and until completely dry or occupied. Use temporary air circulators in enclosed areas lacking natural ventilation. Under slow drying conditions, allow additional drying time between coats of joints treatment. Protect installed materials from drafts during hot, dry weather.

**D. Installing Metal Studs:**

1. Multiple studs anchored together shall be used at jambs, head, and sill and as indicated on details. At heads, cut section of track approximately ten inches longer than head opening. Notch flanges and bend so that cut ends extend down above five inches. Screw attach to jamb stud. Erect jack studs from track above opening to header track.
2. Align top and bottom tracks to assure plumb partitions. Secure tracks with suitable fasteners at a maximum of 16" on center. Position studs in track on 16" centers. Secure studs by 3/8" drywall pan heads screws through both flanges of studs and tracks.
3. Where metal framing extends to roof deck, provide isolation detail as shown on Architectural Drawings. If not detailed, maintain top of studs 1-1/2 inches below bottom of steel roof deck and secure to ceiling track using a special crimping device, to allow for deflection in overhead structure.

**E. Installing Gypsum Board:**

1. Boards shall be of such length so as to eliminate end joints and installed with vertical joints only. Boards shall be brought into contact with each other but shall not be forced into place. Joints on opposite sides of a partition shall not occur on the same stud. Boards shall be applied using screws as specified. Provide expansion joints as recommended and directed.
2. Gypsum board shall be held in firm contact with framing member while fastenings are being driven. Fastening shall proceed from center portion of the wallboard toward the edges and ends. Fasteners shall be set with heads slightly below the surface of the wallboard in the dimple formed by the power screwdriver. Care shall be taken to avoid the breaking of the face paper of the wallboard. Improperly driven nails or screws shall be removed.
3. Provide corner beads on external corners; joint treatment at re-entrant angles and wallboard trim where wallboard abuts other materials.
4. Screws or nails are to be spaced not to exceed 12" o.c.
5. Corner beads shall be nailed with gypsum wallboard nails spaced no greater than 9" apart on each flange of the bead with the nails opposite. In lieu of nailing, corner bead may be crimp applied 6" o.c. with a special tool. Provide similar nailing for wallboard trim.

**F. Joint and Corner Finishing**

1. Joint compound shall be mixed in accordance with printed instructions contained on the package.
2. A uniformly thin layer of Joint Compound shall be applied over the joint approximately 4" wide. The tape shall be centered over the joint and embedded into the compound leaving sufficient Joint Compound under the tape to provide proper bond. Inside corner angles shall be reinforced with the tape folded to conform to the angle and embedded into the compound.

3. After compound is thoroughly dry (approximately 24 hours for regular compound), the tape shall be covered with a coat of Joint Compound, spread over the tape approximately 3" on each side of the tape and feathered out at the edge. After thoroughly drying, another coat of Joint Compound shall be applied with a slight, uniform crown over the joint. This coat shall be smooth and the edges feathered approximately 3" beyond the preceding coat.
4. All inside corners shall be coated with at least one coat of Joint Compound with the edges feathered out.
5. All nail or screw head dimples shall receive three coats of Joint Compound. This may be applied as each coat is applied to the joints.
6. Flanges of wallboard corner bead shall be concealed by at least two coats of Joint Compound, feathered out approximately 9" on both sides of the exposed metal nose.
7. Allow each application of compounds to joints and fastener heads to dry then sand if necessary. Caution shall be used to avoid roughing of the wallboard paper. Scuffed board shall be replaced. All wallboard and treated areas shall be smooth and ready for decoration.

**End of Section**

**SECTION 095100**  
**ACOUSTICAL CEILINGS**

**Part I General****1.01 General Requirements**

- A. Attention is directed to the PARTS A, B, and C, and all sections within Part D – Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes the following:
  - 1. Suspension systems, trim angles, bracing, and hangers
  - 2. Acoustic ceiling tile
- B. Related Work - Items of work in the following sections are related to work performed under this section:
  - 1. Section 210000 - Fire Protection
  - 2. Section 220000 - Plumbing
  - 3. Section 230000 - Heating, Ventilation, and Air Conditioning
  - 4. Section 260000 - Electrical

**1.03 Submittals**

- A. Submit shop drawings of ceiling tile layout.
- B. Submit coordination drawing indicating lighting, louvers, difusers, sprinklers, and detectors.
- C. Manufacturer's specifications and installation instructions
- D. Extra stock: Deliver to owner two unopened cartons of extra tile stock on completion of work.

**1.04 Job Conditions**

- A. Provide all necessary scaffolding, staging planks, etc., required for the execution of this work.
- B. Coordinate installation of acoustic tile work so that the installation of other work may be properly executed to fulfill the design requirements. Check shop drawings of other sections to ensure proper installation.

**1.05 Delivery, Storage and Handling**

- A. Deliver and store all materials in manufacturer's original unopened containers with all labels intact and legible.
- B. Store materials in a dry area in a manner to prevent damage or contamination, and with containers opened as required to stabilize moisture content and temperature.

- C. Handle materials so as to prevent breakage, scratching, distorting and defacing of finished surfaces.
- D. Do not begin installation until sufficient materials to complete a room are received.

## Part 2 Products

### 2.01 Acoustic Tile and Suspension System

- A. Suspension systems shall be a 15/16 inch metal grid system as manufactured by the manufacturer of the tile.
  - 1. Accessories shall be specifically designed as an integral part of the system and shall be installed as per manufacturer's recommendation.
  - 2. All steel roll formed and stamped parts shall be chemically cleaned, electrogalvanized and bonderized to resist corrosion and form a chemical affinity for paint. All surfaces shall then receive a high-baked enamel finish.
  - 3. Provide whatever accessory items are needed to assure satisfactory ceiling performance and achieve specified requirements.
- B. Hangers shall be 12 gauge galvanized steel wire or galvanized steel straps. Hangers and attachment shall support a 300 pound vertical load without failure of supporting material or attachment.
- C: Ceiling Tile
  - 1. Cortega #704 as manufactured by Armstrong World Industries, 24" x 24" x 5/8" angled tegular. See the Reflected Ceiling Plans for ceiling layouts and additional information.

## Part 3 Execution

### 3.01 Inspection

- A. Areas to receive acoustic tile shall be examined and work shall not be started until defects have been corrected.

### 3.02 Installation

- A. Installation of ceiling materials shall not be made when the building is excessively cold, and damp, or hot and dry. Temperature and humidity conditions closely approximating the interior conditions, which will exist when the building is occupied shall be maintained before, during and after installation.
- B. Installation shall be in accordance with "Specification for Acoustical Tile and Lay-In Panel Ceiling Suspension Systems" published by the Acoustical Material Association.
- C. All ceiling areas shall be laid out as indicated on the drawings and so as to permit the largest size border units possible.

### 3.03 Cleaning and Replacement

- A. Following installation, clean soiled or discolored surfaces. Remove and replace tiles which are damaged, improperly installed, cracked, chipped or broken. Do not use extra tile stock delivered to the Owner.

**End of Section**

**SECTION 096500**  
**RESILIENT FLOORING**

**Part I General****1.01 General Requirements**

- A. Attention is directed to the PARTS A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section as indicated on the drawings. Generally, this includes:
  - 1. Trowel Applied Base System
  - 2. Vinyl flooring, vinyl base, and accessories, 3 tile color pattern in classrooms and labs. Each room to have a different pattern.
  - 3. Cleaning and waxing vinyl flooring.

**1.03 Submittals**

- A. Manufacturer's specifications and installation instructions
- B. Color selector
- C. Manufacturer's maintenance instructions
- D. Extra Stock - Deliver to the Owner 1-carton for each floor tile color.

**1.04 Protection of Work and Materials Storage**

- A. Deliver and store all materials in manufacturer's unopened containers with labels intact and legible.
- B. Do not open containers or remove markings until materials are inspected and accepted.
- C. Store and protect accepted materials in accordance with the manufacturer's recommendations.
- D. Unless otherwise directed, store materials in original containers at not less than 70 degrees Fahrenheit for not less than 24 hours immediately before installation.

**Part 2 Products****2.01 Materials**

- A. Vinyl Composition Tile - 1/8" thick, 12 inch x 12 inch face size, complying with ASTM F1066-04, Composition 1, Class 2, through pattern construction. Mannington: Brushwork, Color Point, and Solid Point or approved equal.
- B. Base - vinyl cove base, 4" high with rounded top. Color to be selected by the Owner. Base shall be by the same manufacturer as the floor tile.

---

Quincy College

- C. Trowel Applied Base System - Silpro - Silflo 220 and Silflo Primer; Euclid Chemical - Flo-Top; Bonsal Chemical - Self-Level underlayment.
- D. Primers and Leveling Materials - As recommended by the flooring manufacturer for the particular surfaces and conditions of the project, and shall be utilized as necessary to insure proper installation of the resilient flooring.
- E. Adhesives - As recommended by flooring manufacturer.

### **Part 3 Execution**

#### **3.01 Inspection**

- A. Surfaces to receive resilient flooring shall meet the minimum requirements established by the manufacturer of the flooring.
- B. Surfaces to receive resilient flooring shall be examined and work shall not be started until defects have been corrected.
- C. No resilient flooring shall be installed over floors that have been treated with chemical compounds or which are not furnished dry or which have oil or wax films, without written permission.

#### **3.02 Installation Precautions**

- A. Spaces in which resilient flooring is being set shall be closed to traffic and to other work until flooring is firmly set.
- B. Adequate ventilation shall be maintained to take off moisture and volatile fumes.

#### **3.03 Resilient Flooring Installation at Locations with Existing Carpet**

- A. Remove all carpet and tile and dispose of properly.
- B. Scrape off all adhesive.
- C. Prime the area with Silpro-C-21 Acrylic Latex and let dry.
- D. Apply more Silpro-C-21 primer.
- E. Apply 1/16 inch of Silpro-Masco and let dry overnight.
- F. Apply a second coat 1/16 inch Silpro-Masco and let dry overnight.
- G. Buff Silpro-Masco using a floor buffer with a sand paper disc.
- H. Apply resilient flooring.

#### **3.04 Installation of Resilient Flooring over Concrete Subfloors**

- A. The temperature shall not be less than 70 degrees Fahrenheit nor more than 90 degrees Fahrenheit from at least 24 hours before installation of materials until at least 48 hours after installation.
- B. Maintain a minimum temperature of 55 degrees Fahrenheit after flooring is installed except as specified elsewhere.
- C. Sweep the floor clean and fill all minor cracks in the sub-floor.
- D. Adhesive Application
  - 1. The adhesive manufacturer's directions for applying adhesive shall be followed. The surface shall be covered evenly with adhesive.

2. The area covered by one application of adhesive shall not exceed the maximum working area recommended by the manufacturer. Resilient flooring shall be installed within the time limit recommended by the manufacturer. If adhesive films over or dries, it shall be removed and the area shall be recoated.
- E. Resilient flooring shall be placed so that fields or patterns center on area. No tile shall be less than one-third size.
- F. Resilient flooring shall be laid true, level and even with tight aligned joints. Resilient flooring shall be cut to and around all permanent cabinets and fixtures.
- G. All resilient flooring showing broken edges or corners or fracture lines shall be warmed, carefully removed, and new flooring of same color and thickness shall be substituted at no extra cost.

### **3.05 Installation of Base**

- A. Firmly cement base to wall. Form internal and external corners and end stops from preformed units. Scribe base accurately to trim and plinths. Install base on all wall attached cabinets and equipment cabinets. All joints shall be tight and the base shall have its top and bottom edges in firm contact with walls and floor.

### **3.06 Cleaning and Waxing**

- A. When resilient flooring and base have been sufficiently seated, clean floors in accordance with flooring manufacturer's recommendations.
- B. Apply 3 coats of acrylic wax

### **3.07 Protection**

- A. Areas that receive resilient flooring shall be covered with undyed, untreated building paper after installation. Flooring shall be protected from all damage until the area is accepted for use by the Owner.

**End of Section**

**SECTION 096800****CARPET****Part I - General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D – Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, materials, equipment, accessories, and services necessary for the proper and complete installation of all carpeting as indicated on the drawings and as specified herein.
- B. Clean and damp mop sub-floors prior to installation of carpet. Furnish and install all carpet and carpet accessories for floors as specified, and/or indicated. Furnish and install all vinyl edge molding where carpet abuts other floor finishes. Furnish and install four inch vinyl straight base on all partitions as indicated in the finish schedule. Furnish and install protective paper, as specified herein, after completion of installation.
- C. Clean and restore all areas affected by the work to the satisfaction of the Owner.

**1.03 Submittals**

- A. Samples - Submit material samples to meet performance criteria. All materials must be approved by the Architect and shall not be delivered to the site until samples have been approved. Each sample shall bear the manufacturer's label stating the manufacturer's name and a description of the material.
- B. Layout and Seaming Plans - Prior to the installation of carpeting, the Contractor shall submit to the Architect for approval, complete layout plans including locations of seams and detailed method of seaming. Layout and seam locations shall conform to the following:
  - 1. All carpet shall be laid in the same direction unless specifically shown otherwise.
  - 2. No seams shall occur at doorways and entries perpendicular to doors or entries.
  - 3. Seams occurring at doors and parallel to doors shall be centered directly under the door.
  - 4. Each room layout shall have the minimum number of seams possible.
- C. Adhesives for Cementing and Seaming - Evidence that proposed system of adhesives and methods of seaming are as recommended by the carpet manufacturer.
- D. Maintenance Data - Prior to final acceptance of the carpet installation, the Contractor shall deliver to the Owner printed copies of the carpet manufacturer's detailed maintenance recommendations for the care, cleaning, and repair of the types of carpets installed under this contract.

#### 1.04 Job Conditions

- A. The contractor shall carefully check all dimensions and other conditions affecting the installation of his work in the field prior to the installation of carpet in the designated areas and shall be responsible for the proper installation of the carpet.
- B. The contractor shall be experienced in the supervision of carpet installation with at least 5 years experience in this type of work. The actual work shall be done by qualified and experienced mechanics working under an experienced supervisor who has been doing this type of work for a minimum of 5 years, or under the supervision of an experience workroom supervisor who has also been doing this type of work for 5 years.
- C. The contractor shall be held responsible for the scheduling, receiving, and placement on floors of goods from the manufacturer. Goods shall be delivered to the job site in the manufacturer's bundles and shall be clearly marked as to size, dye lot, and materials. Carpeting shall be carefully protected from soiling or damage during transit, storage in the warehouse, on the project premises and during installation. Unloading and storing in building shall be by the contractor. After installation, in areas requiring further work by other trades, the contractor shall protect all carpeting by a layer of non-staining adhesive tape.

#### Part 2 - Products

##### 2.01 Carpet

- A. Carpeting shall meet the following Specifications:  
Manufacturer/Style Name: Shaw-Stratton/Quartet  
Dye Method: Solution Dyed  
Construction: Textured loop  
Fiber - 100 % Dupont antron Lumena BCF SD Nylon-6,6  
Gauge - 1/10  
Production Weight: 26 oz.  
Backing - Ultra-Loc Thermoformable Performance Backing  
Warranty - Ten Year Commercial
- B. All carpeting shall conform to the flammability requirements of the Commonwealth of Massachusetts State Building Code with a Critical Radiant Flux result of 0.22 Watts per square centimeter when testing in accordance with the Flooring Radiant Panel Test NFIPA - 253. The manufacturer shall submit an affidavit to the Architect indicating compliance with all provisions of the Massachusetts State Building Code and all requirements with the use of adhesives.
- C. Accessories
  - 1. Adhesive as recommended by carpet manufacturer.
  - 2. Seam Adhesive as recommended by carpet manufacturer.
  - 3. Vinyl carpet edge molding as manufactured by Johnsonite.
  - 4. Base molding shall be straight vinyl.

### **Part 3 - Execution**

#### **3.01 Preparation**

- A. Sub-floors shall be inspected before beginning work. The Contractor shall notify the Architect in writing of any conditions preventing satisfactory installation of carpet. Work shall not proceed until such defects or conditions are entirely corrected. Proceeding with the installation of carpet shall indicate acceptance of the sub-floor by this contractor. Sub-floors shall be broom cleaned and damp mopped prior to carpet installation.

#### **3.02 Installation**

- A. Installation shall be in accordance with the carpet manufacturer's printed instructions.
- B. Carpet shall be cemented directly to the floor with recommended adhesive. A "V" notched trowel with notches 1/8" wide, 1/8" deep and spaced 1/16" apart shall be used to spread the adhesive evenly on the floor. The carpet must be installed within 30 minutes after the adhesive is spread.
- C. A contact adhesive shall be used a minimum of 6" on both sides of all cross seams. All carpet areas shall be rolled with a 30 lb. carpet roller to insure proper contact of carpet to the floor and to remove any and all bubbles and buckles. Special care shall be taken to provide a flush surface between carpet and other flooring materials. All raw edges shall be secured with vinyl carpet edge molding.
- D. All traffic shall be restricted for 24 hours after carpet manufacturer's printed instructions.

#### **3.03 Seaming**

- A. Seaming shall be done in accordance with the carpet manufacturer's printed instructions.
- B. All selvage edges must be removed. All cuts must be made on a 15 degree angle with surface yarns extending outward over backing material.
- C. A bead of Carpet Seam Adhesive Latex shall be applied to all cut edges before seams are made.
- D. Any special seaming instruction of the manufacturer shall be followed.

#### **3.04 Excess and Surplus**

- A. All useable pieces of carpet not necessary to complete the work shall be left on the job site and placed in an orderly manner together with 50 yards of extra carpet stock for future use by the owner.

#### **3.05 Clean-up**

- A. Upon completion of the installation, this contractor shall remove all waste materials created by his work and shall remove from the project all tools and equipment belonging to him.
- B. Clean carpet of all spots with proper spot remover. Remove all loose threads with sharp scissors. Clean all carpeting with vacuum cleaner.
- C. Carpet remnants, useable scrap, and overage shall be packaged, identified, and stored on the project, where directed by the contractor. Such items shall become the property of the owner.

**3.06 Repair and Guarantee**

- A. Included in this contract is the provision that the Carpet Contractor shall:
1. Remedy installation problems of the carpet, repair sprouting at seams and other cut areas, repair seams, joints, and edges, if required, after the original installation is completed. The exact time for this work shall be left to the discretion of the Architect. Fourteen day notice for this work shall be given by the Architect, so that the contractor can make necessary arrangements for same.
  2. Further, this contractor shall provide a 2 year unconditional guarantee against workmanship requiring further re-cementing, repair of seams, puckering, and any other defects that might be directly pointed to defect in workmanship or materials. This is in addition to the manufacturer's guarantee.
- B. This contractor shall, at his expense, and upon written notice from the Architect, promptly and properly replace any and all improper work and material that may become apparent within 24 months after final approval of the work of this Section by the Architect. Warning is hereby given that strict adherence to this specification will be required by the Architect and that this contractor shall receive no compensation for loss in replacement of goods or workmanship disapproved.

**End of Section**

**SECTION 099123****INTERIOR PAINTING****Part I General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 - General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, products, equipment and supervision necessary to complete the work of this section and as shown on the drawings. Generally, this includes:
  - 1. Surface preparation
  - 2. Paints and coatings of interior gypsum board
  - 3. Paints and coatings of interior doors and frames
- B. Related Work - Items of work in the following sections are related to work performed under this section:
  - 1. Section 092116 – Gypsum Board Assemblies – installation of gypsum board assemblies.

**1.03 Submittals**

- A. Manufacturer's color selector.
- B. Manufacturer's specifications, installation instructions, and MSDS sheets.

**1.04 Job Conditions**

- A. Coordinate installation of painting so that the installation of other work may be properly executed to fulfill the design requirements.

**1.05 Delivery, Storage and Handling**

- A. Deliver materials in manufacturer's original unopened containers with all labels legible and intact.
- B. Store materials in a single clean dry area. Keep storage area neat and clean and handle materials so as to prevent contamination from foreign matter and take every precaution to avoid the danger of fire.

**1.06 Warranty**

- A. Work shall be left complete and perfect and hereby warranted that it will not discolor, fade, craze or peel off within a period of one year after acceptance. Repair all work developing imperfections in that time at no expense to the Owner. This includes repainting of repair work during warranty period of Section 092116 – Gypsum Board Assemblies.
- B. Imperfections from Owner's occupancy of building are excluded from warranty.

**Part 2 Products****2.01 Materials**

- A. All paint materials shall be products of a recognized reliable manufacturer and shall be of the best quality and grade (1st line) for each type. To establish a standard of quality, painting materials shall be supplied from the following manufacturers. Only top quality materials are to be used on the project. Where a question of quality occurs, the Contractor will submit an affidavit from the materials manufacturer stating the quality range of the product to be used, as compared to other top quality products made by that manufacturer.
1. Benjamin Moore & Co.
  2. California Products, Inc.
  3. Sherwin Williams

**Part 3 Execution****3.01 Inspection**

- A. Surfaces to receive paint shall meet at least the minimum requirements established by the manufacturer of the paint.
- B. Surfaces to receive paint shall be examined and work shall not be started until defects have been corrected.

**3.02 Precautions**

- A. Spaces in which painting is being done shall be properly identified with "Wet Paint" signs or closed to traffic until paint is dry.
- B. Provide adequate ventilation.

**3.03 Protection**

- A. Exercise care when painting to prevent damage to work already in place and be responsible for any damage caused by the painting operation. Employ the use of dropcloths, masking, and other protection as required. Items not to be painted which are in contact with or adjacent to painted surfaces shall be removed or protected prior to surface preparation and painting operations.
- B. Any work damaged by the work under this Section shall be repaired at no expense to the Owner.

**3.04 Surface Preparation**

- A. Gypsum Board - Gypsum board surfaces shall be dry and shall have all loose dirt and dust removed by brushing with a soft brush or rubbing with a dry cloth prior to application of the primer coat material. Fill all minor irregularities with approved patching material and sand to a smooth level surface. Exercise care to avoid raising nap of paper.
- B. Metal - Remove grease, dirt, mud, rust and scale as necessary to receive paint to produce a satisfactory surface for painting. Fill dents and depressions with auto body putty and sand smooth.

**3.05 Workmanship**

- A. Employ skilled mechanics to ensure the very best workmanship. Quality workmanship is required. Materials to be applied by craftsmen experienced in the use of the particular product involved.
- B. All surfaces shall be properly smoothed. All surfaces shall be properly prepared, clean and dry when a coating is applied. Any bare or abraded spots in base coats shall be touched up before next coat is applied.
- C. Do not use any plumbing fixture or pipe whatever for mixing, or for the disposal of any refuse material. Carry water required to mixing room and dump all water materials outside the building in a refuse receptacle. Be accountable for any and all damage resulting from failure to observe the provisions of this Specification. Protection against fire shall be taken and all oily rags or waste must be removed from the building each day.

**3.06 Applications**

- A. Finishing materials shall be free from skins, lumps or any foreign matter when used, and shall be kept well stirred while being applied.
- B. Each coat of finish shall be evenly brushed out and allowed to dry before any subsequent coat is applied. Each coat shall be a different tint from that of the preceding coat. Final coats shall be the exact shade and textures selected. The finished work shall be free from runs, sags, defective brushing and clogging of lines or angles. Drying time between coats of paint shall be in accordance with the manufacturer's labeled instructions.
- C. Spray painting will not be allowed unless prior written approval is obtained from the Architect or unless application by spray painting is specifically called for a particular surface.
- D. All materials shall be applied in accordance with manufacturer's recommendations.

**3.07 Painting Schedule**

- A. Interior Metal - One coat of California Paints - Prime Line 1703 Universal Metal Primer and two coats of Sherwin Williams – Proclassics Interior Alkyd Enamel or approved equal
- B. Interior Gypsum Wallboard -One coat Sherwin Williams Promar 200 Interior Latex Wall Primer and two coats Sherwin Williams Promar 200 Interior Latex Eggshell Enamel.

**End of Section**

**SECTION 101000**  
**VISUAL DISPLAY BOARDS**

**Part 1 - General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - The work of this section includes, but is not limited to, furnishing the following:
1. Porcelain enamel marker boards.
  2. Accessories
- B. Related Work - Carefully examine all of the Contract Documents for requirements which affect the work of this section. Other specifications sections which directly relate to the work of this section include, but are not limited to, the following:
1. Section 061000 - Rough Carpentry – wood blocking for mounting of marker boards.
  2. Section 062000 - Finish Carpentry – mounting of visual display boards as indicated on the drawings.

**1.03 Submittals**

- A. Product Data - Submit manufacturer's product data, installation instructions, use limitations and recommendations for each material used. Provide certifications stating that materials comply with requirements.
- B. Shop Drawings - Provide large scale shop drawings for fabrication, installation and erection of all parts of the work. Provide plans, elevations, and details of anchorages, connections and accessory items. Provide large-scale sections and details of trim profiles and materials.
- C. Field Measurements: - For work which is indicated to fit tightly to other work, take accurate field measurements before preparation of shop drawings and fabrication. Do not delay job progress.

**1.04 Delivery, Storage and Handling**

- A. Deliver products in unopened factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendation. Protect from all possible damage. Sequence deliveries to avoid delays, but minimize on-site storage.
1. Temperature - Maintain ambient temperature of not less than 55°F for 24 hours before, during, and 24 hours after installation.

## 1.05 Warranty

- A. Manufacturer's Marker Board Warranty - Provide written warranty agreeing to repair or replace work, which exhibits defects in materials or workmanship. "Defects" is defined to include, but is not limited to, crazing, cracking, flaking, and loss of original writing and erasing qualities. Provide manufacturer's 50 year warranty on marker board face.

## Part 2 - Products

### 2.01 Visual Display Boards

- A. Markerboards and tackboards as manufactured by Claridge Products and Equipment, Inc., Harrison, Arkansas, 870-743-2200. See the drawings for locations and quantities.
- B. Porcelain-On-Steel Writing Boards, Claridge Type A arrangement.
1. Construction - Provide balanced, laminated, 3-ply boards consisting of the following.
    - a. Face Sheet - 24 gage steel with two coat porcelain enamel finish consisting of a ground coat oven fused to the steel and a cover coat oven fused to the ground coat. Provide porcelain face sheets complying with requirements of the Porcelain Enamel Institute.
    - b. Core - Minimum 3/8 inch thick particleboard
    - c. Backing Sheeting - 0.015-inch thick aluminum sheet.
  2. Face Sheet Colors - The color is to be white.
  3. Face Sheet Texture - Provide texture specifically manufactured for liquid markers.
  4. Board Corners - Square.
- C. Aluminum Frame Edges - For all visual display boards, Claridge Series 4.
1. Aluminum Finish - Clear anodized aluminum with uniform satin etched appearance.
  2. Aluminum/Marker Rail - Provide extruded aluminum with concealed attachment. Provide closed ends. Custom grind and polish to eliminate sharp edges and corners.
  3. Aluminum angle mounting clips.
- D. Map Rail and Accessories - Provide extruded aluminum map rails and accessories.
1. Locations
    - a. Continuous at head frame of each markerboard.
    - b. Separate rails and strips not in contact with visual display board assemblies.
  2. Height - 1-inch.
  3. End Stops - Provide end stops for each end at each board assembly.
- E. Fabrication
1. Fabricate work to be truly straight, plumb, level and square.
  2. Provide work with sizes, shapes, and profiles indicated or, if not indicated, as shown on approved shop drawings.
  3. Provide one-piece units.
  4. Provide factory assembled units with uniform, tight joints.

**Part 3 - Execution****3.01 Installation**

- A. Pre-Installation Examination Required - The installer shall examine previous work, related work, and conditions under which this work is to be performed and notify Contractor in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Installer accepts substrates, previous work, and conditions.
- B. Manufacturer's Instructions - Strictly comply with manufacturer's instructions and recommendations, except where more restrictive requirements are specified in this section.
  - 1. Install work with concealed anchors.
    - a. For existing wall construction without proper concealed wood blocking, use toggle bolts for hollow walls and expansion anchors for solid walls, or use other suitable fasteners approved by Architect.
  - 2. Locate work at heights indicated or field directed with all work truly plumb and level. Provide all trims, anchors, grounds, and components necessary for a complete installation.
  - 3. Accurately miter all frame corners. Make seams in frames and trims hairline tight. Smooth all cut and sawn edges. Cap and close all extrusion voids.
  - 4. Break-in marker boards as recommended by the manufacturer.

**3.02 Adjustment, Cleaning, Repair, Protection**

- A. Adjustment - Adjust operating parts to work easily, smoothly, and correctly.
- B. Cleaning - Clean visible surfaces using non-abrasive materials and methods recommended by manufacturer of material or product to be cleaned. Remove and replace work that cannot be successfully cleaned.
- C. Repair - Touch-up damaged finishes and repair minor damage to eliminate all evidence of repair. Remove and replace work that cannot be successfully repaired.
- D. Protection - Provide temporary protection to ensure work is without damage or deterioration at time of final acceptance. Remove protection and re-clean immediately before final acceptance.
- E. Demonstration - Provide and review maintenance manuals, demonstrate equipment, and instruct Owner's personnel in routine maintenance and proper operation procedures.

**End of Section**

**SECTION 10400**  
**IDENTIFICATION DEVICES**

**Part -1 - General**

**1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - The work of this section includes, but is not limited to, furnishing the following:
1. Interior signage shall consist of room number and room function to meet the requirements of the Americans with Disabilities Act and Massachusetts Architectural Access Board regulations. Provide room identification signage at all new rooms in the project area.
- B. Related Work - Carefully examine all of the Contract Documents for requirements which affect the work of this section. Other specifications sections which directly relate to the work of this section include, but are not limited to, the following:
1. Section 062000 - Finish Carpentry – mounting of identification devices as directed by Architect in the field.

**1.03 Submittals**

- A. Submit complete catalog cuts of each accessory item in accordance with the provisions of Section 01300.
1. Submit manufacturer's product literature, maintenance data, and installation instructions for each type of sign. Include methods of installation for each type of substrate.
  2. Submit manufacturer's standard color charts, showing full range of colors and materials for each type of signage.
  3. Submit full size samples of each sign type showing finishes, colors, form and material surface texture including graphics.
  4. Submit shop drawings for fabrication and erection of signs. Include plans, elevations, message list and large scale details of sign wording and lettering layout.

**1.04 Job Conditions**

- A. The building will be occupied and use during construction. The Contractor shall provide all protection, guards and barriers necessary to segregate the work area from pedestrian and vehicular traffic. Protect existing building, building finishes, landscaping and paved areas from damage.
- B. The Contractor shall utilize skilled and experienced specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.

**1.05 Protection of Work and Material Storage**

- A. Materials shall be stored in an enclosed area on site.
- B. Materials shall be in original factory wrappings and clearly labeled with identification of manufacturer, signage type, message and installation location.

**1.06 Clean-up**

- A. At the completion of the project, clean soiled sign surfaces in accordance with manufacturer's printed instructions. Protect signs from damage until acceptance by Owner.

**Part 2 - Products****2.01 Manufacturer**

- A. HC300 ADA System room signs as manufactured by BEST Sign Systems Inc., 1202 N. Park Ave., Montrose, Colorado 81401; Telephone 1-800-235-2378; Fax 1-970-249-0223.

**2.02 Fabrication**

- A. Raised Plastic Signs shall be Best's HC300 Series ADA System with a four-in-one construction style having the following characteristics:
  - 1. Tactile characters/symbols shall be raised 1/32" from sign plate face. Signs shall be of one-piece construction; added-on and/or engraved characters are unacceptable.
  - 2. Text shall be accompanied by Grade 2 Braille.
  - 3. All letters, numbers and/or symbols shall contrast with their background - either light characters on a dark background or dark characters on a light background. Characters and background shall have matte finish.
- B. Plaque material shall consist of melamine plastic laminate, approximately 1/8" thick (1/4" thick for Slot signs), with core painted a contrasting color and rated non-static, fire-retardant and self-extinguishing. Plastic laminate will be impervious to most acids, alkalis, alcohol, solvents, abrasives and boiling water.
- C. Lettering style shall be Standard Medium, upper case, or other sans serif or simple serif typeface.
- D. Sizes of letters and numbers shall be as follows:
  - 1. Room numbers shall be 5/8" high.
  - 2. Lettering for room usage and directional identification shall be 5/8" high.
  - 3. Lettering for restroom identification shall be 5/8" high, corresponding symbols shall be 3" high.
- E. Letters and numbers shall be centered on sign.
- F. Grade 2 Braille shall be placed directly below last line of letters or numbers, except for room number signs, where they shall be placed directly behind the last number.
- G. Radius corners: 1/2".
- H. Sign sizes:
  - 1. Sign Type HC300C - Classroom identification signs shall be 8"X 6"
  - 2. Sign Type HC300E - Office/storage room signs shall be 10" x 3".

**Part 3 - Execution****3.01 Examination**

- A. Examine the site and surfaces to which signage shall be installed. Do not proceed until unsatisfactory conditions have been corrected.

**3.02 Installation**

- A. Locate interior signs on the wall adjacent to the latch side of the door. Mounting height shall be in accordance with the Architectural Access Board.
- B. Attach plaque signs to surfaces with silicone adhesive recommended by sign manufacturer. Use double sided vinyl tape to hold sign in place until adhesive has fully cured.
- C. Install signs level, plumb, and at heights indicated.

**3.03 Schedule**

- A. Provide the following interior signs:

<b>Room No.</b>	<b>Sign Text</b>	<b>Quantity</b>	<b>Symbol</b>	<b>Sign Type</b>
<b>FIRST FLOOR</b>				
109	TISSUE CULTURE LAB	1	NONE	HC300C
110	BIOTECH LAB	1	NONE	HC300C
112	OFFICE	1	NONE	HC300E
113	STORAGE	1	NONE	HC300E
114	LECTURE ROOM	1	NONE	HC300C
115	WORK STATION	1	NONE	HC300E

**End of Section**

**SECTION 104400****FIRE PROTECTION SPECIALITIES****Part 1 General****1.01 General Requirements**

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - The work of this section includes, but is not limited to, furnishing the following
  1. Three hand-carried fire extinguishers.
  2. Surface mounted fire extinguisher support brackets.
- B. Related Work - Carefully examine all of the Contract Documents for requirements which affect the work of this section. Other specifications sections which directly relate to the work of this section include, but are not limited to, the following:
  1. Section 061000 - Rough Carpentry – wood blocking for mounting of fire extinguishers.
  2. Section 062000 - Finish Carpentry – mounting of fire extinguishers as directed by Architect in the field.

**1.03 Submittals**

- A. Product Data - Submit cabinet manufacturer's product data, installation instructions and recommendations.

**1.04 Delivery, Storage and Handling**

- A. Deliver products in unopened factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendation. Protect from all possible damage. Sequence deliveries to avoid delays, but minimize on-site storage.

**Part 2 Products****2.01 Fire Extinguisher Products**

- A. Fire Extinguishers - Provide fire extinguishers, filled and tagged, 10-pound capacity multi-purpose dry chemical, UL rated 4-A, 60-BC, red enameled steel cylinders. J.L. Industries, Cosmic 10E. Provide fire extinguishers in Rooms 109, 110 and 114.
- B. Signs - Where required by authorities having jurisdiction, provide wall mounted signage that spells out "Fire Extinguisher".
- C. Fire Extinguisher Brackets - Wherever extinguishers are shown or required without a cabinet, provide fire extinguisher manufacturer's standard wall bracket that permits easy removal, but not accidental dislodgment.

## Part 3 Execution

### 3.01 Installation

- A. Pre-Installation examination required - The installer will examine previous work, related work, and conditions under which this work is to be performed and notify Contractor in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Installer accepts substrates, previous work, and conditions.
- B. Manufacturer's Instructions - Strictly comply with manufacturer's instructions and recommendations, except where more restrictive requirements are specified in this section.
- C. Height and Location - Securely anchor brackets truly plumb and level at heights indicated or, if not indicated, at heights acceptable to authorities have jurisdiction and the Architect. If exact locations are not indicated, locate where field directed by the authorities have jurisdiction.
- D. Extinguishers - Place extinguishers in brackets ready for immediate use.
- E. Signs - Apply signs accurately aligned with adjacent work at locations approved by Architect.

### 2.02 Adjustment, Cleaning, Repair, Protection

- A. Adjust operating parts to work easily, smoothly, and correctly.
- B. Clean visible surfaces using non-abrasive materials and methods recommended by manufacturer of material or product to be cleaned. Remove and replace work that cannot be successfully cleaned.
- C. Repair and touch-up damaged finishes and repair minor damage to eliminate all evidence of repair. Remove and replace work that cannot be successfully repaired.
- D. Provide temporary protection to ensure work is without damage or deterioration at time of final acceptance. Remove protection and clean immediately before final acceptance.

**End of Section**

**SECTION 123200****MANUFACTURED WOOD CASEWORK****Part I General****1.01 General Requirements**

- A. Attention is directed to the PARTS A, B, and C, and all sections within Part D – Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

**1.02 Description of Work**

- A. Work Included - Provide labor, products, equipment, and supervision necessary to complete the work of this section and as indicated on the drawings. Generally, this includes the following:
1. Provide all built-in cabinets and casework including tops, ledges and supporting structures as shown on the drawings and movable items of equipment as listed in the equipment schedule including delivery to the building, unpacking, setting in place, leveling and anchoring to walls and floors as required. Furnish and install all wall cleats, filler panels, knee space panels where specified and scribes required for a finished installation.
  2. Furnish for installation by Plumbing contractor, all laboratory eye wash's and emergency showers, sinks, or drains, drain troughs, overflows and sink outlets, where specified, which occur above the floor and where these are part of the equipment as listed in equipment schedules or shown on the drawings. Integral tailpieces shall be in accordance with the manufacturer's standards.
- B. Related Work - Items of work in the following sections are related to work performed under this section:
1. Section 061000 – Rough Carpentry
  2. Section 092116 – Gypsum Board Assemblies
  3. Section 220000 – Plumbing
  4. Section 230000 - Heating, Ventilation, and Air Conditioning
  5. Section 260000 - Electrical

Equipment, materials and labor to be furnished by "others" shall include the following:

- A. Furnishing, installing and connecting of service supply lines and conduits within equipment and reagent racks, connecting of exposed service lines, connecting of services in tunnels or service turrets through, under, or along backs of working surfaces as required for utility service fixtures.
- B. Furnishing, installing and connecting all utility service outlet accessory fittings and fixtures furnished by casework contractor, pulling of wire and connecting of electrical fixtures in service lines, provision of ground fault protection for circuits requiring such.
- C. Receiving, installing and connecting all separate sinks, or drains, overflows and sink outlets, as furnished by the casework contractor.
- D. Furnishing, installing and connecting all traps, tailpieces, backflow prevention devices and special plumbing fittings and piping of unusual nature to meet local codes even though not specifically called for in specifications or shown on drawings.

Quincy College

- E. Furnishing and installing of all framing, bucks, metal grounds or reinforcements in walls, floors, ceilings to adequately support and anchor casework and related equipment.
- F. Furnishing fluorescent tubes, light bulbs and any miscellaneous materials generally classified as maintenance or supply items.
- G. Building conditions and security shall be ready and maintained per SEFA Recommended Practice 2.3-2010.

### **1.03 Submittals**

- A. Submit shop drawings of manufactured wood casework. Shop drawings shall show layout and dimensions, product reference numbers, and construction details differing from manufacturer's standards and relationship of this work to other work.
- B. Manufacturer's specifications and installation instructions
- C. Provide samples of all countertop materials required on the project.

### **1.04 Job Conditions**

- A. Provide all necessary scaffolding, staging planks, etc., required for the execution of this work.
- B. Coordinate installation of manufactured wood casework so that the installation of other work may be properly executed to fulfill the design requirements. Check shop drawings of other sections to ensure proper installation.
- C. Field measurements shall be taken to verify that the equipment will fit into the designated space. Entryways, corridors and door openings shall be verified to ensure that the equipment is manufactured in a manner to permit it to be moved through and set properly into place.

### **1.05 Delivery, Storage and Handling**

- A. Deliver and store all materials in manufacturer's original unopened containers with all labels intact and legible.
- B. Store materials in a dry area in a manner to prevent damage or contamination, and with containers opened as required to stabilize moisture content and temperature.
- C. Handle materials so as to prevent breakage, scratching, distorting and defacing of finished surfaces.
- D. Do not begin installation until sufficient materials to complete a room are received.

### **1.08 Warranty**

Casework contractor shall guarantee to replace or repair, at no expense to the owner, all materials of this contract found to be defective within one year of acceptance, due to defective materials and/or workmanship.

## **Part 2 Products**

### **2.01 Casework General - Flush Overlay Construction**

Hardwoods and face veneers for exposed surfaces shall be Rift-Cut Red Oak, A-Grade. Grain pattern on cabinet fronts shall be vertical matched grain, with continuous vertical grain match on

door and drawer fronts of individual cabinets. Interiors of open cases and cases with glass or glazed doors are considered exposed surfaces. Casework shall be manufactured by Hamilton Scientific Inc., 920-793-1121, [www.hamiltscientific.com](http://www.hamiltscientific.com), local contact: Gibson Associates, Inc., 617-529-6843; LSI Corporation of America, Inc., 763-559-4664, [www.lsi-casework.com](http://www.lsi-casework.com); or Leonard Peterson Co., Inc., 334-821-6832, [www.lpc.com](http://www.lpc.com).

- A. Solid woods shall be hardwood lumber, free of defects. All lumber to be kiln dried to uniform moisture content of 6%-8%. Woods used in interior construction may be maple, birch or other suitable hardwoods, clear and sound. Semi-exposed material shall be of select hardwood. Concealed material shall be sound hardwood of species suitable for the intended purpose.
- B. Lumber core shall be balanced construction consisting of a solid hardwood stave core, hardwood cross plies and face veneers. Lumber core shall conform to ANSI/HPVA HP-1 2009 product standards.
- C. Plywoods shall be balanced veneer core construction glued with water resistant resin adhesives. Hardwood plywoods shall conform to ANSI/HPVA HP-1-2009 product standards. Plywood for interior and unexposed surfaces may be hardwood plywoods or softwood plywoods conforming to U.S. Department of Commerce and Voluntary Product Standard PS-1 2009.
- D. Particleboards shall be nominal 45 pound density industrial boards, mat-formed as flat panels, bonded together with synthetic resin under heat and pressure, conforming to ANSI/CPA A208.1 -2009.
- E. Tempered welded fiber shall be wood fibers and natural lignin binding agent compressed into dense homogeneous sheets. Sheets are impregnated with a special tempering compound polymerized by baking to give exceptional strength, and shall conform to ANSI A135.4-2004 Basic Hardboard for Class 1 tempered grade.
- G. Plastic laminate shall be high pressure decorative laminates conforming to ANSI/NEMA LD3-2005 standard for intended usage. Countertop applications shall use standard general purpose or post-forming types.

## 2.02 General Construction

- A. Base units shall be designed with solid ends and backs and fully enclosed toe space protecting all interiors against dust and vermin. End panels shall be 3/4" plywood with front exposed edges of panels faced with 3 mm hardwood edgebands. End panels shall be glued to horizontal frame units and to solid bottom panels. Joint construction shall be blind, not extended to face of cases. Joinery utilizing blind mortise and tenon, multiple-dowel or stopped tongue and groove shall be acceptable. Backs shall be 1/4" hardwood plywood where exposed, 1/4" tempered welded fiber behind solid doors, grooved into end panels. Where access to services is required, cupboard backs shall be removable. Cupboard bottoms shall be 3/4" plywood with exposed edge faced with 3 mm hardwood edge bands providing a flush interior for ease of cleaning. Shelves shall be full-depth, adjustable and made of 1" plywood with exposed edge faced with 3 mm hardwood edge bands. All toe spaces shall be 2-1/2" deep and 4-1/4" high, fully enclosed and an integral part of the case. Horizontal frame member sizes are as follows No exceptions to size of framing:

### Top Horizontal:

Front & Rear	3" x 1" hardwood
Side	3/4" x 1-1/2" hardwood

### Intermediate Horizontal:

Front	2-1/2" x 3/4" hardwood
-------	------------------------

Rear	2-1/2" x 3/4" hardwood
Side	1-1/4" x 3/4" hardwood
Center	3-1/4" x 3/4" hardwood

- B. Wall cases shall be integrally constructed to provide a fully enclosed unit designed to ensure a dust and vermin free interior. End panels shall be 3/4" plywood with exposed edges faced with 3 mm hardwood edgebands. Tops and bottoms shall be 1" plywood with exposed front edges faced with 3 mm hardwood edge bands. End panels shall be glued to top and bottom panels through blind mortise and tenon or doweled joints. Further reinforcement through screws, cleats, hot glue and stapled pins shall be provided as required. Backs shall be 1/4" hardwood plywood where exposed, 1/4" tempered welded fiber behind solid doors, grooved into end and bottom panels and further secured through the use of glue and unexposed top and bottom back rails. The interior of the case shall be completely flush for ease of cleaning. Shelves shall be full-depth, fully adjustable and made of 3/4" plywood with exposed edge faced with 3 mm hardwood edge bands. Top and bottom edges of case ends shall be banded with 3 mm hardwood edge bands - exposed panel cores are not acceptable. Top and bottom panels shall be flush with ends of case end panels - inset or recessed tops and bottoms are not acceptable.
- C. Tall cases shall be integrally constructed to provide a fully enclosed unit designed to ensure a dust and vermin free interior. End and bottom panels shall be 3/4" plywood with exposed edges faced with 3 mm hardwood edge bands. Top panel shall be 1" plywood with exposed front edge faced with 3 mm hardwood edge bands. End panels shall be glued to top and bottom through blind mortise and tenon or doweled joints. Further reinforcement through screws, cleats, hot glue and stapled pins shall be provided as required. Backs shall be 1/4" hardwood plywood where exposed, 1/4" tempered welded fiber behind solid doors, grooved into end panels and further secured with glue, staples and unexposed top and bottom back rails. The interior of the case shall be completely flush for ease of cleaning. Shelves shall be full depth and shall have the exposed edge faced with 3 mm hardwood edge bands. Shelves for spans up to 36" shall be made of 3/4" plywood, shelves for spans over 36" shall be made of 1" plywood. All exposed shelves shall be 1" thick. Fixed shelves shall be firmly mounted on supporting cleats or appropriate internal joinery. Adjustable shelves shall be fully adjustable, with shelves over 47" in length to have additional support at center of shelf. All toe spaces shall be 2-1/2" deep and 4-1/4" high, matching base units, fully enclosed and an integral part of the case.
- D. Panel doors shall be 3/4" thick solid core with 3mm hardwood edge banding. Door edges and corners shall be radiused not less than 2mm. Swinging doors to 42" high shall be hinged with two hinges per door. Doors over 42" high shall have three hinges per door. Sliding doors shall be hung on adjustable hangers and ride on nylon rollers on an extruded aluminum track attached to the upper front rail or panel of the case.
- E. Drawer fronts shall be 3/4" thick solid core with 3mm hardwood edge bands.
- Drawer front edges and corners shall be radiused 2mm. Drawer fronts shall be attached to drawer boxes with screws. Sides, backs and fronts of drawer boxes shall be 1/2" laminated hardwood. Drawer box front and back members shall be dovetailed and glued to side members. Bottoms shall be 1/4" tempered welded fiber with faux wood grain UV finish, grooved into box front, back and sides. Drawer bottoms shall be further secured with glueblocks and hot glue flowed into the bottom retention groove from the underside thus forming a rigid and unitized drawer box. Drawers shall be prepared for drawer partitions. Hot melt glue required.
- F. Table legs shall be 2-1/4" square with all corners radiused 3/16". Legs shall be secured to apron frame by a 3/8" heavy-duty hanger bolt through a 14 gauge metal corner brace. Brace shall be dadoed into apron rails and securely fastened with screws. Exterior apron

rails shall be 1" lumber core with bottom edge radiused. Compartment bottoms shall be 1/4" hardboard glued and pinned in place. Leg stretchers shall be provided where required, 1-1/4" X 2-1/2", secured to legs with a draw bolt at each end. Footrest spreaders shall be provided where required, 1-1/4" X 2-1/2", secured to stretchers with angle clips and screws. Fixed tables shall have a 2-1/2" high die formed boot that shall be fitted to each fixed leg at the floor concealing the leveling/anchoring device. Movable tables shall have legs fitted with 1-1/2" diameter adjustable non-marring floor glides.

## 2.03 Hardware

- A. Pulls for drawers and doors shall be a 4" Wire with Goldtone powder coat finish. Pulls to be mounted horizontally on drawers and vertically on doors.
- B. Hinges shall be 5-knuckle institutional style, hospital tipped steel with goldtone finish. Hinges are to be mounted to door and case with not less than three screws per wing. Provide two hinges for doors up to 48" high, and three hinges for doors over 48" high.
- C. Catches shall be provided on swinging doors and shall be a spring-loaded nylon roller type.
- D. Elbow catches shall be used on left hand doors where required for latching security when doors are to be locked. Elbow catches shall be solid brass. Light duty plated steel is not acceptable.
- E. Latching assembly for locked tall case double swinging doors shall consist of an eccentric plate operating two 3/8"-diameter plated vertically operating locking rods. Each rod shall operate through an extruded metal guide with rubber bushing and, when locked, shall engage a strike plate providing positive latching for the left-hand door. The lock attached to the right hand door shall operate to latch behind the left-hand door when locked providing secure locking. Single doors shall be locked to case sides. Three point "National" turn handle is not acceptable and is not ADA acceptable for tall cases.
- F. Locks shall be furnished for each drawer and cabinet door. Locks for all areas, shall be laboratory grade, 5-pin tumbler for extension of existing key system, coordinate requirements with the Owner.
- G. Where drawers are locked, security panels shall provide a non-removable security barrier. Security panels shall be a 3/4" thick solid panel with 3mm hardwood edge bands.
- H. Label holders shall be 1-3/8" x 2-5/8", goldtone aluminum, and brad-attached type. Label holders shall be furnished on all drawers and doors.
- I. Drawer slide system shall be 100 lb. rated open roller with epoxy coated metal slides, bottom mounted with 3/4" extension and self-closing action.
- J. Shelf supports shall be die-formed to insert into pre-drilled holes on interior of cabinets. Supports shall provide shelf adjustment on 32 mm centers. Shelves longer than 48" shall have additional support at center. Shelf supports shall be plated steel.
- K. Base molding shall be pliable, black 4" high coved to the floor at the bottom and shall be cemented tightly to exposed case areas at the floor with suitable adhesive.
- L. Stainless steel corners shall be furnished on all exposed base corners and shall be designed to conform to the contour of the base molding and be attached with four stainless steel nails. Finish shall be brushed.

- M. Leg shoes shall be die formed, black in color and furnished on all fixed open table legs, 2-1/2" high and coved to floor and shall conceal leg leveling/anchoring clips and screws.
- N. Floor glides, where specified for movable tables, shall be a non-marring material at least 1-1/2" diameter to prevent indenting composition flooring and shall allow at least a 5/8" adjustment.

## **2.05 Sinks and Drain Troughs**

- A. Epoxy resin sinks shall be made of modified epoxy resins and shall be completely cured during processing. Sinks shall be black non-glare finish with all corners coved and with bottom dished at least 1 degree toward outlet to assure complete drainage. Sinks shall have a high resistance to physical and thermal shock.

## **2.06 Accessories**

- A. Apparatus support rods shall be 3/4" in diameter as specified, 36" long, anodized aluminum, rounded on top end and tapered on bottom to fit in socket plate. Socket plate shall be accurately machined brass, chrome plated or aluminum black powder coat, with washer nut. Horizontal bars shall be 3/4" anodized aluminum rounded both ends. Bar clamps shall be anodized machined aluminum with thumbscrews.
- B. Sink outlets for resin sinks shall be chemical resistant resin with removable disk strainer, locknut and machining for overflow. Assembly shall be threaded standard 1-1/2" for connection to waste system. Overflow will not be furnished for sink outlet except as specifically called for in plumbing drawings.

## **2.07 Work Surfaces**

Work surfaces shall be supplied in the largest practicable sizes and field joined using waterproof and chemical resistant epoxy base cements (epoxy resin) or as otherwise specified. Epoxy resin tops shall have a drip groove set back 3/8" on the underside of exposed edges in areas with water services.

## **2.08 Casework Finish**

All exteriors and exposed surfaces to receive finish shall be free of machine marks, carefully and smoothly sanded in preparation for finishing. Exteriors, inside surfaces of doors, cupboard interiors and shelves shall then be stained, followed by resinous sealer, dried properly and carefully sanded. Two coats of chemical resistant catalyzed synthetic alkyd-urea resin varnish shall then be applied and thoroughly dried, resulting in a smooth semi gloss finish. Drawer boxes shall receive a natural UV finish. Bottoms, unexposed backs and ends shall be sealed with pigmented resinous sealer. Tops, frames, interior of drawer openings and toe eases shall be sealed with clear sealer.

## **2.09 Acid Storage**

- A. Cabinet bottom, top, back, door(s) and sides shall be constructed the same as other base units specified for this job. Door overlay design to be Flush Overlay with five knuckle hinges to match wood laboratory casework.
- B. Liner material to be Chemical resistant 3/16" thick molded polyethylene tub lining with coved corners and 2" lip at front of cabinet opening. Tub to have a removable back. Doors to be lined with 1/8" thick polyethylene.
- C. Ventilation to be provided at rear of cabinet.

- D. Provide with full width and full depth adjustable shelf.
- E. Finish as specified for wood laboratory casework.

### **2.10 Solvent (Flammable) Storage**

- A. Design and construct in accordance with OSHA regulations, FM, UL and NFPA 30 - 2012, Flammable and Combustible Liquids Code. Cabinets shall be Factory Mutual (FM) approved and Underwriters (UL) listed with UL/FM approval label affixed to inside of cabinet door.
- B. Door overlay design to be Flush Overlay with five knuckle hinges to match wood laboratory casework.
- C. Cabinet bottom, top, back, door(s) and sides shall be constructed of 1" veneer core plywood. All joints shall be rabbeted and shall be fastened in two directions with wood screws.
- D. Floor mounted and suspended cabinets shall have removable back panels for access to utility chase from inside the cabinet. Floor mounted cabinets with flush top panel shall also incorporate the top panel as removable.
- E. Door to be provided with five knuckle hinges, manual three point latch and door sill raised at least two inches above cabinet bottom to retain spilled liquid within the cabinet. When more than one door is used, there shall be an overlap of not less than 5/8".
- F. Cabinet ventilation shall include two threaded, two-inch pipe vent outlets and flame arrestors on the back of the cabinet. Vent as required by local code.
- G. Provide minimum two inch deep, lipped, removable, liquid tight, powder coated steel bottom pan, in addition to cabinet bottom.
- H. Provide full width and full depth 3/4" thick adjustable shelf.
- I. All solvent storage cabinets shall be marked with conspicuous, two inch high lettering on one door with: FLAMMABLE KEEP FIRE AWAY.
- J. Finish as specified for wood laboratory casework.

## **Part 3 Execution**

### **3.01 Coordination**

The casework contractor shall cooperate with the General Contractor and with associated trades to coordinate the delivery and installation of this equipment. Installation sites shall be prepared, ready and maintained by General Contractor to conform with SEFA 2.3/2010 conditions.

- A. General conditions indicating readiness for delivery include:
  - 1. Overhead ceiling work - ductwork, lighting, acoustical ceiling, etc. is complete.
  - 2. Air circulation control system is functioning and maintaining relatively constant temperature and humidity conditions closely approximately those to be maintained by the Owner. Temperatures shall be within 65° - 80° F (18° - 27° C) and humidity maintained at 30-50% r.h.
- B. In that equipment furnished in this section is factory pre-finished, it is recommended that all painting be completed in the areas in which casework is to be installed prior to such installation. Casework may be installed over finished flooring.

### 3.02 Installation

- A. The casework specified herein shall be delivered to the building in pre-finished modular units. It shall be set in place, leveled, secured to walls or floors as necessary, trimmed or scribed to make a neat installation. Installation shall be under the direction of a factory-approved superintendent.
- B. The casework contractor shall deliver to the appropriate contractor all sinks, troughs, service fixtures, etc., as supplied in this section for installation and connection by the appropriate trades.
- C. Casework installation:
  - 1. Set casework components plumb, square, and straight with no distortion and securely anchored to building structure. Shim as required using concealed shims.
  - 2. Fasten continuous cabinets together with joints flush, tight and uniform, with alignment of adjacent units within 1/16" tolerance.
  - 3. Secure wall cabinets to solid supporting material, not to plaster, lath or gypsum board. Blocking in wall shall be provided under Rough Carpentry, Division 6.
  - 4. Abut top edge surfaces in one true plane. Provide flush joints not to exceed 1/8" between top units.
- D. Work surface installation:
  - 1. Where required due to field conditions, scribe or caulk to abutting surfaces.
  - 2. Secure joints in the field, where practicable, in the same manner as in factory, with dowels, adhesive or fasteners recommended by manufacturer.
  - 3. Secure work surfaces to casework and equipment components with material and procedures recommended by the manufacturer.
- F. Sink installation: Sinks shall be set in chemical-resistant sealing compound, secured and supported per manufacturer's recommendations.
- G. Accessory installation: Install accessories and fittings in accordance with manufacturer's recommendations. Turn screws to seat flat; do not drive.
- H. Repair or remove and replace defective work, as directed by Architect or Owner upon completion of installation.
- I. Adjust doors, drawers, hardware, fixtures and other moving or operating parts to function smoothly.
- J. Remove all debris, dirt, rubbish and excess material accumulated as a result of the installation of this equipment to designated jobsite disposal area and leave casework clean and orderly.
- K. Broom clean finished casework, touch up as required.
- L. Clean materials as recommended by manufacturer.

**3.03 Protection**

- A. Provide necessary protective measures to prevent damage of casework and equipment from exposure to other construction activity.
- B. Advise contractor of procedures and precautions for protection of material, installed laboratory casework and fixtures from damage by work of other trades

**End of Section**

SECTION 210000  
FIRE PROTECTION

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to all sections within Part D - Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK

- A. Provide all labor, equipment, transportation, implements and materials required to furnish and install a complete and operational fire protection system and all related fire protection work, completed as indicated on Drawings and specified herein. Without limiting the generality thereof, the following are major items of work included.
1. In general the scope shall consist of a relocation of existing sprinkler piping and heads and installation of new sprinkler heads and piping throughout the renovated area, hangers, supports and valves.
  3. Extend the sprinkler main and branch pipes to all the sprinkler heads for a complete operational sprinkler system.
  4. Preparation of complete "Fire Protection Working Drawings" and calculations with a registered Fire Protection Professional Engineering Stamp.
  5. Provide up to date water supply data.
  6. Tests of all piping, systems, devices and alarms.
  7. Sleeves, escutcheons, hangers and supports. Seismic bracing.
  9. Miscellaneous steel supports
  10. All hoisting and rigging.
  11. Scaffolding and staging below 8 feet.
  12. Identification of systems, equipment and valves.
  13. Shop drawings and submittals
  14. Permits, fees and inspections.
  15. System and equipment start-ups; Owner's instructions.
  16. Operation and Maintenance Manuals.
  18. User Training

19. The Fire Protection Subcontractor shall furnish and install all such parts as may be necessary to complete all systems, in accordance with the best practice of his trade, as required by Code, specified and shown on the Drawings. He shall complete all work to the Designer's satisfaction at no additional cost to the Awarding Authority.
  20. Use only qualified personnel who are thoroughly trained and experienced in the skills required to provide first class workmanship and who are thoroughly familiar with the requirements of this work.
  21. The Fire Protection Subcontractor shall give all requisite plans, relating to his work, with proper authorities and shall secure all permits for his work and pay all fees for same.
  22. If any work is performed and subsequent changes are necessary to conform to such codes, regulations and ordinances, the changes shall be made at the Fire Protection Subcontractor's expense.
- C. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. CUTTING AND PATCHING:
  2. JOINT SEALANTS:
- D. Perform work and provide material and equipment as shown on Drawings and as specified or indicated in this Section of the Specifications. Completely coordinate work of this Section with work of other trades and provide a complete and fully functional installation.
- E. Drawings and Specifications form complimentary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation.
- F. Give notices, file plans, obtain permits and licenses, pay fees and backcharges, and obtain necessary approvals from authorities that have jurisdiction as required to perform work in accordance with all legal requirements and with Specifications, Drawings, Addenda and Change Orders, all of which are part of Contract Documents.

#### 1.03 SUBMITTALS

- C. Comply with requirements specified in SUBMITTAL PROCEDURES.
- D. Material and equipment requiring Shop Drawing Submittals shall include but not be limited to:
1. Piping.
  2. Fittings, unions, flanges, and couplings.
  3. Valves
  4. Hangers, plates, and inserts.
  5. Sprinkler heads

#### 1.04 DEFINITIONS

---

Quincy College

- C. As used in this Section, "provide" means "furnish and install" and "POS" means "Provided Under Other Sections". "Furnish" means "to purchase and deliver to the project site complete with every necessary appurtenance and support," and "Install" means "to unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project."

#### 1.05 CONTRACT DOCUMENTS

- C. Listing of Drawings does not limit responsibility of determining full extent of work required by Contract Documents. Refer to Architectural, HVAC, Plumbing, Electrical, and other Drawings and other Sections that indicate types of construction in which work shall be installed and work of other trades with which work of this Section must be coordinated.
- D. Except where modified by a specific notation to the contrary, it shall be understood that the indication and/or description of any item, in the drawings or specifications or both, carries with it the instruction to furnish and install the item, regardless of whether or not this instruction is explicitly stated as part of the indication or description.
- E. Items referred to in singular number in Contract Documents shall be provided in quantities necessary to complete work.
- F. Drawings are diagrammatic. They are not intended to be absolutely precise; they are not intended to specify or to show every offset, fitting, and component. The purpose of the drawings is to indicate a systems concept, the main components of the systems, and the approximate geometrical relationships. Based on the systems concept, the main components, and the approximate geometrical relationships, the contractor shall provide all other components and materials necessary to make the systems fully complete and operational.
- G. Data that may be furnished electronically by the Designer (on computer tape, diskette, or otherwise) is diagrammatic. Such electronically furnished information is subject to the same limitation of precision as heretofore described. If furnished, such data is for convenience and generalized reference, and shall not substitute for Designer's sealed or stamped construction documents.

#### 1.06 DISCREPANCIES IN DOCUMENTS

- C. Where Drawings or Specifications conflict or are unclear, advise the Designer in writing before Award of Contract. Otherwise, Designer's interpretation of Contract Documents shall be final, and no additional compensation shall be permitted due to discrepancies.
- D. Where Drawings or Specifications do not coincide with manufacturers' recommendations, or with applicable codes and standards, alert Designer in writing before installation. Otherwise, make changes in installed work as Designer requires within Contract Price.
- E. If the required material, installation, or work can be interpreted differently from drawing to drawing, or between drawings and specs, this contractor shall provide that material, installation, or work which is of the higher standard.
- F. It is the intent of these contract documents to have the contractor provide systems and components that are fully complete and operational and fully suitable for the intended use. There may be situations in the documents where insufficient information exists to precisely describe a certain component or subsystem, or the routing of a component. In cases such as this, where the contractor has failed to notify the Designer of the situation in accordance with Paragraph (A) above, the contractor shall provide the specific component or subsystem with all

---

Quincy College

South Shore Construction Consulting

**Fire Protection****Section 210000-3**

parts necessary for the intended use, fully complete and operational, and installed in workmanlike manner either concealed or exposed per the design intent.

- G. In cases covered by Paragraph (D) above, where the contractor believes he needs engineering guidance, he shall submit a sketch identifying his proposed solution and the Designer shall review, note if necessary, and approve the sketch.

#### 1.07 MODIFICATIONS IN LAYOUT

- C. HVAC, Plumbing, and Electrical Drawings are diagrammatic. They indicate general arrangements of mechanical and electrical systems and other work. They do not show all offsets required for coordination nor do they show the exact routings and locations needed to coordinate with structure and other trades and to meet Architectural requirements.
- D. In all spaces, prior to installation of visible material and equipment, including access panels, review Architectural Drawings for exact locations and where not definitely indicated, request information from Designer.
- E. Check Contract Drawings as well as Shop Drawings of all subcontractors to verify and coordinate spaces in which work of this Section will be installed.
- F. Maintain maximum headroom at all locations. All piping and associated components to be as tight to underside of structure as possible.
- G. Make reasonable modifications in layout and components needed to prevent conflict with work of other trades and to coordinate according to Paragraphs A, B, C, D above. Systems shall be run in a rectilinear fashion.
- H. Where conflicts or potential conflicts exist and engineering guidance is desired, submit sketch of proposed resolution to Designer for review and approval.

#### 1.08 SITE VISIT

- C. Before submitting bid, visit and carefully examine site to identify existing conditions and difficulties that will affect work of this Section. No extra payment will be allowed for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observer.

#### 1.09 EXISTING CONDITIONS AND PREPARATORY WORK

- C. Before starting work in a particular area of the project, visit site and examine conditions under which work must be performed including preparatory work done under other Sections or Contracts or by User Agency. Report conditions that might affect work adversely in writing through Contractor to Designer. Do not proceed with work until defects have been corrected and conditions are satisfactory. Commencement of work shall be construed as complete acceptance of existing conditions and preparatory work.

#### 1.10 CODES, STANDARDS, AUTHORITIES AND PERMITS

- C. Perform work strictly as required by rules, regulations, standards, codes, ordinances, and laws of local, state, and Federal governments, and other authorities that have legal jurisdiction over

the site. Materials and equipment shall be manufactured, installed and tested as specified in latest editions of applicable publications, standards, rulings and determinations of:

1. Local and state building, plumbing, mechanical, electrical, fire and health department codes.
  2. American Gas Association (AGA).
  3. National Fire Protection Association (NFPA).
  4. American Insurance Association (A.I.A.) (formerly National Board of Fire Underwriters).
  5. Occupational Safety and Health Act (OSHA).
  6. Factory Mutual Association (FM).
  7. Underwriters' Laboratories (UL).
  8. American National Standards Institute (ANSI).
  9. Compressed Gas Association (CGA).
  10. Canadian Standards Association (CSA).
  11. United States Pharmacopeia (USP).
- D. Material and equipment shall be listed by Underwriters' Laboratories (UL), and approved by ASME and AGA for intended service.
- E. When requirements cited in this Specification conflict with each other or with Contract Documents, most stringent shall govern work. Designer may relax this requirement when such relaxation does not violate ruling of authorities that have jurisdiction. Approval for such relaxation shall be obtained in writing.
- F. Most recent editions of applicable specifications and publications of the following organizations form part of Contract Documents:
2. American National Standards Institute (ANSI).
  3. American Society of Mechanical Engineers (ASME).
  4. National Electric Manufacturers Association (NEMA).
  5. American Society for Testing and Materials (ASTM).
  6. American Water Works Association (AWWA).
  7. Thermal Insulation Manufacturers Association (TIMA).
  8. Institute of Electrical and Electronics Engineers (IEEE).
  9. Insulated Cable Engineers Association (ICEA).
  10. National Fire Protection Association (NFPA).

#### 1.11 GUARANTEE AND 24 HOUR SERVICE

- C. Guarantee Work of this Section in writing for one year following the date of beneficial occupancy by the User Agency. If the equipment is used for ventilation, temporary heat, etc. prior to initial beneficial occupancy by the User Agency, the bid price shall include an extended period of warranty covering the one-year of occupancy, starting from the initial date of beneficial occupancy by the User Agency. The guarantee shall repair or replace defective materials, equipment, workmanship and installation that develop within this period, promptly and to Designer's satisfaction and correct damage caused in making necessary repairs and replacements under guarantee within Contract Price.
- D. In addition to guarantee requirements of Division 01 and of Subparagraph A above, obtain written equipment and material warranties offered in manufacturer's published data without exclusion or limitation, in User Agency's name.

- E. Replace material and equipment that require excessive service during guarantee period as defined and as directed by Designer.
- F. Provide 24 hour service beginning on the date the project is first beneficially occupied by the User Agency, whether or not fully occupied, and lasting until the termination of the guarantee period. Service shall be at no cost to the school. Service can be provided by this contractor or a separate service organization. Choice of service organization shall be subject to Designer and the school's approval. Submit name and a phone number that will be answered on a 24-hour basis each day of the week, for the duration of the service.
- G. Submit copies of equipment and material warranties to Designer before final payment.
- H. At end of guarantee period, transfer manufacturers' equipment and material warranties still in force to User Agency.
- I. This Paragraph shall not be interpreted to limit the school's rights under applicable codes and laws and under this Contract.
- J. Part 2 Paragraphs of this Specification may specify warranty requirements that exceed those of this Paragraph.
- K. Use of systems provided under this Section for temporary services and facilities shall not constitute Final Acceptance of work nor beneficial use by User Agency, and shall not institute guarantee period.
- L. Provide manufacturer's engineering and technical staff at site to analyze and rectify problems that develop during guarantee period immediately. If problems cannot be rectified immediately to the schools satisfaction, advise the Designer in writing, describe efforts to rectify situation, and provide analysis of cause of problem. Designer will suggest course of action.

#### 1.12 RECORD DRAWINGS

- C. Comply with requirements specified in Section 017000 – Execution and Closeout Requirements.
- D. Drawings shall show record condition of details, sections, riser diagrams, control changes and corrections to schedules. Schedules shall show actual manufacturer and make and model numbers of final equipment installation.

#### 1.13 BULLETINS, MANUALS, AND OPERATING INSTRUCTIONS, AND PROTECTION

- C. Obtain at time of purchase of equipment, three copies of operation, lubrication and maintenance manuals for all items. Assemble literature in coordinated manuals with additional information describing combined operation of field-assembled units, including as-built wiring diagrams. Manual shall contain names and addresses of manufacturers and local representatives who stock or furnish repair parts for items or equipment. Divide manuals into three sections or books as follows:
  - 1. Directions for and sequence of operation of the fire protection system. Sequence shall list valves, switches, and other devices used to start, stop and control system. Include approved valve directory showing each valve number, location of each valve, and equipment or fixture controlled by valve.

Quincy College

2. Detailed maintenance and trouble shooting manuals containing data furnished by manufacturer for complete maintenance. Include copy of balancing report.
2. Furnish three copies of manuals to Designer for approval and distribution to the school. Deliver manuals no less than 30 days prior to acceptance of equipment to permit User Agency's personnel to become familiar with equipment and operation prior to acceptance.
3. Operating instructions: Upon completion of installation, instruct User Agency's operating personnel in any or all parts of various systems. Instructions shall be performed by factory-trained personnel. User Agency shall determine which systems require additional instructions. Duration of instructions shall take equipment through complete cycle of operation (at least five working days). Make adjustments under operating conditions.
4. Each contractor shall be responsible for his work and equipment until finally inspected, tested, and accepted. Carefully store materials and equipment which are not immediately installed after delivery to site. Close open ends of work with temporary covers or plug during construction to prevent entry of obstructing material.
5. Each separate contractor shall protect the work and material of other trades that might be damaged by his work or workmen and make good all damage thus caused.

## **PART 2 - PRODUCTS**

### **2.1 PIPE FITTINGS AND JOINTS**

- A. The piping systems and all fittings and components shall be rated for the working pressures involved.
- B. All piping shall conform to ASTM Standards and shall be UL listed and FM approved for fire service; piping shall be marked accordingly.
- C. Victaulic, Gustin-Bacon and Grinnel, or equal. "Victaulic" fittings and couplings are used throughout to establish a specific criteria and level of quality.
- E. Service: Sprinkler and fire service piping through 5 inches.  
Material: ASTM-135, Schedule 10 steel, roll grooved ends. Cut grooving shall not be allowed  
Fittings: Victaulic full flow malleable iron, ductile iron, steel or segmentally welded steel with grooved or shouldered ends.  
Couplings: Victaulic Style 75 couplings, Style 72 outlet couplings; Style 741 "Vic-Flange" at equipment and valves 2 ½ inches and larger.
- F. Service: Sprinkler piping, exposed to view in occupiable/habitable areas, and all threaded lines.  
Material: Schedule 40 steel with threaded ends.  
Fittings: Full flow malleable iron, cast iron or steel; exposed.

- G. Service: Sprinkler drains, inspector's test connection lines, exclusive of risers.
- Material: Connections to sprinkler lines, valves and test stations: Schedule 40 steel, threaded. Drain and test risers: ASTM-135 Schedule 10 steel, roll grooved ends Cut grooving shall not be allowed
- Fittings: Full flow malleable iron, ductile iron; steel or segmentally welded steel; screwed fittings as applicable; Victaulic fittings with grooved or shouldered ends as applicable.
- Couplings: Victaulic Style 07 "Zero-Flex" couplings for risers; Style 75 Standard flexible couplings for horizontal runs; Style 72 outlet couplings for connections to sprinkler lines and test or drain risers. [Style 920"Mechanical-T" threaded U- bolted branch outlets may be utilized in lieu of Style 72 outlet couplings in this application.]
- H. Gaskets: Victaulic couplings shall be provided with Grade "E", EPDM gaskets.
- I. Reducers: Reducing fittings shall be used throughout; the use of reducing couplings shall not be allowed.
- J. Expansion: When crossing building expansion joints, expansion loops, as required shall be installed with the appropriate couplings to allow for expansion in agreement with that as provided by the building joint. Piping shall be securely anchored to the building structure on both sides of the expansion loop.
- K. Threading: Threaded joints may be substituted for grooved ends and Victaulic couplings; however, shall be limited to Schedule 40 piping. NOTE: Threading of piping less than Schedule 40 shall not be allowed.

## 2.2 VALVES

- A. Valves shall be of standard weight and materials as required by NFPA, UL listed, FM approved. Jenkins, Mueller, Victaulic or equal.

## 2.3 SEISMIC PIPE HANGING REQUIREMENTS

- A. Seismic protection of all fire protection piping shall comply with the requirements of NFPA 13 1994 Edition and BOCA 1993 Seismic Hazard Exposure Group IIC.
- B. The Subcontractor shall have the option of substituting alternate seismic supports and anchors; provided his submittals are accompanied by calculations and shop drawings signed and sealed by a licensed structural professional engineer in the state of Massachusetts.

---

Quincy College

- C. All mechanical materials and equipment including all pipe 2 1/2" and larger shall be supported and anchored to resist the external seismic forces for BOCA seismic hazard exposure Group IIC. Force shall be resisted without failure or permanent displacement when it is applied in any direction and shall conform to section 1612.6 of the latest edition of BOCA code.

## **2.4 SLEEVES AND ESCUTCHEONS**

- A. All pipes passing through floors, walls, or partitions shall be provided with sleeves having an internal diameter one inch larger than the outside diameter of the pipe or insulation on covered lines.
- B. Sleeves through outside walls shall be Schedule 40 black steel pipe with a 150 pound black steel slip on welding flanges, welded at the center of the sleeve and shall be painted with one coat of bitumastic paint, inside and outside.
- C. Sleeves through masonry floors and interior masonry walls shall be Schedule 40 black steel pipe.
- D. Sleeves through interior non-masonry walls or partitions shall be 22 gauge galvanized sheet steel.
- E. Inserts shall be individual or strip type of pressed steel construction with accommodation for removable nuts and threaded rods up to 3/4 inch diameter, permitting lateral adjustment. Individual inserts shall have an opening at the top to allow reinforcing rods up to 1/2 inch diameter to be passed through the insert body. Strip inserts shall have attached rods with hooked ends to allow fastening to reinforcing rods.
- F. Unless otherwise specified herein, escutcheons shall be cast brass chrome plated type and provided with a set screw to properly hold escutcheon in place.

## **2.5 SPRINKLER ACCESSORIES**

- A. Sprinkler Heads
  - 1. Sprinkler heads shall be UL listed and FM approved and of the automatic, closed type. Reliable, Viking, Grinnell, Central, Gem, Star or equal.
  - 2. Sprinkler heads shall be quick response type heads and have a minimum temperature rating of 165 degrees F with 1/2 inch orifice. Areas subject to higher temperatures shall be provided with heads of higher temperature rating, in accordance with NFPA # 13.
  - 3. Sprinkler heads located in Mechanical Rooms, Storage Rooms, Service Areas, and where otherwise subjected to susceptible damage, shall be provided with guards.
  - 4. All heads shall be centered in tiles, and with other ceiling objects, unless specifically denoted otherwise

5. The Subcontractor shall refer to architectural plans and schedules to verify ceiling types and heights for areas of construction and for final locations of all sprinkler heads. If additional heads are required, beyond what is shown, Provide the required heads and coordinate their final locations with the designer.
6. All recessed sprinkler heads shall be of the adjustable type.  
  
All heads shall be centered in tiles, and with other ceiling objects, unless specifically
7. denoted otherwise.
8. Sprinkler head locations shall be coordinated with all surface mounted items, such as cornices, low soffits and lighting fixtures and shall be located accordingly. Extended escutcheons may be utilized where heads cannot be moved, if acceptable to the designer.
9. All sprinkler heads and escutcheons to have satin chrome finish. Sprinkler heads at areas with ceilings shall be provided with white cover plate.

C. Water Pressure Gauges

1. Water pressure gauges of the double spring Bourdon type, as manufactured by U.S. Gauge, American, Mueller, Terice, Ashcroft or equal, shall be installed in the sprinkler system. The gauges shall have a six inch diameter face with brass case and shall be Underwriters' approved.
2. Gauges shall be controlled by a valve with arrangements for drainage. An outlet, at least one quarter of an inch in size, plugged for the installation of the inspector's gauge shall be located between each valve and gauge.
3. Dial graduations reading in "psig" shall be such that the normal operating pressure of the system installed shall be indicated near the middle of the scale.
4. The accuracy of the gauges shall be within one (1%) percent of the scale range.

**2.6 SPARE HEADS AND CABINETS**

- A. Provide where directed by the Designer, a metal cabinet in the building containing spare sprinkler heads and wrenches.
- B. Cabinet shall have shelves for storing the spare sprinkler heads in an orderly manner. The shelf spaces shall be subdivided to segregate the sprinkler heads of each type and clearly identify them with approved markings. Cabinet shall have proper arrangements for hanging the wrenches. Wrenches shall be located so as to be readily accessible.
- C. Cabinet shall be dust tight and red in color, enameled finish. The outside of the cabinet door shall have painted on it in legible and clear lettering "Automatic Sprinklers - Reserve Supply", suitable standard instructions pertaining to the sprinkler systems and any other necessary information shall be fastened onto the inside of the cabinet door.
- E. The cabinet size and number of each type spare sprinkler head shall conform to the National Fire Protection Association Pamphlet No. 13.

## 2.7 ACCESS PANELS

- A. All work shall be installed so that all parts requiring inspection, operation, maintenance and repair are readily accessible. Minor deviations from the drawings may be made to accomplish this, but changes of magnitude shall not be made prior to written approval from the Designer.
- B. Furnish access panels and doors for installation in walls and ceilings at locations indicated on the Drawings and as required to permit access for adjustment, removal or replacement and servicing of all valves and equipment.
- C. Access panels and doors shall be installed by the General Contractor for the surface or construction upon which the panels are located.
- D. All access panels and doors shall be located in closets, storage rooms and/or other non-public areas, in a workmanlike manner, positioned so that the junction can be easily reached and the size shall be sufficient for this purpose [minimum 12 inches by 16 inches]. When the access panels and doors are required in corridors, lobbies or other occupied areas, they shall be located as directed by the Designer.
- E. Access panels and doors shop drawings shall be submitted to the Designer for review.
- F. This Subcontractor shall inform the Applicable Section Subcontractor where access is required through ceilings in order that special clips for access can be provided.
- G. Access panels and doors shall be rated as required to maintain rating of surface they are installed in.
- H. This Subcontractor shall coordinate with the General Contractor to ensure that all access panels on the project have cylinder locks that are keyed alike.

## 2.8 MISCELLANEOUS

- A. The miscellaneous components shall be manufactured by Reliable, Grinnel, Viking or equal. Reliable is used throughout to set a specific criteria and a level of quality.
- B. Furnish all other accessories required, as per NFPA #13 including:
  - 1. Sprinkler Guards: Not Applicable
  - 2. Signs shall be as per NFPA 13.

## **PART 3 - EXECUTION**

- 3.1 GENERAL:** All system installation shall comply with the latest editions of the Standard for the Installation of Sprinkler Systems, NFPA No. 13. Include all items of labor and materials required to meet such standards regardless of the commission of these items in these Specifications or on the Drawings. Where quantities, sizes, or other requirements herein specified are in excess of the NFPA Standard's requirements the Specifications shall govern. Install drains at all low points such that the entire system can be drained.
- 3.2 SPRINKLER HEADS:** Install new sprinkler heads and connect piping. Verify that temperature ratings are correct as specified.

### 3.3 DRAINS

- A. Install inspector's test drains on wet pipe sprinkler systems as required by Code.
- B. Drain valves shall be piped to a safe place and the discharge shall be visible either by open-end drain pipe or sight drain fitting.
- C. Identification signs of standard design shall be installed and fastened securely at designated locations in accordance with NFPA, and at all drain and inspector's valves.
- D. Install flushing connections in accordance with NFPA.

### 3.4 GENERAL INSTALLATION REQUIREMENTS

#### A. Piping Installation

1. Install piping approximately as shown on the Drawings and as directed during installation by the Designer.
2. Piping shall be installed straight and direct as possible forming right angles or parallel lines with building walls and other piping and neatly spaced.
3. Screwed pipe and copper tubing shall be reamed smooth before installation.
4. All pipe and fittings shall be manufactured in the United States of America and in accordance with the Commercial Standards, American National Standards Institute and American Society of Testing Materials.

#### B. Hanger Installation

1. All hangers and supports shall be in conformance with NFPA 13. All piping shall be supported from the building structure by means of approved hangers and supports, to maintain proper grading and pitching of lines, to prevent vibration and to secure piping in place, and shall be so arranged as to provide for expansion and contraction.
2. Maximum spacing of hangers on runs of pipe (vertical and horizontal) having no concentration of weight shall be as follows:
  - a. Schedule - Hanger spacing in feet/pipe material.

Pipe Size (Inches)	Iron or Steel
1/2	5
3/4	6
1	7
1 1/4	9
1 1/2	9
2	10
2 1/2	11
3	12
3 1/2	13
4	14

3. For sprinkler systems hangers shall be approved black malleable iron, heavy-duty pattern having two (2) parts bolted together.

C. Installation of Sleeves, Inserts and Escutcheons

1. Sleeves through interior masonry or non-masonry walls or partitions shall be set flush with the finished surfaces of the wall or partition.
2. Field drilling for inserts required for work under this Section of the Specifications shall be provided by this Subcontractor.
3. Each interior wall or partition sleeve shall be packed with foam or glass wool to within one inch of each face of wall and the remaining portion of each end of sleeve shall be sealed with mineral fiber rope.

D. Valve Installation

1. Location of Valves: These shall be valves where indicated on the Drawings.

E. Installation of Gauges and Thermostats

1. Thermometers and pressure gauges shall be installed in such a manner as to cause a minimum restriction to the flow in the pipes and so that they can be easily read from the floor.
2. Pressure gauges in the sprinkler systems shall be installed where required.

F. Pressure gauges shall be where required by NFPA 13.

- G. Final sprinkler system test shall be witnessed by City Representatives and the Owner's Representative. Valves shall be properly adjusted for maximum pressure setting allowable as required and a typewritten report of such tests and adjustments shall be submitted to the Designer.

H. Signaling devices shall consist of the following: Provide where required

- I. Complete and submit all necessary certificates and documentation of testing.

### 3.5 TESTING

- A. Testing and flushing of the fire protection systems shall be done at the expense of this Subcontractor and with equipment furnished by him. Testing shall be done in the presence of duly authorized inspectors and representatives of the Designer and the Owner within forty-eight hour notice given those authorities. Prior to testing, the system shall be thoroughly flushed with clean water.
- B. The system shall be repaired and retested until made perfect, without additional expense to the Owner.

- C. To test piping, subject it to a three-hour hydraulic test of 200 psi, and as required by NFPA. Piping shall be repaired until such tests show no leaks. Where required, and depending on the building's timing and schedule, the system may be required to be tested without final swing elbows and heads installed. In this case, a second test will be required upon installation of swing elbows and heads.
- D. Material and test certificates must be signed by the Resident Engineer prior to and upon completion of testing. Final test reports must be approved in writing by local authorities.
- E. Results of tests shall be recorded and submitted using the forms in NFPA #13, for review by the Engineer. The Material and Test Certificate shall also be sent to the Owner and the Department of Public Safety.
- F. This Subcontractor shall ensure that the underground piping from the street main and service entry piping has been tested to 200 psig in accordance with NFPA 24 requirements. This shall be recorded separately from the interior piping. Coordinate this with the site water piping installer.
- G. Provide all necessary and appropriate personnel to participate in and coordinate fire protection systems with all fire alarm testing, or other systems testing which may interface with fire protection system. Participation shall include all preliminary testing, walk-through testing prior to official walk-through testing and any re-testing if required.

### **3.6 START-UP SERVICE**

- A. When the equipment listed herein has been completely piped up, wired and ready for operation, this Subcontractor shall contact the supplier's or manufacturer's authorized representative, who as soon thereafter as possible shall visit the project and place the equipment in operation, making such adjustments as may be necessary to provide satisfactory performance.
- B. Before the following equipment is accepted, this Subcontractor shall furnish the Designer with a written statement from the supplier or manufacturer's authorized representative indicating that the equipment was started up by them and was left in a satisfactory manner.

### **3.7 PAINTING**

- A. Supply ferrous metal work, except piping, with at least one factory prime coat.
- B. This Subcontractor shall touch-up, with spray paint, all scratched or damaged surfaces of equipment with factory finish. Spray paint shall be the same color and type as factory finish.
- C. This Subcontractor shall furnish and install approved protective "bags" neatly and tightly secured over each sprinkler head, for protection during painting and other finish work. Remove bags when painting is complete.

### **3.8 CONNECTIONS TO EQUIPMENT**

- A. Provide unions or flanges at all connections to equipment. Ensure that piping adjacent to equipment is readily removable for servicing and/or removal of equipment, without shutting down the entire system.

---

Quincy College

- B. Install unions in piping up to and including 2 inch pipe size. Install flanges in piping 2 1/2 inch pipe size and larger.
- C. Prevent galvanic corrosion by isolating copper and steel. Use red brass adapters, or completely isolate flanges using full face gaskets with bolts installed through phenolic sleeves with insulating fiber washers.

### **3.9 COMPLETION**

- A. Remove oil and dirt from equipment surfaces and bases.
- B. Clean all items and equipment.
- C. Leave fire protection work in a new, working order.

### **3.10 INSTRUCTIONS TO THE OWNER**

- A. After completion of assembly and installation of all systems, equipment and piping required under this Section of the Specifications, the Owner's supervisory and operating personnel shall be instructed regarding the operation and maintenance of the systems. The instruction shall be given by the Fire Protection Subcontractor and other qualified personnel who are thoroughly familiar with all systems. The instruction period shall last as long as necessary.
- B. Submit to the Owner, lists for each system or piece of equipment indicating that all components have been checked and are complete prior to instruction period.
- C. Thoroughly instruct the Owner's authorized representative in the safe operation of the systems and equipment.
- D. Submit a complete record of instructions given to the Owner. For each instruction period, supply the following data:
  - 1. Date
  - 2. Duration
  - 3. System of equipment involved
  - 4. Names or persons giving instructions
  - 5. Names of persons being instructed
  - 6. Other people present
- E. Arrange and pay for the services of qualified manufacturer's representatives to instruct the Owner on specialized portions of the installation and specialized systems.

### **3.11 INSPECTION**

- A. Periodic inspections of the work in progress may be made to check general conformity of the work to the Drawings and Specifications.
- B. Correct all deficiencies immediately upon notification.

---

Quincy College

**Fire Protection**

### **3.12 SPECIAL DESIGN CONSIDERATIONS**

- A. Attain up-to-date water flow data for completion of hydraulic calculations.
- B. In general, electric closets, electric rooms and telephone rooms will have heads unless otherwise eliminated by the local building inspector.
- C. The systems shall be hydraulically designed and supported by hydraulic calculations. Fire Protection Working Drawings and complete hydraulic calculations shall be provided for approval showing the proposed layout of piping based on hydraulic calculations.
- D. A 10 psig cushion shall be hydraulically designed into each system.
- E. All sprinkler heads should be 165°F rated, with an orifice size of 1/2 inch. Sprinkler spacing shall not exceed a maximum spacing of 200 sq.ft. per head.
- F. An Inspector's Test Connection shall be provided at the hydraulically most remote part of the automatic sprinkler system.
- G. Flushing connections shall be provided at the most hydraulically remote ends of the crossmains. All branch lines on gridded sprinkler systems shall be arranged to facilitate flushing; this requires that one end of each branch line be detachable.
- H. The systems shall be designed in complete accordance with and as defined in NFPA and as required by the Department of Public Safety and the Fire Department. Systems shall be designed to provide for the minimum required water densities over the hydraulically most demanding rectangular areas as follows:
  - 1. Light Hazard Occupancy at 0.125 GPM/SF over the most hydraulically remote 1500 SF for all Office and General type areas.

### **3.13 RUBBISH REMOVAL**

- A. Remove from the site and legally dispose of all cartons of rubbish and debris resulting from work under this Section not less than once per week.

### **3.14 WET BUILDING SYSTEM**

- A. It is the intent of the Specification that the Subcontractor hydraulically design the systems and layout the piping the most effective way. All piping shall be run concealed where ceilings will be installed. Piping shall be integrated within the structure as structure is presently designed. This shall not relieve this Subcontractor from coordinating all exposed and concealed items.
- B. Install drain valves, vents and section valves where required for venting and draining systems and to facilitate repairs to any section of the systems without shutting down the entire system. All valves shall be provided with tamper switches.
- C. Piping shall be designed and laid out to allow flexibility in final head locations relative to other ceiling components and for future alterations. This requires a system of tees facing up with adequate swing elbows to allow for exact final positioning and height of heads.

**3.16 BUILDING SYSTEM**

- A. The building fire protection system shall begin as denoted herein and where indicated.
- B. All components of the system described above shall be furnished and installed under this portion of the work.

**3.17 SYSTEM IDENTIFICATION**

- A. Provide color-coded pipe identification markers on all piping installed under this Section.
- B. Pipe markers shall be Snap-On laminated plastic equal to "Setmark" by Seton Name Plate Corp., Star Sprinkler Corp., W.H. Brady Co., or equal.
- C. Provide an arrow marker with each pipe service marker.
- D. Piping shall be labeled at 40-foot intervals.
- E. In general, 1 1/2 inch high legend shall be used for pipes 4 inch diameter and larger; 3/4 inch high legend shall be used for pipe lines 3 inch diameter and smaller. All identification shall be in accordance with NFPA and ANSI standards.
- F. Identify all drains and drain points, controls and similar equipment as to service with white lamacoid engraved nameplates with black letters. Permanently secure with self-tapping screws. Submit plate description for review.
- G. Provide typewritten master lists in Operating and Maintenance Instruction Manuals; and shop equipment numbers on Record Prints and sepias.
- H. Supply and install 1 1/2 inch diameter, 1/16 inch thick brass tags with 3/8 inch die stamped black letters. Attach to valves with four inch brass chains.
- I. Prepare a small-scale fire protection system flow diagram of the piping systems to identify equipment control valves, drains, Inspector's tests and valves. Include these diagrams in record drawings.
- J. Insert page-size copies of diagrams into each Operating and Maintenance Manual.
- K. Install a diagram, framed under glass, on the mechanical equipment room wall. Final location shall be directed by the Owner.

**3.18 FINAL INSPECTION**

- A. When the work under this Contract has been completed and is ready for final inspection, such an inspection shall be made by the Designer and the Owner's representatives. At this time, the Fire Protection Subcontractor shall demonstrate that the requirements of these Specifications and the Drawings have been met to the satisfaction of the Designer, Owner and the Quincy Fire Department.

END OF SECTION

## SECTION 220000

## PLUMBING

(Filed Sub-Bid Required)

## PART 1 - GENERAL

## 1.01 GENERAL PROVISIONS

- A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.
- B. Time, Manner and Requirements for Submitting Sub-Bids:
1. Sub-bids for work under this Section shall be for the complete work and shall be filed in a sealed envelope at a time and place as stipulated in the "NOTICE TO CONTRACTORS".

The following should appear on the upper left hand corner of the envelope:

NAME OF SUB-BIDDER: (Insert name of sub-bidder)

MASS. STATE PROJECT: ((Insert project number from top of page))

SUB-BID FOR SECTION: 220000 - PLUMBING

2. Each sub-bid submitted for work under this Section shall be on forms furnished as required by Section 44F of Chapter 149 of the General Laws, as amended. Sub-bid forms may be obtained from the architect.
  3. Sub-bids filed shall be accompanied by BID BOND or CASH or CERTIFIED CHECK or TREASURER'S CHECK or CASHIER'S CHECK issued by a responsible bank or trust company payable to the Commonwealth of Massachusetts in the amount of five percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.
- B. Sub Sub-Bid Requirements: None under this Section.
1. Sub bidder's attention is directed to Massachusetts G.L. Chapter 149 Section 44F, as amended, which provides in part as follows:
  2. Each sub-bidder shall list in Paragraph E of the "Form for Sub-bids" the name and bid price of each person, firm or corporation performing each class of work or part thereof for which the Section of the Specifications for that sub trade requires such listing, provided that, in the absence of a contrary provision in the Specifications, any sub-bidder may, without listing any bid price, list his own name or part thereof and perform that work with persons on his own payroll, if such sub-bidders, after sub-bid openings, shows to the satisfaction of the Awarding Authority that he does customarily perform such class of work with persons on his own payroll and is qualified to do so. This Section of the Specifications requires that the following classes of work shall be listed in Paragraph E under conditions indicated herein.

Quincy College

CLASSES OF WORK  
Insulation

- C. Reference Drawings: The Work of this Filed Sub-Bid is shown on the following Contract Drawings: P-1 & P-2

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Domestic cold water system to each new sink in the renovated Biotech Lab and Lecture Rm.
  2. Domestic HOT water system to each new sink in the renovated Biotech Lab and Lecture Rm.
  3. Natural Gas system to each Turrett located on the sink counter in the renovated Biotech Lab.
  4. Tempered water system connecting to the emergency showers and eyewash stations. Included shall be a thermostatic mixing valve.
  5. Acid resisting waste and vent system in the renovated Biotech Lab connecting to each and every fixture and piece of equipment requiring acid resisting drainage
  6. Insulation.
  7. Hangers, supports and attachments.
  8. Core drilling for the Work of this Section.
- B. Items To Be Installed Only: Install the following items as furnished by the designated Sections:
2. FURNISHINGS:
    - a. Not Applicable
- C. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. CUTTING AND PATCHING:
  2. JOINT SEALANTS:
- D. Perform work and provide material and equipment as shown on Drawings and as specified or indicated in this Section of the Specifications. Completely coordinate work of this Section with work of other trades and provide a complete and fully functional installation.
- E. Drawings and Specifications form complimentary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation.
- F. Give notices, file plans, obtain permits and licenses, pay fees and back charges, and obtain necessary approvals from authorities that have jurisdiction as required to perform

---

Quincy College

work in accordance with all legal requirements and with Specifications, Drawings, Addenda and Change Orders, all of which are part of Contract Documents.

### 1.03 SUBMITTALS

- A. Comply with requirements specified in SUBMITTAL PROCEDURES.
- B. Material and equipment requiring Shop Drawing Submittals shall include but not be limited to:
  - 1. Piping.
  - 2. Fittings, unions, flanges, and couplings.
  - 3. Insulation.
  - 4. Valves
  - 5. Hangers, plates, and inserts.
  - 6. Plumbing Fixtures

### 1.04 DEFINITIONS

- A. As used in this Section, "provide" means "furnish and install" and "POS" means "Provided Under Other Sections". "Furnish" means "to purchase and deliver to the project site complete with every necessary appurtenance and support," and "Install" means "to unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project."

### 1.05 CONTRACT DOCUMENTS

- A. Listing of Drawings does not limit responsibility of determining full extent of work required by Contract Documents. Refer to Architectural, HVAC, Plumbing, Electrical, and other Drawings and other Sections that indicate types of construction in which work shall be installed and work of other trades with which work of this Section must be coordinated.
- B. Except where modified by a specific notation to the contrary, it shall be understood that the indication and/or description of any item, in the drawings or specifications or both, carries with it the instruction to furnish and install the item, regardless of whether or not this instruction is explicitly stated as part of the indication or description.
- C. Items referred to in singular number in Contract Documents shall be provided in quantities necessary to complete work.
- D. Drawings are diagrammatic. They are not intended to be absolutely precise; they are not intended to specify or to show every offset, fitting, and component. The purpose of the drawings is to indicate a systems concept, the main components of the systems, and the approximate geometrical relationships. Based on the systems concept, the main components, and the approximate geometrical relationships, the contractor shall provide all other components and materials necessary to make the systems fully complete and operational.
- E. Data that may be furnished electronically by the Designer (on computer tape, diskette, or otherwise) is diagrammatic. Such electronically furnished information is subject to the same limitation of precision as heretofore described. If furnished, such data is for convenience and generalized reference, and shall not substitute for Designer's sealed or stamped construction documents.

### 1.06 DISCREPANCIES IN DOCUMENTS

Quincy College

**Plumbing**

---

Quincy College

- A. Where Drawings or Specifications conflict or are unclear, advise the Designer in writing before Award of Contract. Otherwise, Designer's interpretation of Contract Documents shall be final, and no additional compensation shall be permitted due to discrepancies.
- B. Where Drawings or Specifications do not coincide with manufacturers' recommendations, or with applicable codes and standards, alert Designer in writing before installation. Otherwise, make changes in installed work as Designer requires within Contract Price.
- C. If the required material, installation, or work can be interpreted differently from drawing to drawing, or between drawings and specs, this contractor shall provide that material, installation, or work which is of the higher standard.
- D. It is the intent of these contract documents to have the contractor provide systems and components that are fully complete and operational and fully suitable for the intended use. There may be situations in the documents where insufficient information exists to precisely describe a certain component or subsystem, or the routing of a component. In cases such as this, where the contractor has failed to notify the Designer of the situation in accordance with Paragraph (A) above, the contractor shall provide the specific component or subsystem with all parts necessary for the intended use, fully complete and operational, and installed in workmanlike manner either concealed or exposed per the design intent.
- E. In cases covered by Paragraph (D) above, where the contractor believes he needs engineering guidance, he shall submit a sketch identifying his proposed solution and the Designer shall review, note if necessary, and approve the sketch.

#### 1.07 MODIFICATIONS IN LAYOUT

- A. HVAC, Plumbing, Fire Protection and Electrical Drawings are diagrammatic. They indicate general arrangements of mechanical and electrical systems and other work. They do not show all offsets required for coordination nor do they show the exact routings and locations needed to coordinate with structure and other trades and to meet Architectural requirements.
- B. In all spaces, prior to installation of visible material and equipment, including access panels, review Architectural Drawings for exact locations and where not definitely indicated, request information from Designer.
- C. Check Contract Drawings as well as Shop Drawings of all subcontractors to verify and coordinate spaces in which work of this Section will be installed.
- D. Maintain maximum headroom at all locations. All piping and associated components to be as tight to underside of structure as possible.
- E. Make reasonable modifications in layout and components needed to prevent conflict with work of other trades and to coordinate according to Paragraphs A, B, C, D above. Systems shall be run in a rectilinear fashion.
- F. Where conflicts or potential conflicts exist and engineering guidance is desired, submit sketch of proposed resolution to Designer for review and approval.

#### 1.08 SITE VISIT

---

Quincy College

- A. Before submitting bid, visit and carefully examine site to identify existing conditions and difficulties that will affect work of this Section. No extra payment will be allowed for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observer.

#### 1.09 EXISTING CONDITIONS AND PREPARATORY WORK

- A. Before starting work in a particular area of the project, visit site and examine conditions under which work must be performed including preparatory work done under other Sections or Contracts or by User Agency. Report conditions that might affect work adversely in writing through Contractor to Designer. Do not proceed with work until defects have been corrected and conditions are satisfactory. Commencement of work shall be construed as complete acceptance of existing conditions and preparatory work.
- B. Work shown on the contract drawings as being existing was derived from "As-Built" drawings dated in 2008.

#### 1.10 CODES, STANDARDS, AUTHORITIES AND PERMITS

- A. Perform work strictly as required by rules, regulations, standards, codes, ordinances, and laws of local, state, and Federal governments, and other authorities that have legal jurisdiction over the site. Materials and equipment shall be manufactured, installed and tested as specified in latest editions of applicable publications, standards, rulings and determinations of:
  - 1. Local and state building, plumbing, mechanical, electrical, fire and health department codes.
  - 2. American Gas Association (AGA).
  - 3. National Fire Protection Association (NFPA).
  - 4. American Insurance Association (A.I.A.) (formerly National Board of Fire Underwriters).
  - 5. Occupational Safety and Health Act (OSHA).
  - 6. Factory Mutual Association (FM).
  - 7. Underwriters' Laboratories (UL).
  - 8. American National Standards Institute (ANSI).
  - 9. Compressed Gas Association (CGA).
  - 10. Canadian Standards Association (CSA).
  - 11. United States Pharmacopeia (USP).
- B. Material and equipment shall be listed by Underwriters' Laboratories (UL), and approved by ASME and AGA for intended service.
- C. When requirements cited in this Specification conflict with each other or with Contract Documents, most stringent shall govern work. Designer may relax this requirement when such relaxation does not violate ruling of authorities that have jurisdiction. Approval for such relaxation shall be obtained in writing.
- D. Most recent editions of applicable specifications and publications of the following organizations form part of Contract Documents:
  - 1. American National Standards Institute (ANSI).
  - 2. American Society of Mechanical Engineers (ASME).
  - 3. National Electric Manufacturers Association (NEMA).
  - 4. American Society for Testing and Materials (ASTM).
  - 5. American Water Works Association (AWWA).
  - 6. Thermal Insulation Manufacturers Association (TIMA).

---

Quincy College

**Plumbing**

Quincy College

7. Institute of Electrical and Electronics Engineers (IEEE).
  8. Insulated Cable Engineers Association (ICEA).
  9. National Fire Protection Association (NFPA).
- E. Special attention is directed to requirements of NFPA 45, Laboratories Using Chemicals.
- a. Z305.1 - M - Non-flammable Medical Gas Piping Systems.

#### 1.11 GUARANTEE AND 24 HOUR SERVICE

- A. Guarantee Work of this Section in writing for one year following the date of beneficial occupancy by the User Agency. If the equipment is used for ventilation, temporary heat, etc. prior to initial beneficial occupancy by the User Agency, the bid price shall include an extended period of warranty covering the one-year of occupancy, starting from the initial date of beneficial occupancy by the User Agency. The guarantee shall repair or replace defective materials, equipment, workmanship and installation that develop within this period, promptly and to Designer's satisfaction and correct damage caused in making necessary repairs and replacements under guarantee within Contract Price.
- B. In addition to guarantee requirements of Division 01 and of Subparagraph A above, obtain written equipment and material warranties offered in manufacturer's published data without exclusion or limitation, in User Agency's name.
- C. Replace material and equipment that require excessive service during guarantee period as defined and as directed by Designer.
- D. Provide 24 hour service beginning on the date the project is first beneficially occupied by the User Agency, whether or not fully occupied, and lasting until the termination of the guarantee period. Service shall be at no cost to the school. Service can be provided by this contractor or a separate service organization. Choice of service organization shall be subject to Designer and the school's approval. Submit name and a phone number that will be answered on a 24-hour basis each day of the week, for the duration of the service.
- E. Submit copies of equipment and material warranties to Designer before final payment.
- F. At end of guarantee period, transfer manufacturers' equipment and material warranties still in force to User Agency.
- G. This Paragraph shall not be interpreted to limit the schools rights under applicable codes and laws and under this Contract.
- H. Part 2 Paragraphs of this Specification may specify warranty requirements that exceed those of this Paragraph.
- I. Use of systems provided under this Section for temporary services and facilities shall not constitute Final Acceptance of work nor beneficial use by User Agency, and shall not institute guarantee period.
- J. Provide manufacturer's engineering and technical staff at site to analyze and rectify problems that develop during guarantee period immediately. If problems cannot be rectified immediately to the school's satisfaction, advise the Designer in writing, describe efforts to rectify situation, and provide analysis of cause of problem. Designer will suggest course of action.

#### 1.12 RECORD DRAWINGS

Quincy College

**Plumbing**

---

Quincy College

- A. Comply with requirements specified in Section 017000 – Execution and Closeout Requirements.
- B. Drawings shall show record condition of details, sections, riser diagrams, control changes and corrections to schedules. Schedules shall show actual manufacturer and make and model numbers of final equipment installation.

#### 1.13 BULLETINS, MANUALS, AND OPERATING INSTRUCTIONS, AND PROTECTION

- A. Obtain at time of purchase of equipment, three copies of operation, lubrication and maintenance manuals for all items. Assemble literature in coordinated manuals with additional information describing combined operation of field-assembled units, including as-built wiring diagrams. Manual shall contain names and addresses of manufacturers and local representatives who stock or furnish repair parts for items or equipment. Divide manuals into three sections or books as follows:
  - 1. Directions for and sequence of operation of each item of Plumbing systems. Sequence shall list valves, switches, and other devices used to start, stop and control system. Include approved valve directory showing each valve number, location of each valve, and equipment or fixture controlled by valve.
  - 2. Detailed maintenance and trouble shooting manuals containing data furnished by manufacturer for complete maintenance.
- B. Furnish three copies of manuals to Designer for approval and distribution to the school. Deliver manuals no less than 30 days prior to acceptance of equipment to permit User Agency's personnel to become familiar with equipment and operation prior to acceptance.
- C. Operating instructions: Upon completion of installation, instruct User Agency's operating personnel in any or all parts of various systems. Instructions shall be performed by factory-trained personnel. User Agency shall determine which systems require additional instructions. Duration of instructions shall take equipment through complete cycle of operation (at least five working days). Make adjustments under operating conditions.
- D. Each contractor shall be responsible for his work and equipment until finally inspected, tested, and accepted. Carefully store materials and equipment which are not immediately installed after delivery to site. Close open ends of work with temporary covers or plug during construction to prevent entry of obstructing material.
- E. Each separate contractor shall protect the work and material of other trades that might be damaged by his work or workmen and make good all damage thus caused.

---

Quincy College

## PART 2 - PRODUCTS

## 2.01 PIPE FITTINGS AND JOINTS

## A. General

1. Pipe and fittings shall conform to the latest ANSI, ASTM, NFPA and AWWA Standards including latest amendments.
2. Each length of pipe, each pipe fitting, trap, material and/or device used in the respective system shall have cast, stamped or indelibly marked on it, the maker's name or mark, weight and quality of the product when such marking is required by the approved standard that applies.
3. Piping and fittings shall be factory coated.

## B. Acid Waste and Vent Piping

1. Piping and fittings shall be as manufactured by R.G. Sloane, Enfield, Orion or approved equal.
2. Piping shall be Schedule 40 polypropylene with electrical heat fusion type fittings.

## C. Waste and Vent Piping

1. Piping shall be no-hub Schedule 40 cast iron piping joined with 4-band clamps.

## D. Natural Gas Piping

1. 2 inches and smaller shall be Schedule 40 black steel pipe with malleable iron threaded cast fittings ASTM B16.3, Class 150.
2. Gas piping at equipment shall be provided with additional supports.
3. All work shall be installed in strict accordance with the Massachusetts State Gas Code.

## E. Unions and Flanges

1. Unless otherwise specified herein, unions for copper and brass piping two inches and smaller in diameter shall be 125 SWP, bronze body brass ground joint type. Those larger than two inches in diameter shall be 150 SWP flat faced cast brass flanges conforming to ANSI Standard B16.24.
2. Where brass flanges and ferrous flanges are to be joined, ferrous flanges shall be full faced.
3. Mating of ferrous and non-ferrous flanges shall be separated with rubber gaskets (1/16 inch minimum thickness) and teflon liners installed in the bolt holes. Bolt holes shall be drilled to receive the teflon liners. Physical contact between the ferrous and non-ferrous flanges including the bolts, nuts and washers will not be permitted.
4. Unions for ferrous piping shall be of the same material as the piping to which they connect.

## 2.02 VALVES AND SUNDRIES

### A. General

1. Manufacturer: Subject to compliance with requirements, provide products from one of the manufacturers listed below.
2. Pressure and Temperature Ratings: As scheduled and required to suit system pressures and temperatures.
3. Sizes: Same size as upstream pipe, unless otherwise indicated.
4. End Connections: As indicated in the valve specifications.
  - a. Threads: Comply with ANSI B1.20.1.
  - b. Flanges: Comply with ANSI B15.1 for cast iron, ANSI B16.5 for steel, and ANSI B16.24 for bronze valves.
  - c. Solder-Joint: Comply with ANSI B16.18.
    - 1) Caution: Where soldered end connections are used, use solder having a melting point below 840 deg. F for gate, globe, and check valves; below 421 deg F for ball valves.

### B. Valves in the interior domestic water piping systems (cold water, hot water) and gas system:

1. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, Nibco, Watts, Apollo, or approved equal.
2. Ball Valves
  - a. Ball Valves, 1 Inch and Smaller: Rated for 150 psi saturated steam pressure, 400 psi WOG pressure; two piece construction; with bronze body conforming to ASTM B 62, standard (or regular) port, chrome-plated brass ball, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, and vinyl covered steel handle. Provide solder ends for domestic hot and cold water service.
  - b. Ball Valves, 1-1/4 Inch to 2 Inch: Rated for 150 psi saturated steam pressure, 400 psi WOG pressure; 3 piece construction; with bronze body conforming to ASTM B 62, conventional port, chrome-plated brass ball, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, and vinyl covered steel handle. Provide solder ends for domestic hot and cold water service.
3. Check Valves
  - a. Swing Check Valves, 2 Inch and Smaller: MSS SP-80; Class 125, cast bronze body and cap conforming to ASTM B 62; with horizontal swing, Y pattern, and bronze disc; and having threaded or solder ends. Provide valves capable of being reground while the valve remains in the line.

Provide Class 150 valves meeting the above specifications, with threaded end connections, where system pressure requires or where Class 125 valves are not available.

4. Gas Valves Interior

- a. Ball Valves: Ball valves shall be the fire-seal type, conforming to UL 842 and UL 125.
- 1) Valves shall be rated for service at not less than 200 psi at 200 degrees F.
  - 2) Valve bodies in sizes 1-inch ips and smaller shall be screwed-end type constructed of ductile iron, carbon steel, or cast steel.
  - 3) Valve bodies shall have socket weld ends or butt weld ends where indicated to be welded, and body shall be constructed of carbon steel or cast steel.
  - 4) Balls and stems shall be Type 316 corrosion-resistant steel.
  - 5) Valves shall be suitable for flow from either direction and shall seal tightly in either direction.
  - 6) Valves shall have full pipe size flow areas where indicated.
  - 7) Valve seats and seals shall be tetrafluoroethylene; seats shall have secondary corrosion-resistant steel seating surfaces to affect shutoff should resin be burned out.

2.03 HANGERS AND ACCESSORIES

A. General

1. Provide pipe stands, supports, hangers and other supporting appliances as necessary to support work required by Contract Documents. All components of the hanger support system shall comply with the standards set forth in MSS-SP58 and MSS-SP69 (Manufacturers Standardization Society) latest publication.
2. Manufacturers: Subject to compliance with requirements, provide hangers and supports of Carpenter and Patterson, Inc, ITT Grinnel Corp., Elecon Metal Products or approved equal.

B. Secure vertical piping to building construction to prevent sagging or swinging.

Quincy College

- C. Space hangers for horizontal piping as follows:

Pipe Size	Rod Diameter	Maximum Spacing
2" and larger	3/8"	6 ft.- 0"
1" and 1-1/4"	3/8"	8 ft.-0"

- D. Friction clamps shall be equal to Figures 126 and copper plated when in direct contact with copper or brass piping.
- E. Hangers for uncovered (uninsulated) copper or brass piping 2" and smaller shall be Carpenter & Patterson Figure 1ACT steel, copper plated band type.
- F. Hangers for uncovered (uninsulated) steel or cast iron piping 2" and smaller shall be Carpenter & Patterson Figure 1A steel band type.
- G. Hangers for all insulated piping shall be Carpenter & Patterson Figure 100 steel clevis type with insulation shield specified below.
- H. Where three or more pipes are running parallel to each other, factory fabricated gang type hangers with pipe saddle clips, or rollers may be used in lieu of the hereinbefore specified Clevis hangers. These hangers shall be sized to provide for insulation protectors as hereinafter specified. Pipe saddle clips shall be not less than 16 gauge metal and shall be copper when installed with uninsulated copper piping. Where pipe rollers are provided for uninsulated copper or brass piping, insulation protectors shall be provided at each set of rollers and filled with a section of heavy density fiberglass pipe covering specified hereinafter. (Refer to insulation of this specification.) Fig. 342 sized to suit loading with hanger rods and nuts.
- I. Extension type split ring hangers with wall plates shall be equal to Carpenter & Patterson Figures 81, 81-CT, 90-CT and 85, 85-CT plates for iron, steel and copper.
- J. Hanger rods for other installations shall be sized in accordance with the recommended load capacities of ASTM Specifications Designation A-107, latest amendment.
- K. Insulation protectors (shields) for horizontal piping shall be constructed of galvanized steel formed to a 180 degree arc and 12 inches long, equal to Carpenter & Patterson Figure 265P, 18 gauge type H for hangers 5 inches in size and smaller, 16 gauge for hangers larger than 5 inches in size.
- L. Exposed rods, clamps and hangers shall be electrogalvanized coated.
- M. Installation of hangers which permit wide lateral motions of any pipe will not be acceptable.
- N. "C" clamps installed with pipe hangers or equipment hangers will not be permitted unless provided with retaining straps.

## 2.04 PIPE COVERING

- A. General

---

Quincy College

1. The pipe covering specified herein for piping system shall be provided to strict accordance with the manufacturer's printed instructions, the best practice of the trade and to the full intent of this Specification.
2. Flame/Smoke Ratings: Provide complete fibrous glass pipe insulation (insulation, jackets, coverings, sealers, mastics and adhesives) with flame spread index of 25 or less, and smoke developed index of 50 or less, as tested by ASTM E 84 (NFPA 255) method.
3. Manufacturer: Subject to compliance with requirements, provide products of Armstrong World Industries, Inc., Knauf Fiber-Glass, Owens Corning or approved equal.
4. Apply insulation after systems have been tested, proved tight and approved by Designer. Remove dirt, scale, oil, rust and foreign matter prior to installation of insulation.
5. No leaks in vapor barrier or voids in insulation will be accepted.
6. Insulation and vapor barrier on piping which passes through walls or partitions shall pass continuously through sleeve, except that piping between floors and through fire walls or smoke partitions shall have space allowed for application of approved packing between sleeves and piping, to provide firestop as required by NFPA. Seal ends to provide continuous vapor barrier where insulation is interrupted.

B. Interior Cold, and Hot Water Systems:

1. 1" thickness fiberglass piping insulation:
  - a. ASTM E-547, Class I
2. Fire retardant foil face jackets for piping insulation: ASTM C-921, Type I for piping with temperatures below ambient, Type II for piping with temperatures above ambient. Type I may be used for all piping at installation option.
3. Encase piping fittings insulation with one piece premolded PVC fitting covers, fastened as per manufacturer's recommendations.
4. Encase exterior piping insulation with aluminum jacket with weatherproof construction.
5. Staples, Bands, Wires, and Cement: As recommended by insulation manufacturer for applications indicated.

## 2.05 THERMOSTATIC MIXING VALVE

- A. Thermostatic mixing valve shall be as manufactured by Lawler model 911 or approved equal.

Quincy College

**2.06 EQUIPMENT PROVIDED UNDER OTHER SECTIONS OR BY OWNER**

- A. Provide roughing and final connections for water, acid waste, acid vent and gas systems, including traps, tailpiece and strainers, valves, cocks and appurtenances furnished under other Sections or by User Agency as required. Provide valves and traps for fixtures and equipment, including work in, under and through tables, cabinets and equipment chases.
- B. Equipment may vary from that indicated. Rearrangement of equipment from Drawings may be required. Make connections to rearranged equipment as part of work of this Section. Unpack, assemble and install supply trim for fixtures and equipment furnished under other Sections or by User Agency.
- C. Roughing shall not be undertaken until Designer has approved fixture and equipment shop drawings and template is furnished by pertinent manufacturer so that connecting requirements may be verified and work installed in neat and workmanlike manner. Exact location of service connections shall be obtained prior to roughing.

**2.07 FIRE STOPPING**

- A. Work of Section JOINT SEALANTS.

**2.08 SLEEVES AND PENETRATIONS**

- A. Piping penetrations through fire rated construction shall comply with a listed fire rated assembly as detailed in the UL Fire Resistance Directory. Pipe sleeves through floors, exterior walls and fire-rated construction shall be galvanized Schedule 40 steel pipe. Pipe sleeves through non-fire-rated partitions shall be 26 gauge galvanized steel.
  - 1. Annular Space Requirements: Sleeves shall be sized to provide a total clearance of approximately 1 inch around pipe including insulation cover. Annular space around fire rated through penetrations assemblies shall be in compliance with the Listed Assembly.
  - 2. Packing between the pipe and sleeve in fire rated construction shall be a combination of listed insulation and fire-proof caulk.
- B. Where piping passes below grade beams and footings, provide a ductile iron sleeve three sizes larger than the pipe being served. Sleeve shall be a minimum of six feet in length.

**2.09 VALVE TAGS**

- A. Upon completion of piping installation work provide valve tags on all valves installed under the work of the mechanical sections. Valve tags shall be at least 1-1/2 inch diameter brass or engraved plastic with 1/4 inch high lettering for service designation over 2 inch high consecutively numbered valve identification. Engraved valve tags shall be color coded as specified for piping identification. Coordinate valve tag numbers with the User Agency's facility management program. Provide service designation prefix as scheduled:

1.	Plumbing Systems:	Prefix:
	a. Domestic Cold Water	CW
	b. Domestic Hot Water	HW
	c. Natural Gas	G
	d. Acid Waste	AW

Quincy College

- B. Valve tags on plumbing systems may be engraved laminated plastic tags color-coded to match the pipe identification marks.

## 2.10 PIPING IDENTIFICATION

- A. Piping: Provide matching flow arrows to indicate direction of flow. Markers shall be equal to Seton Setmark. Pipe marking for outside diameters of 6 inches or greater may be springs or metal bands secured to the corners at each end of the semi-rigid plastic marker to hold each end of the marker firmly against the pipe.

1. Color coding and size of legend letters shall comply with the standards of ANSI A13.1.
2. Provide markers with legend letters sized in compliance with the following schedule:

Outside Diameter (Over Insulation)	Size of Letters:	Length of Color Code:
1-1/4 inch and smaller	2 inch	8 inches
1-1/2 inch to 2 inch	3/4 inch	8 inches
2-1/2 inches to 6 inches	1-1/4 inch	12 inches

3. Plumbing Systems: Provide color-coded identification markers in compliance with the following schedule with contrasting legend letters.

Service	Identification	Color Code
Cold Water	Dom. Cold Water	Green
Hot Water	Dom. Hot Water	Green
Acid Waste	Acid Waste	Yellow
Acid Vent	Acid Vent	Yellow
Fuel Gas	Fuel Gas	Yellow

## 2.11 PLUMBING FIXTURES

- A. P1 - STAINLESS STEEL SINK (Lecture Room – ADA Compliant)  
Elkay Gourmet lustertone single bowl Model LR2521  
Arbor Classic stainless one-handle high-arc  
Pull-down, single-mount bar faucet Model # 5995CSL  
Offset tailpiece and “Truebro”, or equal, below counter insulation
- B. ES – EMERGENCY SHOWER/FACE WASH STATION  
Gaurdian Equipment Model GBF -1909 Barrier-Free  
safety station with stay-open shower valve and  
eye/face wash with stainless steel bowl and  
stay-open ball valve.
- C. WATER HEATER STORAGE TANKS  
(2) SUPERSTOR 316L stainless steel 119 gallon  
High Efficiency Domestic hot water storage tanks

---

Quincy College**PART 3 – EXECUTION****3.01 IDENTIFICATION**

- A. All equipment and each length of pipe fitting, trap, fixture, control panel, starter and device used in the systems shall have a permanently attached nameplate or be cast, stamped or indelibly marked with the manufacturer's mark or name, the weight, type and class. The nameplates shall be kept clean and readable at all times.

**3.02 CROSS CONNECTION PROTECTION AND APPROVALS**

- A. Protect potable water piping outlets and connections to equipment or machinery against backflow with an air-gap or approved backflow preventer.
- B. Prior to installation, the Contractor shall submit through the architect, a design data sheet, with plans showing the method of protecting the water system, and secure approval from the (cross connection control division) local water authority, or its designee. This shall not be done until the Contractor has secured the plumbing permit for the work from the Inspector of Plumbing, and shop drawings have been reviewed.
- C. Within 14 days after the installation, the Contractor shall notify, through the architect Project Manager, the reviewing authority to arrange inspection of the installation. Submit copies of all paperwork to the water authority and the Designer, through the architect
- D. Three copies of each application and all subsequent correspondence, including the final permit, shall be forwarded to the Designer for record. Availability of final approval or permits shall be prerequisite to scheduling a final inspection of the plumbing work.

**3.03 DISINFECTION, CLEANING AND ADJUSTING**

- A. Disinfection
  - 1. Each potable water system (cold and hot water) shall be cleaned and disinfected by this Contractor. Cleaning and disinfection shall be performed after all pipes, valves, fixtures and other components of the systems are installed, tested and ready for operation.
  - 2. All hot and cold water piping shall be thoroughly flushed with clean potable water, prior to disinfection, to remove dirt and other contaminants. Screens of faucets shall be removed before flushing and re-installed after completion of disinfection.
  - 3. Disinfection shall be done using sodium hypochlorite in the following manner:
    - a. The disinfecting agent shall be injected by a proportioning pump or device through the service cock slowly and continuously at an even rate. During disinfection, flow of disinfecting agent into main water supply is not permitted.
    - b. All sectional valves shall be opened during disinfection. All outlets shall be fully opened at least twice during injection and the residual checked with orthotolidin solution.

Quincy College

- c. When the chlorine residual concentration, calculated on the volume of water the piping will contain indicated not less than 50 ppm (parts per million) at all outlets, then all valves shall be closed and secured.
  - d. The residual chlorine shall be retained in the piping systems for a period of not less than 24 hours.
  - e. After the retention, the residual shall be not less than five parts per million. If less, then the process shall be repeated as described above.
  - f. If satisfactory, then all fixtures shall be flushed with clean potable water until residual chlorine by orthotolidin tests shall be not greater than the incoming water supply. (This may be zero.)
4. All work and certification of performance shall be performed by approved applicators or qualified personnel with chemical and laboratory experience. Certification of performance shall indicate:
- a. Name and location of the job and date when disinfection was performed.
  - b. Material used for disinfection.
  - c. Retention period of disinfectant in piping system.
  - d. PPM chlorine during retention.
  - e. PPM chlorine after flushing.
  - f. Statement that disinfection was performed as specified.
  - g. Signature and address of company or person performing disinfection.
5. Upon completion of final flushing (after retention period) the plumbing subcontractor shall obtain a minimum of one water sample from each hot and cold water line and submit samples to a State-approved laboratory. Samples shall be taken from faucets located at highest floor and furthest from meter or main water supply. The laboratory report shall show the following:
- a. Name and address of approved laboratory testing the samples.
  - b. Name and location of job and date the samples were obtained.
  - c. The coliform organism count. (An acceptable test shall show the absence of coliform organisms.)
6. If analysis does not satisfy the above minimum requirements, the disinfection procedure shall be repeated.
7. Before acceptance of the systems, this Contractor shall submit to the designer for his review, three (3) copies of Certification of Performance as specified above.
8. Under no circumstances shall this contractor permit the use of any portion of domestic water systems until properly disinfected, flushed and certified.

**B. Cleaning and Adjusting**

Quincy College

**Plumbing**

---

Quincy College

1. At the completion of the work, all parts of the installation shall be thoroughly cleaned. All equipment, pipe, valves and fittings shall be cleaned of grease, metal cuttings and sludge which may have accumulated by operation of the system for testing.
2. Any stoppage or discoloration or other damage to parts of the building, its finish, or furnishings due to the Plumbing sub-contractor's failure to properly clean the piping system shall be repaired by this Contractor at no increase in Contract costs.
3. At the completion of the work, all water systems shall be adjusted for quiet operation.
4. All automatic control devices shall be adjusted for proper operation.
5. All plumbing fixtures and exposed metal work shall be cleaned and polished. Floor drain strainers and traps shall be cleaned of all debris.
6. All items of equipment shall be thoroughly inspected. Any items dented, scratched or otherwise damaged in any manner shall be replaced or repaired and painted to match the original finish. All items so repaired and refinished shall be brought to the attention of the Designer for inspection and approval.

### 3.04 SYSTEMS

#### A. Acid Waste System

1. The Plumbing subcontractor shall be responsible for checking each pipe for alignment, center line elevation and invert elevations.
2. Branch connections to each drainage system shall be made with "Wye" and long turn "Tee Wye" fittings. Installation of short radius 1/4 bends, common off-sets, double hub fittings and saddles will not be approved. Installation of short "Tee Wye" fittings will be permitted for vertical piping only, and only where space conditions will not permit the use of long turn fittings. Only fittings conforming to the Code shall be installed.
3. The changes in direction of each drainage system shall be made with "Wye" branches and 1/8 bends. Provide long sweep bends at bottom of stacks with a vertical cleanout just above the floor at places where a "Wye" and 1/8 bends and end cleanouts cannot be installed.
4. Every fixture shall be separately trapped and the traps must be vented unless an approved battery vented system is being installed.
5. Vents shall be connected to the discharge of each trap in the sanitary system, thence carried individually to a point above the flood level of the fixture before connecting with any other vent pipes. Pitch the branch vents back to the fixture.
6. Collect individual vent pipes together in branch vent lines and connect to vent stacks. Wherever possible, vent stack offsets shall be made with 45 degree fittings. The vents passing through the roof shall be a minimum size of four inches in diameter.

---

Quincy College

7. Cleanouts shall be provided in drainage piping at changes in directions, at foot of stacks or other required points accessible for cleaning or rodding out.
  8. Cleanouts shall be of the same size as the pipe installed in up to four inches in diameter and not less than four inches in diameter for piping larger than four inches in diameter.
  9. The maximum horizontal distance between cleanouts in piping four inches in diameter and smaller shall not be more than 50 feet apart. In piping five inches in diameter and larger, cleanouts shall not be more than 100 feet apart.
- B. Cold and Hot Water Piping (Including Non-Potable Cold Water)
1. Vacuum breakers shall be installed on supplies to each piece of equipment to prevent back-siphonage.
  2. Branch lines from water service or main lines shall be taken off the top or bottom of main, using such crossover fittings as may be required by structural or installation conditions. All water service pipes, fittings, and valves shall be kept a sufficient distance from other work to permit finished covering to be not less than 1.5 inches from other work and not less than 1.5 inches between coverings on the different services.
  3. Water piping shall be run parallel and graded evenly to the drainage points. There shall be a 2 inch drain valve provided for each low point in the piping so that all parts of each water system can be drawn off.
  4. Provide suitable means of thermal expansion for the hot water piping using swing joints, expansion loops and long-turn offsets as required to suit building conditions.
  5. Piping connections to equipment shall be provided with unions or flanges to permit convenient disassembly for alterations and repairs.
  6. No piping shall be installed in a manner to permit back-siphonage or any flow of water from sanitary or drainage systems into the water systems or their distribution piping under any conditions.
  7. Air gaps, open end of funnel drains, and approved vacuum breaking devices shall be provided as specified or as indicated on the Drawings. Piping to hose-end faucets or hose-end fittings, or any fixtures where water supply outlet is below the fixture overflow rim shall have vacuum breakers.
  8. Where flanges are installed in the water systems, red rubber gaskets shall be installed between each pair of flanges.
  9. Heating or bending of copper tubing to eliminate the installation of fittings will not be permitted.
  10. Piping systems shall be kept clean during all phases of work. Open ends of incomplete piping shall be protected to prevent the entrance of foreign materials.
  11. Pipe shall be cut accurately to measurements established at the site and shall be worked into place without springing or forcing.

### C. Installation of Natural Gas Piping

1. General: Install natural gas piping as shown on the drawings in accordance with the State of Massachusetts Uniform Plumbing/Gas Code as follows:
  - a. Pack and seal spaces between pipes and sleeves passing through floors, walls, and ceilings of machine spaces, such as mechanical equipment, refrigeration, boiler, pump, fan, and machinery rooms at both ends of sleeve to provide an airtight acoustical barrier.
  - b. Unless otherwise indicated, gas piping shall be run exposed. Where concealed piping is indicated, it shall be installed in a location to permit access to the piping with a minimum amount of damage to the building.
  - c. The gas supply pipe shall be of the size indicated on the drawings.
  - d. Joints shall be made with graphite and oil or an approved graphite compound applied to the male thread only. After cutting, and before threading, pipe shall be reamed and all burrs shall be removed. Threads shall be accurately cut, and not more than three threads shall remain exposed outside each fitting after the joint has been made up. Each length of pipe shall be hammered and all scale shall be blown out before assembling. Threaded joints shall not be caulked to prevent or stop leaks.
  - e. An approved type gas cock shall be installed in the branch connection to each riser and near each appliance. Plugged or capped outlets for future extensions or connections shall be provided where noted on drawings.
  - f. Piping shall be graded not less than 1-inch in 40 feet of length to prevent trapping. The gas supply pipe from the main in the street to the meter shall grade up toward the meter. Horizontal lines from the meter to the risers shall grade down toward the risers and branches from risers to appliances shall grade up toward the risers and branches from risers to appliances shall grade up toward the appliances.
  - g. A full size tee fitting and a 6-inch long capped drip pocket shall be installed at the bottom of each riser or drop and at each low point in a horizontal gas line.
  - h. Uncovered, exposed pipes shall be provided with plates at the point where they pass through floors, finished walls, and finished ceilings. Where necessary to cover beads of fittings, special deep escutcheons shall be provided in lieu of plates. Plates shall be not less than 0.018-inch thick. Wall and ceiling plates shall be secured with round head set screws, not with spring clips. Unless otherwise specified, plates shall be of the one-piece types. Wall and ceiling plates may be flat, hinged pattern.
  - i. Connections between metallic and plastic piping shall be made only underground, exterior and with an approved transition fitting.

Quincy College

j. Special care shall be taken and additional supported provided with installing the exposed exterior gas piping located at the emergency generator.

2. Installation of Valves

a. Gas Valves: Provide and install gas valves at connection to gas train for each gas-fired equipment item; and on risers and branches where indicated on the drawings. Locate gas valves where easily accessible and where they will be protected from possible injury.

3. Equipment Connections

a. General: Connect gas piping to each gas-fired equipment item, with drip leg and shutoff gas cock. Comply with equipment manufacturer's instructions.

4. Testing

a. General: Inspect, test, and purge natural gas systems in accordance local code requirements and NFPA 54 requirements and as follows.

- 1) Visually examine natural gas system after installation.
- 2) Pressure test natural gas system with dry air or nitrogen at 100 psig for 2 hours. Soap test all joints to detect leaks.
- 3) Flush and purge natural gas system and charge with gas in accordance with local utility requirements and NFPA 54.

D. Acid Waste Pipe and Fittings

1. Fuseal II pipe and fittings shall be installed according to current Fuseal II installation instructions. (Refer to Chapter 4, Installation Instructions and Engineering Data, and include as part of specification.)

### 3.05 GENERAL INSTALLATION REQUIREMENTS

A. Piping Installation

1. Install piping approximately as shown on the drawings and as directed during installation by the Designer's representative.
2. Piping shall be installed as straight and direct as possible, forming right angles or parallel lines with building walls, other piping and be neatly spaced.
3. The horizontal runs of piping, except where concealed in partitions, shall be installed as high as possible.
4. Piping or other apparatus shall not be installed in such a manner as to interfere with the full swing of the doors and access to other equipment.
5. The arrangement, positions and connections of pipes, fixtures, drains, valves, and the like, indicated on the Drawings shall be followed as closely as possible.

---

Quincy College

6. It shall be possible to drain the water from all sections of each cold and hot water piping system. Pitch piping back to drain valves.
7. Small fittings shall be taper thread. Lampwick, cord, wool or any other similar material shall not be used to make up thread joints.
8. Screwed pipe and copper tubing shall be reamed smooth before installation.
9. All exposed piping in connection with fixtures shall be chrome plated. Where chrome-plated piping is installed, cut and thread pipe so that no unplated pipe threads are visible when work is completed.
10. Reducing fittings, unless otherwise approved in special cases, shall be provided in making reduction in size of pipe. Bushings will not be allowed unless specifically approved.
11. Remove and replace with new materials, any copper or brass piping (chrome-plated or unplated) showing visible tool marks.
12. Vertical risers shall be firmly supported by riser clamps, properly installed to relieve all weight from the fittings.
13. Any piece of pipe six inches or less in length shall be considered as a nipple.
14. All water service piping shall be kept a sufficient distance from other work to permit finished covering to be not less than 1.5 inches from other work and not less than 1.5 inches between the coverings (insulation) on the different services.

**B. Hanger Installation**

1. All piping shall be supported from the building structure by means of approved hangers and supports, to maintain proper grading and pitching of lines, to prevent vibration and to secure piping in place, and shall be so arranged as to provide for expansion and contraction.
  - a. Maximum spacing of hangers on soil pipe shall be five feet and hangers shall be provided at all changes in direction. Vertical hanger rods to support piping from the structure or supplementary steel shall not exceed four feet in total length. Where pipe support assemblies exceed four feet in total length vertically, this Contractor shall provide factory fabricated channels and all associated accessories.
  - b. Friction clamps shall be installed at the base of the plumbing risers and at each floor (above or below floor slabs). Friction clamps installed above floor slabs shall not be supported from or rest on floor sleeves.
  - c. Provide hangers at a maximum distance of two feet from all changes in direction (horizontal and vertical) and on both sides of concentrated loads independent of the piping.
  - d. Hangers, in general, for all horizontal piping shall be Clevis type hangers. These hangers shall be sized to fit the outside diameter of the pipe insulation and insulation protectors (sheet metal shields) specified herein. For sprinkler/stand-pipe systems, hanger shall be approved black malleable iron, heavy duty pattern having two (2) parts bolted together.

- e. All vertical drops and runouts including insulated pipes shall be supported by split ring hangers with extension rods and wall plates. These hangers shall be copper-plated when used on uncovered copper tubing. Supports on insulated vertical piping shall be sized to fit the outside diameter of the pipe insulation with 360 degrees insulation protector.
- f. Provide on each horizontal insulated lines, pipe covering protectors (shields) at each hanger. Each protector shall be sized to fit the outside diameter of the pipe insulation.
- g. Retaining straps shall be provided with all beam clamps.
- h. All supplementary steel, including factory fabricated channels, associated accessories, and 12 inch long sheetmetal shields, throughout the project for this Section of the Specifications, both suspended and floor mounted, shall be provided by this Contractor and shall be subject to the approval of the Engineer.
- i. Hangers shall not pierce the insulation on any insulated pipe.
- j. Wire, tape or wood fastenings for shims or support of any pipe or tubing shall not be used.
- k. Remove all rust from the ferrous hanger equipment (hangers, rods, and bolts) and apply one coat bitumastic paint immediately after erection.
- l. Piping at all equipment and each control valve shall be supported to prevent strains or distortions in the connected equipment and control valves. Piping at equipment shall be supported to allow for removal of equipment, valves and accessories with a minimum of dismantling and without requiring additional support after these items are removed.
- m. All piping shall be independently supported from the building structure and not from the piping, ductwork, conduit or ceiling suspension systems of other systems.
- n. Installation of hangers which permit wide lateral motions of any pipe will not be acceptable.
- o. "C" clamps installed with pipe hangers or equipment hangers will not be permitted unless provided with retaining straps.

C. Pipe Covering Installation

- 1. Before pipe covering is applied, all pressure tests shall have been performed and approved by the Local Plumbing Inspector.
- 2. Pipe covering shall be applied over clean, dry surfaces.
- 3. Pipe covering shall be continuous and shall be carefully fitted with side and end joints butted firmly and tightly together and finished as specified herein.
- 4. Pipe covering and auxiliaries shall be kept dry during storage and application.

---

Quincy College

5. Adhesives, cements and coatings shall not be applied when the ambient temperature is below 40 degrees Fahrenheit.
6. Valve bodies shall have covering applied up to the stem.
7. It is the intent of this Specification that all vapor barriers be sealed and be continuous throughout. Staples shall not be used on vapor barrier jackets.
8. Where pipe covering ends occur at equipment or fixtures, end caps on the covering shall be provided.
9. Adequate operating clearances shall be provided at control mechanisms.
10. Pipe covering for flanges shall overlap the adjoining pipe by a minimum of three inches on each side.
11. Pipe covering shall be provided on all piping passing through ceilings and through the interior above ground sleeves (wall and floor).
12. All voids and seams in insulation shall be filled with insulating cement and finished as specified herein.
13. End joints of each section of the installed pipe covering shall be tightly butted.

D. Installation of Sleeves, Inserts and Escutcheons

1. Sleeves in floors shall be set one (1) inch above the finished floor surface or as indicated on the Architectural Drawings.
2. Sleeves through interior masonry or non-masonry walls or partitions shall be set flush with the finished surfaces of the wall or partition.
3. Field drilling for inserts required for work under this Section of the Specifications shall be provided by this Contractor.
4. Each interior wall or partition sleeve shall be packed with foam or glass wool to within one inch of each face of wall, and the remaining portion of each end of sleeve to be sealed with U.L. listed fire proof caulking compound equal to the rating of the partition.
5. Escutcheons shall be installed around all exposed insulated or bare pipe, except water closet starts or bends passing through a finished floor, wall or ceiling. Escutcheons shall fit snugly around the bare pipe or insulated pipe.

E. Valve Installation

1. Location of Valves: There shall be valves where indicated on the drawings and where specified as follows:
  - a. At branches to groups of fixtures, branches to separate fixtures, equipment, connections to other systems and sectionalizing points in each system.
  - b. Each fixture supply shall have a separate angle stop or straight stop finished like the pipe it services.

- c. Each piece of equipment shall have isolation valves for each service connected.
- d. At the low points of each water system including trapped sections, provide a tee with 2 inch branch and valve with 3/4 inch hose end adapter and attached chain with cap.
- e. Valves shall be located to permit easy operation, replacement or repair.

### 3.06 INSPECTION AND TESTS

#### A. General

1. All labor, materials, instruments, devices and power required for testing shall be provided by the Plumbing Subcontractor. The tests shall be performed in the presence and to the satisfaction of the Designer and such other parties as may have legal jurisdiction. No piping in any location shall be closed up, furred in, or covered before testing and approval by the Local Plumbing Inspector.
2. Where portions of piping systems are to be covered or concealed before completion of the project, those portions shall be tested separately in the manner specified herein for the respective entire system.
3. Any piping or equipment that has been left unprotected and subject to mechanical or other injury in the opinion of the designer shall be retested in part or in whole as directed.
4. The school retains the right to request a recheck or resetting of any pump or instrument by the Plumbing Subcontractor during the guarantee period at no additional cost to the Contract.
5. Repair, or if directed by Designer, replace any defective work with new work without extra cost to the school. Repeat tests as directed, until the work is proven to meet the requirements specified herein.
6. Restore to its finished condition any work, provided by other Contractors, damaged or disturbed by tests. The Plumbing Subcontractor shall engage the original Contractor to do the work of restoration to the damaged or disturbed work.
7. After the fixtures are set and connected, and the piping systems to same have been tested, the Plumbing Subcontractor shall turn water on to the fixtures, equipment, fill the traps, etc., and the proper operation of all items shall be demonstrated by him in the presence of and to the satisfaction of the Designer, Plumbing Inspector, or their designated representative.
8. Caulking of screwed joints or holes in piping will not be acceptable.
9. The Plumbing Subcontractor shall notify the Designer and all inspectors having jurisdiction, a minimum of 48 hours in advance of making any required tests so that arrangements may be made for their presence to witness scheduled tests.

#### B. Specific

Quincy College

1. Cold and Hot Water Piping System:
  - a. Upon completion of the roughing-in and before setting fixtures and final connections to all equipment, all water piping systems shall be tested to a hydrostatic pressure of 150 pounds per square inch.
  - b. Each systems test shall be maintained for eight hours without a drop in pressure. These tests shall be witnessed by the Local Plumbing Inspector.
  - c. After testing, provide complete adjustment of all parts of each water system until design distribution or balancing is obtained throughout.

### 3.07 COMMISSIONING OF EQUIPMENT AND SYSTEMS

- A. The Designer will check the completed installation either sequentially as different parts are completed, or when the entire installation is complete, at the sole option of the Designer.
- B. Prior to the Designer's checking a part of the installation or the entire installation, this contractor shall submit a letter signed by an officer of this contracting company or an officer of the general contractor stating that:
  1. he is a an officer of the company,
  2. he has personally inspected the installation to be checked,
  3. the date of his inspection,
  4. the installation is complete and tested and ready to be inspected by the Designer, and that all required test reports have been submitted.
- C. This contractor shall arrange that an officer of the general contractor, in addition to other test witnesses that may be specified, shall witness the below listed tests. At the conclusion of each such test this contractor shall submit a letter signed by the officer stating that:
  1. he is an officer of the company,
  2. he has personally witnessed the test (give the name of the test),
  3. the date of testing,
  4. the results of testing, as compared to specified performance,
  5. listing the name, title, and company affiliation of all those witnessing the test.

### 3.08 SPECIAL RESPONSIBILITIES

- A. Coordination: Cooperate and coordinate with work of other Sections in executing work of this Section.
  1. Perform work such that progress of entire project including work of other Sections shall not be interfered with or delayed.
  2. Provide information as requested on items furnished under this Section which shall be installed under other Sections.
  3. Obtain detailed installation information from manufacturers of equipment provided under this Section.

---

Quincy College

4. Obtain final roughing dimensions or other information as needed for complete installation of items furnished under other Sections or by User Agency.
5. Keep fully informed as to shape, size and position of openings required for material or equipment to be provided under this and other Sections. Give full information so that openings required by work of this Section may be coordinated with other work and other openings and may be provided for in advance. In case of failure to provide sufficient information in proper time, provide cutting and patching or have same done, at own expense and to full satisfaction of Designer.
6. Notify Designer of location and extent of existing piping, ductwork and equipment that interferes with new construction. In coordination with and with approval of Designer, relocate piping, ductwork and equipment to permit new work to be provided as required by Contract Documents. Remove non-functioning and abandoned piping, ductwork and equipment as directed by Designer. Dispose of or store items as requested by Designer.

**B. Installation Only Items**

1. Where this contractor is required to install items which it does not purchase, it shall coordinate their delivery and be responsible for their unloading from delivery vehicles and for their safe handling and field storage up to the time of installation. This trade shall be responsible for:
  - a. Any necessary field assembly and internal connections, as well as mounting in place of the items, including the purchase and installation of all dunnage, supporting members and fastenings necessary to adapt them to architectural and structural conditions.
  - b. Their connection to building systems including the purchase and installation of all terminating fittings necessary to adapt and connect them to the building systems.
2. This Contractor shall carefully examine such items upon delivery. Claims that any of these items have been received in such condition that their installation will require procedures beyond the reasonable scope of work of this contractor will be considered only if presented in writing within one week of their date of delivery. Unless such claims have been submitted this contractor shall be fully responsible for the complete reconditioning or replacement of the damaged items.

**C. Maintenance of equipment and systems:** Maintain HVAC, Plumbing and Fire Protection equipment and systems until Final Acceptance. Ensure adequate protection of equipment and material during delivery, storage, installation and shutdown and during delays pending final test of systems and equipment because of seasonal conditions. Do not use boilers before providing water treatment where required; this includes use of boilers for temporary heat or for testing.

**D. Use of premises:** Use of premises shall be restricted as directed by Designer and as required below.

1. Remove and dispose of dirt and debris, and keep premises reasonably clean. Upon completion of work, remove equipment and unused material. Put building and premises in neat and clean condition, and do cleaning and washing required to provide acceptable appearance and operation of equipment, to satisfaction of Designer and as specified under CLEANING paragraph.

---

Quincy College

2. It shall be this trade's responsibility to store his materials in a manner that will maintain an orderly clean appearance. If stored on-site in open or unprotected areas, all equipment and material shall be kept off the ground by means of pallets or racks, and covered with tarpaulins.
3. Do not interfere with function of existing sewers and water and gas mains. Extreme care shall be observed to prevent debris from entering ductwork. Confer with Designer as to disruption of heating services or other utilities due to testing or connection of new work to existing. Interruption of heating services shall be performed at time of day or night deemed by Designer to provide minimal interference with normal operation. Obtain Designer's approval of the method proposed for minimizing service interruption.

E. Surveys and measurements:

1. Base measurements, both horizontal and vertical, on reference points established by Contractor and be responsible for correct laying out of work.
2. In event of discrepancy between actual measurements and those indicated, notify Designer in writing and do not proceed with work until written instructions have been issued by Designer.

### 3.09 MATERIALS AND WORKMANSHIP

- A. Work shall be neat and rectilinear. Piping shall run concealed. Install material and equipment as required by manufacturers. Installation shall operate safely and without leakage, undue wear, noise, vibration, corrosion or water hammer. Work shall be properly and effectively protected, and pipe openings shall be temporarily closed to prevent obstruction and damage before completion.
- B. Except as specified otherwise, material and equipment shall be new. Provide supplies, appliances and connections necessary for complete and operational installation. Provide components required or recommended by OSHA and applicable NFPA documents.
- C. References to manufacturers and to catalog designation, are intended to establish standards of quality for materials and performance but imply no further limitation of competitive bidding.
- D. Finish of materials, components and equipment shall be as approved by Designer and shall be resistant to corrosion and weather as necessary.

### 3.10 ANCHORS AND INSERTS

- A. Inserts shall be iron or steel of type to receive machine bolt head or nut after installation. Inserts shall permit adjustment of bolt in one horizontal direction and shall develop strength of bolt when installed in properly cured concrete.
- B. Provide anchors as necessary for attachment of equipment supports and hangars.
- C. Piping
  1. Furnish pipe cleaning chemicals, chemical feed equipment, materials and labor necessary to clean piping.

---

Quincy College

2. Permanently install necessary chemical injection fittings complete with stop valves.
  3. After chilled water, heating hot water, condenser water, steam and condensate piping have been pressure tested and approved for tightness, clean and flush piping specified under WATER TREATMENT Paragraph.
  4. Maintain continuous blow down and make-up, as required during flushing operation.
- D. Equipment
1. After completion of project, clean the exterior surface of equipment included in this section, including concrete residue.

### 3.11 SYSTEM SHUTDOWNS

- A. Coordination shutdowns of existing systems with the school and submit a written request at least ten working days in advance. Minimize system shut downs as much as possible. Submit a list of all effected areas, the proposed work to be performed, and the expected length of the shut-down including time for retesting.
- B. Provide temporary services to maintain active system during extended shut-downs as required for demolition and construction phasing.

### 3.12 CORE DRILLING

- A. Do not core new concrete structure without written approval from the architect.
- B. Perform all core drilling required for the proper installation of this Section. Locate all required openings and prior to coring. Coordinate the opening with the other Trades and obtain approval from the architect.
- C. Thoroughly investigate the existing conditions in the vicinity of the required opening prior to cutting. Take care so as not to disturb the existing building systems. Damage to existing conditions incurred during core drilling shall be corrected to the architect and designer's satisfaction with no additional expense to the school.

END OF SECTION

**SECTION 23000****HEATING, VENTILATING AND AIR CONDITIONING****PART 1 - GENERAL****1.01 GENERAL PROVISIONS**

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of Specifications.

**1.02 DESCRIPTION OF WORK**

- A. Work in this Section includes all labor, materials, equipment and services necessary to furnish completely and install all HVAC SYSTEMS, as indicated on the Drawings and specified herein, and in general as follows:
1. Furnish and install supply and return distribution ductwork and ductwork insulation, air terminal devices and connect to the existing rooftop units.
  2. HVAC contractor shall clean existing supply ductwork, return ductwork and existing rooftop unit on the floor of the proposed work.
  3. Furnish and install a complete electric temperature control zone damper system to provide automatic operation of the HVAC System. Contractor shall be responsible for investigating and attaining existing system information.
  4. Balancing of all air systems on this floor of the proposed work.
  5. Furnish operating instructions and maintenance manuals.
  6. Record Drawings of the actual HVAC equipment installation.
  7. The work to be performed as shown on Drawings M-1

**1.03 RELATED WORK**

- A. The related work shall be performed by the designated trades and under the respective sections. Coordinate closely with other trades and respective specification sections.
- B. Examine all other SECTIONS of the specifications and all drawings for the relationship of the work under this section and the work of other trades. Cooperate with all trades and coordinate all work under the sections of these specifications: Painting, Cutting, Patching and Electrical Work.

**1.04 CODES, PERMITS AND INSPECTIONS**

- A. All work shall meet or exceed the latest requirements of all national, state, county, municipal and other authorities including Awarding Authority's Insurance Company exercising jurisdiction over construction work at the project.
- B. All HVAC permits and fees to local municipalities shall be provided by the HVAC Subcontractor.
- C. The HVAC Subcontractor shall be given the proper authorities, all required notices or information relating to work on his charge, pay all fees and obtain all official licenses, permits and certificates prior to installation prior to commencing any installation.

**1.05 INDUSTRY STANDARDS, CODES, REFERENCES**

- A. In these specifications, references made to the following industry standards and Code bodies are intended to indicate the latest volume or publication of the Standard. All equipment, materials and details of installation shall comply with the requirements and latest revisions of the following:
  - 1. **AMAC** Air Moving and Conditioning Association
  - 2. **ASHRAE** American Society of Heating, Refrigeration and Air Conditions Engineers
  - 3. **NFPA** National Fire Protection Association
  - 4. **OSHA** Occupational Safety and Health Act
  - 5. **SMACNA** Sheet Metal and Air Conditioning Contractor's National Association
  - 6. **UL** Underwriter's Laboratories
  - 7. **EPA** Environmental Protection Agency
  - 8. **NEC** National Electric Code
  - 9. **NEMA** National Electrical Manufacturers Association

**1.06 GUARANTEE**

- A. Guarantee for all work provided under this Section shall be specified in the GENERAL CONDITIONS and the SUPPLEMENTARY GENERAL CONDITIONS.
- B. HVAC Subcontractor shall leave entire HVAC system in proper working order and shall replace any work, material or equipment provided by him under this contract which develops defects, except for ordinary wear and tear, within one year from the date of final certificate of approval and acceptance by the Owner, without additional expense to the Owner.

**1.07 SHOP DRAWINGS**

- A. Before ordering any material shipped to the job, this Contractor shall submit to the Architect for approval, shop drawings in quintuplet of the following items:
1. Electric unit heaters and electric baseboard heaters.
  2. Gas Fired Unit Heaters
  3. Air distribution devices and air terminal devices.
  4. All fans.
  5. Insulation
  6. Controls
  7. Any other sample or shop drawing requested by the Architect.

**1.08 OWNER'S MANUAL**

- A. Furnish three sets of manuals, in bound form, containing data covering capacities, maintenance of operation of all equipment and apparatus. Operating instructions shall cover all phases of control.

**1.09 REMOVAL OF DEBRIS**

- A. This Subcontractor shall remove from site each day all accumulated rubbish and debris resulting from this operation.

**1.10 INTENT**

- A. The contract drawings indicate the intent, extent and general arrangement of the work. Small details not usually shown or specified but which are necessary to the proper installation and functioning of the work shall be included by the Subcontractor without additional cost to the Owner. Equipment shall be installed in accordance with the recommendation of the manufacturer and the best standard practice for the type of work.

**1.11 SITE VISIT**

- A. The Contractor shall visit the site and familiarize with the existing job conditions.

Quincy College

**PART 2 - PRODUCTS****2.01 SHEET METAL WORK**

- A. Furnish and install, in an approved manner, all sheet metal work that is indicated on the Drawings, or that is specified or required for the systems of supply, return and exhaust air distribution. All sheet metal work shall be manufactured and erected in a first-class and workmanlike manner, in accordance with the recommendations and requirements as set forth in the latest Duct Construction Standards, published by Sheet Metal and Air-Conditioning Contractors' National Association, Inc. (SMACNA) and shall be approved, shall be true to the dimensions indicated on the Plans and shall be straight and smooth on the inside, with neatly finished joints. The ducts shall be securely anchored to the building construction in an approved manner, and shall be so installed as to be completely free from vibration under all conditions of operation. All ducts shall be supported in accordance with requirements and recommendations of the SMACNA Duct Manuals. Ductwork shall be fitted with splitter dampers, volume dampers, adjustable air scoops and airfoil turning vanes to allow complete balancing and to provide the least resistance to airflow.
- B. Unless otherwise specified, all low velocity ducts shall be of the best bloom galvanized steel of U.S. Standard gauges specified herein and shall be stiffened by cross-breaking and by use of galvanized rolled steel angles, as specified herein:

<u>Rectangular Sizes</u>	<u>Gauge Numbers</u>	<u>Stiffeners</u>	<u>Stiffener Center Spacing</u>	<u>Support Center Spacing</u>
Up to 12"	26	Flat seam	Cross Break	96"
13" to 30"	24	Standing seams	48"	72"

- C. All duct sizes shown on the Drawings are clear inside dimensions.

**2.02 FLEXIBLE CONNECTIONS**

- A. The inlet and outlet of each fan shall be connected to the ductwork with a flexible connection. Flexible connections shall be secured to inlets and outlets with metal bands held in place with rivets or sheet metal screws. A minimum four-inch (4") space shall be maintained between duct and fan connection and the flexible connection shall be made of heavy reinforced canvas, as manufactured by Bauer and Black Company, Iden. Associates, Duro-Dyne Corporation, or approved equal.

**2.03 INSULATION APPLICATION REQUIREMENTS**

- A. Furnish and install covering and insulation, of the type hereinafter specified, on the following sheet metal ducts and equipment.
- B. All sealers, solvents, tapes, adhesives and mastics used in conjunction with the installation of all insulation specified under this section of the Specifications shall possess the maximum possible fire-safe qualities available and shall be of a type as approved under NFPA #90A and #90B Standards.
- C. Insulation shall be applied in a workmanlike manner so as to provide a neat and smooth surface suitable for painting. Work that is poorly done, or done in a manner not conforming to the Specifications and/or Drawings shall be repaired or replaced as directed by the Architect.

---

Quincy College

- D. Insulation shall not be applied to ductwork and related equipment until the systems have been proven tight or pressure tested.
- E. Sections of ductwork and equipment may be covered as the work progresses, provided the preceding requirements have been met for pressure testing and tightness.
- F. All ductwork, piping, and equipment to be covered shall be clean and dry prior to application of insulation.
- G. Insulation shall not be applied when ambient temperatures within the spaces are below 40°F.
- H. Insulation shall be carried full thickness through all floor and wall sleeves.
- I. All insulation shall be applied with edges tightly butted.
- J. All exposed ends on pipe insulation shall be sealed to make a complete vapor-tight installation.
- K. Equipment nameplates, labels and equipment access doors shall be left exposed.

#### 2.04 INSULATION MATERIALS

- A. All insulation materials to be furnished for installation under this section shall be as manufactured by Owens-Corning Fiberglass Corporation, Johns-Manville, Gustin-Bacon or approved equal.
- B. Shop Drawings shall be submitted for all insulation system materials to be furnished for installation under this section of the Specifications. Submittals shall include a description of the application of all materials to be used for each type of insulation and catalog cuts of all materials furnished.
- C. All ductwork and equipment shall be insulated, as specified, and as indicated on the Drawings.

##### 1. Ductwork Insulation [concealed]

All supply and return ductwork and plenums shall be insulated on the outside with two-inch thick flexible glass fiber blanket, Owens-Corning Fiberglass all service faced [Type 75] duct wrap, or approved equal. K-Factor shall not exceed 0.26 at 75°F ambient temperatures. Insulation shall be furnished with a factory applied soil-scrim-Kraft facing consisting of aluminum foil reinforced with fiberglass yarn mesh and laminated to 32 pounds chemically treated, fire resistant Kraft.

##### 2. Ductwork [exposed]

All fresh air ductwork and plenums shall be insulated on the outside with Owens Corning type 705 rigid board insulation, 1" thick, factory applied FRK-25 foil-reinforced Kraft vapor retarders, minimum insulation R-value shall be 5.0.

##### 4. Insulation shall be omitted from exhaust ductwork.

#### 2.05 BALANCING

Quincy College

- A. The final adjustment of all air systems shall be accomplished by an independent Balancing Sub-Contractor. The Balancing Sub-Contractor shall be knowledgeable of all types of low velocity air system.

The Balancing Sub-Contractor shall cooperate with the control manufacturer's representative in setting adjustment of automatically operated dampers, to operate as specified. The Balancing Sub-Contractor shall inspect all ductwork prior to closing-in to verify to his satisfaction that all fittings, dampers and balancing devices are properly fabricated and installed as specified, and that he will be able to properly balance the systems. All work performed shall be done in full accordance with minimum standards as set forth by the Associated Air Balance Council, N.S.F.M.I., Volume One, No. 81266.

- B. As part of the work of this Contract, the Balancing Sub-Contractor shall make any changes in the pulleys, belts and dampers or the addition of dampers as required for correct balance, at no additional cost to the Owner.

The Balancing Sub-Contractor shall furnish to the Designer for approval, four [4] copies of the test data showing the results of the various test requirements specified hereinafter.

- C. Test and adjust each air device to within ten percent [10%] of design requirements.
- D. Size, type, manufacturer of diffusers, grilles, registers and all tested equipment shall be identified and listed. Manufacturer's ratings on all equipment shall be used to make required calculations.
- E. Readings and tests of diffusers, grilles and registers shall include required FPM velocity and test resultant velocity, required CFM and test resultant CFM after adjustments.
- F. It shall be the responsibility of the Balancing Sub-Contractor to secure fan and any other equipment data he may require on the HVAC equipment in order for him to complete the balancing as specified herein.

## 2.06 AUTOMATIC TEMPERATURE CONTROL

### A. GENERAL:

1. Furnish and install, as hereinafter specified, a complete electric/electronic temperature control system.
2. The control system shall be installed by competent control electricians regularly employed by the manufacturer of the product equipment. All control equipment shall be the product of one manufacturer.

### B. SCOPE:

1. The control system shall consist of all thermostats, temperature transmitters, controllers, automatic valves, control panels, and other accessory equipment along with a complete system of electrical wiring to fill the intent of the specification and provide for a complete and operable system. All control equipment shall be fully proportioning, except as noted otherwise.

### C. ELECTRIC WIRING:

---

Quincy College

1. All electric wiring and wiring connections required for the installation of the temperature control system, as herein specified, shall be provided by the temperature control contractor.

D. SEQUENCE OF OPERATION:

1. Roof Top Unit

- a. The roof top unit manufacturer will furnish thermostat, electronic damper and related devices. ATC Subcontractor shall wire the devices.

2.07 FIRE DAMPER

- A. Furnish and install, where indicated on the Drawings and where required by NFPA and all governing regulations, approved fusible link fire dampers.
- B. Fire dampers shall be factory fabricated of 16 gauge galvanized steel and shall have interlocking blades that fold out of the air stream, stainless steel bearings, 160<sup>o</sup>F. UL listed fusible line and unless otherwise noted, 1 ½ hour UL Fire Damper Label. The UL Label shall apply to the entire fire damper assembly for dynamic flow.
- C. Each fire damper shall have an air duct access door. Access doors shall be factory fabricated and shall be airtight when in the "Closed" position.
- D. Fire dampers and access doors shall be manufactured by Ruskin Manufacturing Company, Vent Products Company, Inc., Titus Manufacturing Corporation or approved equal. Fire dampers shall be installed in accordance with NFPA requirements.

2.08 REGISTERS, GRILLES AND DIFFUSERS

- A. Registers, grilles and diffusers shall be of a model, size, capacity and type scheduled on the Drawings. Equipment shall be as manufactured by Krueger, Titus, Metal-Aire, Carnes. Refer to tenants prototype drawings and specifications.
- B. All registers and diffusers shall be furnished with individually adjustable volume control dampers.
- C. Diffusers, registers and grilles for installation in gypsum ceiling or walls shall be provided with sponge rubber frame gaskets and Phillips head screws for attachment of the device frame to the building construction.
- D. Diffusers shall be square or rectangular, of the jet-induction, air-mixing type. Diffusers shall be assembled in combinations of lower sections arranged to discharge air from each side in quantities proportioned to the areas served. Diffuser louvers and frames shall be securely fastened to prevent tampering or alternation of elements.
- E. All registers, grilles and diffusers shall be of aluminum or steel construction. The finish shall be factory-applied paint. The color shall be a manufacturer's standard; color shall be selected by the Architect.

Quincy College

- F. Shop drawings shall be submitted on all registers, grilles and diffusers to be furnished showing model number, size, blow, room locations and accessories. Furnish two [2] color charts with shop drawings.

## 2.09 COMPUTER DAMPER SYSTEM

### A. Variable Volume/Variable Temperature [VVT] System Control

The Monitor-Stat shall perform the following functions of coordinating VVT system operation.

**COMMUNICATION:** The Monitor-Stat, all zone thermostats and a bypass system [if applicable] shall interface to a 3-wire Communication Bus. The Monitor-Stat shall communicate with each zone thermostat no less than once every 30 seconds to collect zone demand information from each zone thermostat.

The Monitor-Stat shall be capable of communication with up to all zone thermostats.

**ZONE DEMAND:** The Monitor-Stat shall access demand for heating or cooling from each zone thermostat and use this information to control the H/C unit based on demand at each zone.

When room temperature at any zone thermostat is determined to be 1.5°F below the zone heating set point, the thermostat shall be considered a caller for heating.

### B. Control of Zone Thermostat Mode

When the Monitor-Stat controls heating or cooling, it shall control each zone thermostat in the selected mode.

### C. Auto/Manual Heating and Cooling Changeover

The Monitor-Stat shall be field adjusted for automatic changeover or manual changeover between modes.

### D. Fan Operation

The Monitor-Stat shall be field adjustable for either continuous fan operation or fan operation that is intermittent only with a heating or cooling cycle.

Fan operation shall always be intermittent during setback periods.

### E. Control of H/C Unit

The Monitor-Stat shall interface to the H/C unit through a Carrier/Parker Relay-Pack which interfaces to the Zone Damper controlled by the Monitor-Stat. The Monitor-Stat shall be capable of controlling up to 2 stages cooling, 2 stages heating, fan and reversing valve. Two-way control valve at radiation, control valve at air handling unit and outdoor condensing unit shall be controlled through the system.

The dry contacts shall be rated for 1 amp at 24 vac.

### F. System Type

The Monitor-Stat shall maintain operational heating and cooling supply air temperature limits. The supply air temperature limits shall be field adjustable at the Monitor-Stat for either heat pump or gas/electric equipment.

### Quincy College G. Time Guard

The Monitor-Stat shall maintain a 5 minute Time Guard for each of the two stages of heat and two stages of cooling. The Time Guard shall delay the stage from being energized for 5 minutes upon initial power up and at the completion of each heating and cooling cycle.

### H. System Set Point Lock

## 2.10 Cleaning of existing ductwork.

The Contractor shall be responsible for the removal of visible surface contaminants and deposits from within the HVAC system in strict accordance with these specifications. The HVAC system includes any interior surface of the facility's air distribution system for conditioned spaces and/or occupied zones. This includes the entire heating, air-conditioning and ventilation system from the points where the air enters the system to the points where the air is discharged from the system. The return air grilles, return air ducts to the air handling unit (AHU), or Rooftop Unit (RTU) the interior surfaces of the AHU, mixing box, coil compartment, condensate drain pans, humidifiers and dehumidifiers, supply air ducts, fans, fan housing, fan blades, turning vanes, filters, intake and exhaust louvers and supply diffusers are all considered part of the HVAC system. The HVAC system shall also include toilet exhaust systems and associated exhaust fans.

### 1. General HVAC System Cleaning Requirements

(A) Containment: Debris removed during cleaning shall be collected and precautions must be taken to ensure that Debris is not otherwise dispersed outside the HVAC system during the cleaning process.

(B) Particulate Collection: Where the Particulate Collection Equipment is exhausting inside the building, HEPA filtration with 99.97% collection efficiency for 0.3-micron size (or greater) particles shall be used. When the Particulate Collection Equipment is exhausting outside the building, Mechanical Cleaning operations shall be undertaken only with Particulate Collection Equipment in place, including adequate filtration to contain Debris removed from the HVAC system. When the Particulate Collection Equipment is exhausting outside the building, precautions shall be taken to locate the equipment down wind and away from all air intakes and other points of entry into the building.

(C) Controlling Odors: Measures shall be employed to control odors and/or mist vapors during the cleaning process.

(D) Component Cleaning: Cleaning methods shall be employed such that all HVAC system components must be Visibly Clean as defined in applicable standards. Upon completion, all components must be returned to those settings recorded just prior to cleaning operations.

(E) Air-Volume Control Devices: Dampers and any air-directional mechanical devices inside the HVAC system must have their position marked prior to cleaning and, upon completion, must be restored to their marked position.

(F) Service Openings: The contractor shall utilize service openings, as required for proper cleaning, at various points of the HVAC system for physical and mechanical entry, and inspection.

1. Contractor shall utilize the existing service openings already installed in the HVAC system where possible.
2. Other openings shall be created where needed and they must be created so they can be sealed in accordance with industry codes and standards.
3. Closures must not significantly hinder, restrict, or alter the airflow within the system.
4. Closures must be properly insulated to prevent heat loss/gain or condensation on surfaces within the system.
5. Openings must not compromise the structural integrity of the system.

6. Construction techniques used in the creation of openings should conform to requirements of applicable building and fire codes, and applicable NFPA, SMACNA and NADCA Standards.

7. Cutting service openings into flexible duct is not permitted. Flexible duct shall be disconnected at the ends as needed for proper cleaning and inspection.

8. All service openings capable of being re-opened for future inspection or remediation shall be clearly marked and shall have their location marked on construction record set of drawings.

(G) Ceiling sections (tile): The contractor may remove and reinstall ceiling sections to gain access to HVAC systems during the cleaning process.

(H) Air distribution devices (registers, grilles & diffusers): The contractor shall clean all air distribution devices.

(I) Air handling units, Rooftop units and exhaust fans: The contractor shall insure that supply, return, and exhaust fans and blowers are thoroughly cleaned. Areas to be cleaned include blowers, fan housings, fan blades, or vanes, shafts, baffles, dampers and drive assemblies. All visible surface contamination deposits shall be removed in accordance with NADCA Standards. Contractor shall:

1. Clean all air handling units (AHU) and Rooftop units (RTU) internal surfaces, components and condensate collectors and drains.
2. Assure that a suitable operative drainage system is in place prior to beginning wash down procedures.
3. Clean all coils and related components, including evaporator fins.

(J) Duct Systems. Contractor shall:

1. Create service openings in the system as necessary in order to accommodate cleaning of otherwise inaccessible areas.
2. Mechanically clean all duct systems to remove all visible contaminants, such that the systems are capable of passing Cleaning Verification Tests.

## 2. Health and Safety

(A) Safety Standards: Cleaning contractors shall comply with applicable federal, state, and local requirements for protecting the safety of the contractor's employees, building occupants, and the environment. In particular, all applicable standards of the Occupational Safety and Health Administration (OSHA) shall be followed when working in accordance with this specification.

(B) Occupant Safety: No processes or materials shall be employed in such a manner that they will introduce additional hazards into occupied spaces.

(C) Disposal of Debris: All Debris removed from the HVAC System shall be disposed of in accordance with applicable federal, state and local requirements.

## 3. Mechanical Cleaning Methodology

(A) Source Removal Cleaning Methods: The HVAC system shall be cleaned using Source Removal mechanical cleaning methods designed to extract contaminants from within the HVAC system and safely remove contaminants from the facility. It is the contractor's responsibility to select Source Removal methods that will render the HVAC system Visibly Clean and capable of passing cleaning verification methods (See applicable NADCA Standards) and other specified tests, in accordance with all general requirements. No cleaning method, or combination of methods, shall be used which could potentially damage components of the HVAC system or negatively alter the integrity of the system.

1. All methods used shall incorporate the use of vacuum collection devices that are operated continuously during cleaning. A vacuum device shall be connected to the downstream end of the section being cleaned through a predetermined opening. The vacuum collection device must be of sufficient power to render all areas being cleaned under negative pressure, such that containment of debris and the protection of the indoor environment are assured.
2. All vacuum devices exhausting air inside the building shall be equipped with HEPA filters (minimum efficiency), including hand-held vacuums and wet-vacuums.
3. All vacuum devices exhausting air outside the facility shall be equipped with Particulate Collection including adequate filtration to contain Debris removed from the HVAC system. Such devices shall exhaust in a manner that will not allow contaminants to re-enter the facility. Release of debris outdoors must not violate any outdoor environmental standards, codes or regulations.
4. All methods require mechanical agitation devices to dislodge debris adhered to interior HVAC system surfaces, such that debris may be safely conveyed to vacuum collection devices. Acceptable methods will include those, which will not potentially damage the integrity of the ductwork, nor damage porous surface materials such as liners inside the ductwork or system components.

(B) Methods of Cleaning Fibrous Glass Insulated Components

1. Fibrous glass thermal or acoustical insulation elements present in any equipment or ductwork shall be thoroughly cleaned with HEPA vacuuming equipment, while the HVAC system is under constant negative pressure, and not permitted to get wet in accordance with applicable NADCA and NAIMA standards and recommendations.
2. Cleaning methods used shall not cause damage to fibrous glass components and will render the system capable of passing Cleaning Verification Tests (see NADCA Standards).

(C) Damaged Fibrous Glass Material

1. Evidence of damage: If there is any evidence of damage, deterioration, delaminating, friable material, mold or fungus growth, or moisture such that fibrous glass materials cannot be restored by cleaning or resurfacing with an acceptable insulation repair coating, they shall be identified for replacement.
2. Replacement: When requested or specified, Contractor must be capable of remediating exposed damaged insulation in air handlers and/or ductwork requiring replacement.
3. Replacement material: In the event fiber glass materials must be replaced, all materials shall conform to applicable industry codes and standards, including those of UL and SMACNA.

Replacement of damaged insulation is **not** covered by this specification.

(D) Cleaning of coils

1. Any cleaning method may be used which will render the Coil Visibly Clean and capable of passing Coil Cleaning Verification (see applicable NADCA Standards). Coil drain pans shall be subject to Non-Porous Surfaces Cleaning Verification. The drain for the condensate drain pan shall be operational. Cleaning methods shall not cause any appreciable damage to, displacement of, inhibit heat transfer, or erosion of the coil surface or fins, and shall conform to coil manufacturer recommendations when available. Coils shall be thoroughly rinsed with clean water to remove any latent residues.

(E) Antimicrobial Agents and Coatings

1. Antimicrobial agents shall only be applied if active fungal growth is reasonably suspected, or where unacceptable levels of fungal contamination have been verified through testing.
2. Application of any antimicrobial agents used to control the growth of fungal or bacteriological contaminants shall be performed after the removal of surface deposits and debris.
3. When used, antimicrobial treatments and coatings shall be applied in strict accordance with the manufacturer's written recommendations and EPA registration listing.
4. Antimicrobial coatings shall be applied according to the manufacturer's written instructions. Coatings shall be sprayed directly onto interior ductwork surfaces, rather than "fogged" downstream onto surfaces.

4. Cleanliness Verification

(A) General: Verification of HVAC System cleanliness will be determined after mechanical cleaning and before the application of any treatment or introduction of any treatment-related substance to the HVAC system, including biocidal agents and coatings.

(B) Visual Inspection: The HVAC system shall be inspected visually to ensure that no visible contaminants are present.

1. If no contaminants are evident through visual inspection, the HVAC system shall be considered clean; however, the Engineer reserves the right to further verify system cleanliness through Surface Comparison Testing or the NADCA vacuum test specified in the NADCA standards.
2. If visible contaminants are evident through visual inspection, those portions of the system where contaminants are visible shall be re-cleaned and subjected to re-inspection for cleanliness.

(C) Verification of Coil Cleaning

1. Cleaning must restore the coil pressure drop to within 10 percent of the pressure drop measured when the coil was first installed. If the original pressure drop is not known, the coil will be considered clean only if the coil is free of foreign matter and chemical residue, based on a thorough visual inspection (see NADCA Standards).

5. Pre-existing System Damage

(A) Contractor is not responsible for problems resulting from prior inappropriate or careless cleaning techniques of others.

6. Post-project Report

(A) At the conclusion of the project, the Contractor shall provide a report to the engineer indicating the following:

1. Success of the cleaning project, as verified through visual inspection and/or gravimetric analysis.
2. Areas of the system found to be damaged and/or in need of repair.

### PART 3 - EXECUTION

#### 3.01 OPERATION AND START-UP

- A. This Contractor shall furnish all labor, materials and equipment necessary to place the equipment into operation and then start and operate all systems to demonstrate the fitness of the installation.
- B. Prior to start-up, this Contractor shall check all equipment for rotation, check belts for tightness, provide lubrication, clean all equipment, perform pressure tests and make all other adjustments necessary for start-up.

#### 3.02 COORDINATION

- A. The structure and its appurtenances, clearances and the related services, such as plumbing, heating, ventilating and electric service, have been planned to be adequate and suitable for the installation of equipment specified under this Section. The Owner will not assume any increase in cost caused by differing requirements peculiar to a particular make or type of equipment and any such incidental cost shall be borne by this Contractor. He shall be responsible for the proper installation and location of his required sleeves, chases, inserts, etc., and see that they are set in the forms before the concrete is poured. He shall be responsible for his work and equipment furnished and installed by him until the completion and final acceptance of this contract, and he shall replace any work which may be damaged, lost or stolen, without additional cost to the Owner.
- B. Cutting and Patching - It shall be the duty of this Contractor to consult with and give to the General Contractor the exact location and size of all openings and full information as to cutting and patching necessary for the same. In the event this Contractor fails to provide sleeves, inserts, and templates or fails to notify other Contractors well in advance of his requirements, he shall be responsible for paying for all cutting and patching made necessary by his failing to do so.
- C. In the event there is conflict or inadequate space for the proper installation of HVAC equipment, this Contractor shall prepare a scaled (1/4" = 1'0" minimum) composite sketch, showing the building structure and all equipment and items affecting the installation, to clearly identify the areas of conflict. This Contractor shall submit four (4) copies of the sketch, along with a written explanation of the problem, to the Architect for his review and determination on what action to take to resolve the conflict.
- D. It shall be the duty of this Contractor to furnish full information to all trades relative to the work they are to do in connection with work under this Section. This includes data for wiring, including wiring diagrams, equipment foundations, pipe connections, etc., furnished under other Sections.

#### 3.03 TESTING

- A. Furnish all labor, materials, instruments, supplies and services and bear all costs for the accomplishment of the tests herein specified. Correct all defects appearing under tests and repeat the tests until all defects are disclosed. Leave equipment clean and ready for use.
- B. Perform all tests other than herein specified which may be required by Legal Authorities or by Agencies to whose requirements this work is to conform.
- C. Furnish all necessary testing apparatus, make all temporary connections and perform all testing operations required, at no additional cost to the Owner.

Quincy College

- D. All equipment and ductwork installed under this Contract shall be tested and found tight. Insulated or otherwise concealed piping shall be tested before being closed-in. All leaking joints shall be corrected, retested and found tight. Such tests shall conform to the requirements of local codes but shall not be less than the equivalent of the tests called for herein.
- E. Tests performed shall not relieve the HVAC Subcontractor of his responsibility if leaks develop after the tests are made.

3.04 FINAL INSPECTION

- A. When all HVAC work in this project has been completed as indicated on the Drawings and specified herein and is ready for final inspection, such an inspection shall be made by the Architect's and Owner's Representatives. At this time the HVAC Subcontractor for the work under this Section shall demonstrate that the requirements of these specifications and Drawings, have been met to the satisfaction of the Engineer and Owner.

- END OF SECTION -

**SECTION 260000****ELECTRICAL****(Filed Sub-Bid Required)****PART 1: GENERAL****1.01 GENERAL PROVISIONS**

A. Attention is directed to the Parts A, B, and C, and all sections within Part D - Division 1 – General Requirements, as listed in Table of Contents which are hereby made a part of this Section.

B. Time, Manner and Requirements for Submitting Sub-Bids:

1. Sub-bids for work under this Section shall be for the complete work and shall be filed in a sealed envelope at a time and place as stipulated in the "NOTICE TO CONTRACTORS".

The following should appear on the upper left hand corner of the envelope:

NAME OF SUB-BIDDER:(Insert name of sub-bidder)

MASS. STATE PROJECT:((Insert project number from top of page))

SUB-BID FOR SECTION:260000 – ELECTRICAL

2. Each sub-bid submitted for work under this Section shall be on forms furnished as required by Section 44F of Chapter 149 of the General Laws, as amended. Sub-bid forms may be obtained from the architect.
3. Sub-bids filed shall be accompanied by BID BOND or CASH or CERTIFIED CHECK or TREASURER'S CHECK or CASHIER'S CHECK issued by a responsible bank or trust company payable to the Commonwealth of Massachusetts in the amount of five percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

C. Sub Sub-Bid Requirements: None under this Section.

1. Sub bidder's attention is directed to Massachusetts G.L. Chapter 149 Section 44F, as amended, which provides in part as follows:
2. Each sub-bidder shall list in Paragraph E of the "Form for Sub-bids" the name and bid price of each person, firm or corporation performing each class of work or part thereof for which the Section of the Specifications for that sub trade requires such listing, provided that, in the absence of a contrary provision in the Specifications, any sub-bidder may, without listing any bid price, list his own name or part thereof and perform that work with persons on his own payroll, if such sub-bidders, after sub-bid openings, shows to the satisfaction of the Awarding Authority that he does customarily perform such class of work with persons on his own payroll and is qualified to do so. This Section of the Specifications requires that the following classes of work shall be listed in Paragraph E under the conditions indicated herein.
3. Reference Drawings: The Work of this Filed Sub-Bid is shown on the following Contract Drawings:

E-1

E-2

---

Quincy College

## 1.2 GENERAL REQUIREMENTS

- A. Include the General Conditions of the Contract and Division 1, General Requirements, as part of this Section.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work of this Section with that of all other trades affecting, or affected by, this Section. Cooperate with such trades to assure the steady progress of all work under the contract.

## 1.3 SCOPE OF WORK

- A. The scope of work consists of the installation of all materials to be furnished under this Section, and without limiting the generality thereof, includes all equipment, labor and services required for the furnishing, delivering, and installing the principal items of work hereinafter and all items incidental thereto as specified herein and as shown on the drawings.
- B. The itemization of work hereinafter specified does not in any way limit the responsibility to perform all work and furnish all the equipment, labor, and materials necessary for completion and satisfaction of operation of the installations described in the Specifications and shown on the Contract Drawings. In addition to the principal and miscellaneous items of work specifically mentioned and/or indicated, to be responsible for furnishing and installing all incidental and collateral materials such as supporting hardware for panelboards, conduit hangers, fastening devices, insulating tape and the like, which constitute essential components of the grade of Electrical Trade Practices and Workmanship acceptable to the Architect.
  - 1. Building electrical distribution system modifications.
  - 2. Feeders to existing main electric switchboard.
  - 3. Modifications to the existing main electric switchboard.
  - 4. Branch circuit wiring.
  - 5. Emergency batteries and lighting fixtures.
  - 6. Telephone system wiring and associated raceways.
  - 7. Data system wiring and associated raceways.
  - 8. Television system wiring and associated raceways.
  - 9. Panelboards.
  - 10. Emergency lighting system.
  - 11. Nameplates and labels.
  - 12. Disconnect switches.
  - 13. Junction boxes and pull boxes.
  - 14. Damper wiring.
  - 15. Lighting fixtures.
  - 16. Fire alarm system devices and fire alarm control panel modifications.
  - 17. Wiring devices and device plates.
  - 18. Backcharges by the Quincy Fire Department to test the building fire alarm system equipment.

---

Quincy College

19. Fire alarm system test and UL certification by independent testing company and associated cost to perform the same.

#### 1.4 ALTERNATES

- A. Refer to Division 1. - Alternates for work that may affect the work of this Section.
- B. Alternate 1: (NONE)

#### 1.5 RELATED WORK

- A. The following work is not included in this Section and is to be performed under the designated Sections:
  1. All temperature control wiring shall be furnished and installed by the HVAC Subcontractor (Section 23 0000).
  2. Charges for current consumed for construction will be paid by the Quincy College.
  3. Painting (except for factory finished items) specified under Section 09 9000 "Painting".
  4. Access panels, where required, are furnished under Section 08 3100, but shall be installed under the related trades of the surface in which they are installed.
  5. Mechanical system starters furnished under Section 23 0000, installed and wired by the Electrical Subcontractor.

#### 1.6 BREAKDOWN

- A. This Subcontractor must submit a breakdown of his contract price to aid the Architect in determining the value of work installed as the job progresses.
- B. No requisition will be paid to this Subcontractor until after the breakdown is delivered to the Architect.
- C. Breakdown shall consist of, not less than the following items. The figure for each item shall include costs of material, labor, markup, and all other costs applicable to the item.
  1. Raceway installation.
  2. Wires and cables.
  3. Main electric service modifications.
  4. Main electric disconnect switch, metering equipment modifications, panelboards, and associated feeders.
  5. Motor wiring.
  6. Branch circuit wiring.
  7. Fire alarm system.
  8. Telephone system, associated wiring and telephone outlets.
  9. Data distribution system and raceways.
  10. Lighting fixtures and associated branch circuit wiring.
  11. Wiring devices and associated branch circuit wiring.

#### 1.7 SUBMITTALS

- A. Submit complete Product Data Sheets in accordance with the provisions of the GENERAL CONDITIONS.

Quincy College

- B. Data sheets shall include, but are not necessarily limited to, the following items:
1. Panelboards.
  2. Circuit breakers.
  3. Wiring devices.
  4. Wiring device plates.
  5. Lighting fixtures.
  6. Wires, cables and raceways.
  7. Ballasts.
  8. Lamps.
  9. Special support equipment.
  10. Outlet boxes and junction box.
  11. Conduit.
  12. Electrical distribution equipment.
  13. Emergency lighting equipment.
  14. Fire alarm system equipment.
  15. Anchoring systems.
  16. Panelboard, junction box and terminal box nameplates.
  17. Wiring devices.
  18. Telephone system cables and associated outlets.
  19. Data system cables and associated outlets.
  20. Television system cables and associated outlets.
- C. In addition to product data sheets and shop drawings the Electrical Subcontractor shall submit the following information in sextuplicate:
1. Copies of guarantee.
  2. Operating and maintenance manuals.
  3. Panelboard directories.
  4. Equipment inventory and nameplate rating of all mechanical and electrical equipment.

## 1.8 REFERENCES

- A. Installation shall comply in all details with the Massachusetts Electrical Code with its latest revisions and all prevailing local, Federal and State regulations.
- B. Material and equipment shall be Underwriters' laboratories, Inc., listed, where a standard has been established.
- C. Manufacturers' names and nomenclature facilitates descriptions of certain materials and equipment and are used to establish type, quality and function.
- D. Unless otherwise specified, all work shall be manufactured, tested and installed in accordance with the latest editions of applicable publications and standards of the following organizations:
1. American Society for Testing and Material (ASTM).
  2. Underwriters' Laboratories, Inc. (U.L.)

## Quincy College

3. Insulated Power Cable Engineers Association (IPCEA).
  4. National Electrical Manufacturers Association (NEMA).
  5. Institute of Electrical and Electronic Engineers (IEEE).
  6. American National Standards Institute (ANSI).
  7. National Fire Protection Association (NFPA).
  8. National Electrical Code (NEC) and as amended by the Massachusetts Electrical Code (MEC).
- E. Should specifications, Architects' instructions, laws, ordinances or public authority require any special tests or approvals, arrange for these and give the Architect timely notice. If the inspection is by another authority other than the Architect, notify the Architect of the dates fixed for such inspection.
- F. Make all reasonable tests required by the Architect to provide the integrity of the electrical installation and leave the entire installation properly adjusted and in operating condition. After connections are made test the insulation resistance of all parts of the electrical work except that which is not furnished under this Specification. All wiring shall be so installed that when completed the system will be free from short circuits and from unintentional grounds.
- G. Where reference is made to Codes and Standards these shall be interpreted as minimum requirements. Requirements in excess of these codes and Standards may be indicated on the Drawings or in the Specifications and shall be so included in the contract work. Compliance with such code requirements only shall not be construed as fulfillment of the contract work, where the plans and/or Specifications indicate additional work, which may exceed such code standards.
- H. Copies of NEMA, NFPA, and NEC shall be made available by the Electrical Subcontractor at the job site.

## 1.9 SAMPLES

- A. Submit samples of all materials requested by the Architect.
- B. Examples shall be prepared and submitted in accordance with the requirements of GENERAL CONDITION with all postage and transportation costs paid by the Subcontractor.

## 1.10 RECORD DRAWINGS

- A. In accordance with requirements, furnish and keep in the job at all times, two (2) complete and separate sets of blackline prints of the electrical work on which shall be clearly, neatly and accurately noted, promptly as the work progresses, all electrical changes, revisions and additions to the work. Wherever work is installed otherwise than as shown on the Contract Drawings, such changes shall be noted.
- B. Indicate daily progress on these prints by coloring in the various conduit, fixtures, apparatus and associated appurtenances as they are erected.
- C. No approval of requisition for payment for work installed will be given unless supported by record prints as required above.
- D. At the conclusion of work, prepare Record Drawings in accordance with General Conditions.

## 1.11 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

- A. Instruct to the Owner's satisfaction such persons as the Owner designates, in the proper operation and maintenance of the systems and their parts. The Subcontractor shall provide on site instruction of each building electrical system.

## Quincy College

- B. Furnish operating and maintenance manuals and forward same to the Architect for transmittal to the Owner.
- C. Operating instructions shall be specific for each system and shall include copies of posted specific instructions.
- D. For maintenance purposes, provide Shop Drawings, parts lists, specifications, and manufacturer's maintenance bulletins for each piece of equipment.
- E. Provide name, address and telephone number of the manufacturer's representative and service company, for each piece of equipment so that service or spare parts can be readily obtained.
- F. Provide copies of the panelboard directories for review by the owner before installing directories in the panelboard.

## 1.12 GUARANTEE

- A. Attention is directed to provisions of the GENERAL CONDITIONS regarding guarantees and warranties for work under this Contract.
- B. Manufacturers shall provide their standard guarantee for work under this Section. However, such guarantees shall be in addition to and not in lieu of all other liabilities, which the manufacturer and Subcontractor may have by law or by other provisions of the Contract Documents.
- C. All material, items of equipment and workmanship furnished under this Section shall carry for this standard warranty against all defects in material and workmanship. Any fault due to defective or improper material, equipment, workmanship or design, which may develop, shall be made good, forthwith, by and at the expense of the Electrical Subcontractor, including all other damage done to areas, materials and other systems resulting from this failure.
- D. Electrical Subcontractor shall guarantee that all elements of the systems are of sufficient capacity to meet the specified performance requirements as set forth herein or as indicated.
- E. Upon receipt of notice from the Owner of failure of any part of the systems or equipment during the guarantee period, the affected part or parts shall be replaced by the Electrical Subcontractor.
- F. Furnish, before the final payment is made, a written guarantee covering the above requirements.
- G. Lamps shall be furnished and installed in each lighting fixture as soon as fixtures are properly hung. Replace all lamps that fail within ninety (90) days after final acceptance at no additional cost. If the Electrical Subcontractor fails to replace lamps during the guarantee period, after a second request the Owner may replace lamps and back-charge Electrical Subcontractor.

## 1.13 WORKMANSHIP

- A. The entire work provided in this Specification shall be constructed and finished in every respect in a workmanlike and substantial manner. It is not intended that the Drawings shall show every pipe, fitting and appliance, but Electrical Subcontractor shall furnish and install all such parts as may be necessary to complete the systems in accordance with the best trade practice and the satisfaction of the Architect.
- B. Keep other Subcontractors fully informed as to shape, size and position of all openings required for apparatus and give full information to the Contractor and other Subcontractors sufficiently in advance of the work so that all openings may be built in advance. Furnish and install all sleeves, supports, etc., hereinafter specified or required.

## Quincy College

- C. In the case of failure on the part of Electrical Subcontractor to give proper and timely information as noted above, the Electrical Subcontractor shall do his own cutting and patching without extra expense to the Owner.
- D. Obtain detailed information from the manufacturers of apparatus as to the proper method of installing and connecting same. Obtain all information from the Electrical Subcontractor and other Subcontractors, which may be necessary to facilitate work and the completion of the whole project.
- E. Remove daily, all rubbish and debris and all refuse from workmen's lunches and at completion remove all his surplus materials, and leave the work in clean condition acceptable to the Architect.

## 1.14 PROTECTION

- A. The Electrical Subcontractor shall be responsible for his work and equipment until finally inspected, tested and accepted. Carefully store materials and equipment which are not immediately installed after delivery to site. Close open ends of work with temporary covers or plugs during construction to prevent entry of obstructing material.
- B. The Electrical Subcontractor shall protect work and materials of other trades from damage that might be caused by his work or workmen and make good damage thus caused.

## 1.15 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A. Before submitting prices or beginning work, thoroughly make an examination of the site and the contract documents. The Electrical Subcontractor shall visit the premises before submitting his proposal and make his own appraisal of the difficulties and conditions that will be encountered during the work. No additional charges will be allowed for work required due to existing conditions to make the installation conform to the specifications and the general arrangement shown on the drawings.
- B. No claim for extra compensation will be recognized if difficulties are encountered, which an examination of site conditions and contract documents prior to executing contract would have revealed.
- C. The drawings showing layout of the electrical systems indicated the approximate location of existing outlets and equipment. THE OUTLETS, AS SHOWN ON THE DRAWINGS, ARE NOT INTENDED TO SHOW THE ROUTING OF THE WIRE; THE FINAL DETERMINATION AS TO THE ROUTING SHALL BE GOVERNED BY FIELD CONDITIONS.
- D. The right to make any reasonable change in the location of outlets, apparatus, and equipment up to the time of installation is reserved by the Architect without involving any additional expense to the Owner.
- E. Be responsible for all materials delivered to the site in connection with the work and pay all charges for cartage, scaffolds, planking, rigging, and erecting. Take every precaution necessary to protect equipment and installation in addition to plugging and protecting open ends of all pipes, outlet boxes, panelboxes, and junction boxes. All equipment shall be stored in a clean dry place to preserve the quality of materials being used. Equipment and/or materials damaged during construction shall be replaced at no additional cost to the Owner.
- F. All materials and equipment required by this Specification shall be new, clean and free from defects at the time of installation. The Manufacturers' and Underwriters' label shall appear on all material and equipment unless otherwise approved, in writing, by the Owner.

---

Quincy College

### 1.16 TEMPORARY FACILITIES

- A. The Electrical Subcontractor shall furnish all tools, equipment, and temporary construction required for the execution of the electrical work.
- B. All temporary construction shall be rigidly built in accordance with all local and State requirements, and shall be removed from the premises upon completion of the work.
- C. Any other temporary construction required for the electrical work shall be provided by the Electrical Subcontractor, but shall be located as directed by the Architect.

### 1.17 SUBSTITUTION OF MATERIALS OR EQUIPMENT

- A. If the Electrical Subcontractor wishes to use materials or equipment other than those specifically designated herein, as being equal to those so specifically designated: BEFORE PURCHASING AND/OR FABRICATION, he shall submit the proposed substitution in accordance with the requirements of Section 01 3000 Administrative and Procedural Requirements, and the decision of whether or not it is equal to that specified shall be determined by the Architect.
- B. If the apparatus or materials substituted for those specified necessitate changes or additional connections, piping supports, construction of work of other sections: same shall be provided and the Electrical Subcontractor shall assume the cost and the entire responsibility thereto.
- C. The Architect's permission to make such substitution shall not relieve the Electrical Subcontractor from full responsibility for the work.

### 1.18 DRAWINGS

- A. The Drawings are generally diagrammatic and are intended to convey the scope of work and indicate general arrangements of equipment, ducts, conduits, piping and fixtures. The locations of all items shown on the Drawings or called for in the Specifications that are not definitely fixed by dimensions, are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project being installed. The Electrical Subcontractor shall follow Drawings in laying out work and shall check Drawings of other trades to verify space conditions at all points where headroom and space conditions appear inadequate. Architect shall be notified before proceeding with the installation. The Electrical Subcontractor shall, without extra cost, make reasonable modifications in the layout as needed to prevent conflict with the work of other trades or existing conditions for proper execution of work.

### 1.19 PROCEDURE

- A. The Electrical Subcontractor shall give his personal superintendence to the work, keeping also a competent foreman constantly on the grounds. The Electrical Subcontractor shall be responsible for all his property stored on the premises and shall hold the Owner free from liability for loss by theft or carelessness of employees of the Owner or of other Subcontractors. The Electrical Subcontractor must take particular care to protect any finished work from injury or defacement; and must remedy at his own expense, any injury caused thereto by his operation. After completion of the work, the Electrical Subcontractor shall remove all waste, rubbish and other materials left as a result of his operation and leave the premises in clean condition.

### 1.20 FIELD MEASUREMENTS

- A. The Electrical Subcontractor shall verify, in the field, all measurements necessary for his work and shall assume responsibility for their accuracy.

---

Quincy College

### 1.21 PERMITS, LAWS, ORDINANCES & CODES

- A. The Electrical Subcontractor shall give all necessary notices, obtain all permits, and pay all taxes, fees and other costs in connection with his work; file all necessary plans, prepare all necessary documents and obtain all necessary approvals of state authorities, all local, town, city, or county departments having jurisdiction; obtain all required certificates of inspection for his work.
- B. The Electrical Subcontractor shall include in the work, without extra cost to the Owner, any labor, materials, services, apparatus, drawings in addition to Contract Drawings and Documents, in order to comply with all applicable laws, ordinances, rules and regulations whether or not shown on the drawings and/or specified.
- C. All materials furnished and all work installed shall comply with the rules and recommendations of the Massachusetts Electrical Code, the National Board of Fire Underwriters', all requirements of the local utility company, recommendations from the fire insurance rating organizations having jurisdiction, and with the requirements of all local, town, city, or county departments having jurisdiction.

### 1.22 DEFINITIONS

- A. "Furnish and Install" means to supply, erect, install and connect up, complete for regular operation, the particular item referred to, unless otherwise specified. "Piping" includes, in addition to pipe, all fittings, boxes, hangers and other accessories relating to such piping. "Concealed" means hidden from sight as in trenches, chases, furred spaces, shafts, hung ceilings, embedded into construction, ground or concealed as defined above.

### 1.23 DAMAGE TO OTHER WORK

- A. Each Subcontractor shall be held responsible for and shall pay for all damage to other work caused by his work or workmen.
- B. Repairing of such damage shall be done by the General Contractor or Contractors who installed the work, and so directed by the Architect.

### 1.24 VISIT TO PREMISES

- A. This Subcontractor shall visit the premises before submitting his proposal and make his own appraisal of the difficulties and conditions that will be encountered during the work. No additional charges will be allowed for work required due to existing conditions to make the installation conform to the specifications and the general arrangement shown on the Drawings.

### 1.25 SUPERINTENDENCE OF WORK

- A. This Subcontractor shall give his personal superintendence to the work and shall retain at the job site during the period of construction, a competent foreman, satisfactory to the Architect, who shall be in full charge of the work under this Section.

### 1.26 CLEANING UP

- A. This Subcontractor shall, at the completion of the work, clean all exposed items of material, equipment and fixtures in his Contract so as to leave such items bright and clean. Special attention being given to interiors and exteriors of all panels, electrical equipment, and enclosures.
- B. All painted metal surfaces which have been scratched, dented or marred shall be repainted by this Subcontractor.
- C. After completion of the work, this Subcontractor shall remove all waste, rubbish and other materials left as a result of his operation and leave the premises in clean condition.

---

Quincy College

### 1.27 CONFLICT BETWEEN PLANS AND SPECIFICATION

- A. In case of conflict between contract plans and the specifications the Architect will decide which takes precedence.

### 1.28 STORAGE OF MATERIALS

- A. The Electrical Subcontractor shall store his material and equipment prior to installation only where designated by the Architect. He shall be responsible for all his property stored on the premises and shall hold the Owner free from liability for loss by theft.
- B. The Electrical Subcontractor shall take particular care to protect any finished work from injury or defacement and must remedy, at his expense, any injury caused thereto by his operations.

## PART 2: PRODUCTS

### 2.1 PULL BOXES, WIREWAYS AND CHANNELS

- A. Pull boxes shall be code gauge galvanized steel with screw covers to match. Pull boxes and wireways shall be as shown on Drawings and/or as required by NEC and/or job conditions, with steel barriers separating systems.
- B. Wireways shall be code gauge galvanized steel, manufactured standard sections and fittings, with combination hinged and screw covers.
- C. Steel channel supports shall be minimum 1-5/8 inch mold strip steel with minimum .105 inch wall thickness, Unistrut P1000, Kindorf, Husky Products, or equal.

### 2.2 WIRE AND CABLE

- A. Wiring shall be minimum of #12 AWG solid, except fire alarm system wiring which will meet the requirements of the fire alarm system manufacturer.
- B. Provide single conductor wire and cable with 600V insulation of sizes shown on Drawings. Wire size #8 AWG and larger shall be stranded. Wire of size smaller than #8 AWG shall be solid. Conductors shall be soft drawn copper with conductivity of not less than 98% of ANSI Standard for annealed copper.
- C. Wire and cable shall be Type THWN-THHN building wire, 600V, rated for 75 degrees C. in wet locations and 90 degrees C. in dry locations.
- D. Wire and cable shall be as manufactured by Southwire, Pirelli or Essex Wire & Cable Co.

### 2.3 ARMORED CABLE (TYPE MC)

- A. Branch circuit wiring shall be armored cable (type MC) with insulated ground unless otherwise noted elsewhere in these specifications.
- B. The conductors shall be copper of sizes indicated on the drawings or elsewhere on the drawings or elsewhere in these specifications and shall be manufactured by American Flexible Cable (AFC) or approved equal as manufactured by American or Collyer. Armored cable shall be installed in all stud partitions and hung ceiling.

### 2.4 LIGHT SWITCHES

- A. All local wall switches shall be of the flush tumbler type, single-pole, double-pole, 3-way or 4-way as required, as manufactured by Hubbell, P&S or Arrow-Hart.
- B. Local switches shall be installed in such a position that they shall bear evenly and true and be secured on the axis of the supporting members.

## Quincy College

- C. Under no circumstances are wooden wedges, shims, or blocks be used in truing up local switches. Should the outlet box, in any case, come too far back of the finished surface, recess boxes and screws of the proper length to reach the box shall be used of such a size as to form a shoulder at exactly the proper point to retain the switch in position.
- D. Single-pole switches shall be Arrow-Hart #1221W or equal as manufactured by Hubbell, or Pass & Seymour.
- E. Three-way switches shall be Arrow-Hart #1223W and 4-way switches shall be Arrow-Hart #1224W or equal as manufactured by Hubbell or Pass & Seymour.
- F. Switch and pilot shall be Hubbell #1221-PL.

## 2.5 RECEPTACLES

- A. All convenience outlets shall be of the single or duplex type, back or side-wired. T-slot or polarized slot type, grounded as required, as manufactured by Hubbell, Arrow Hart or Pass & Seymour.
- B. In general, convenience outlet circuits shall be independent of light circuits and shall not be controlled by light circuit breaker switches or light switches.
- C. Duplex receptacles shall be Arrow Hart 5252-W or equal as manufactured by Hubbell or Pass & Seymour.
- D. Single receptacles rated at 20A-250V shall be Arrow Hart 5861-I or equal as manufactured by Hubbell or Pass & Seymour.
- E. Single receptacles rated at 30A-250V 1 phase shall be Arrow Hart 5700 or equal as manufactured by Hubbell or Pass & Seymour.
- F. Single receptacles rated at 50A-250V 1 phase shall be Arrow Hart 5709 or equal as manufactured by Hubbell or Pass & Seymour.
- G. Single receptacles rated at 230A-250V 3 phase shall be Arrow Hart 5721 or equal as manufactured by Hubbell or Pass & Seymour.
- H. Single receptacles rated at 30A-250V 3 phase shall be Arrow Hart 8432 or equal as manufactured by Hubbell or Pass & Seymour.
- I. Single receptacles rated at 50A-250V 3 phase shall be Arrow Hart 8450 or equal as manufactured by Hubbell or Pass & Seymour.
- J. Single receptacles rated at 20A-125/250-V 1 phase shall be Arrow Hart 5757 or equal as manufactured by Hubbell or Pass & Seymour.
- K. Single receptacles rated at 30A-125/250V 1 phase shall be Arrow Hart 5744 or equal as manufactured by Hubbell or Pass & Seymour.
- L. Single receptacles rated at 50A-125/250V 1 phase shall be Arrow Hart 5754 or equal as manufactured by Hubbell or Pass & Seymour.
- M. Ground fault receptacles shall be rated at 20 amperes and shall be Arrow Hart GFR83FT-W or equal as manufactured by Hubbell or Pass & Seymour.

## 2.6 WIRING DEVICE PLATES

- A. Provide specification grade, device plates, .040 inch gauge, stainless steel. Plates shall be of appropriate type and size for wiring and control devices, signal and telephone outlets.
- B. Device plates shall be by same manufacturer as devices.
- C. Provide new plates on existing switch outlet boxes as required to accommodate new switching requirements (i.e. four gang box with two (2) switches will require a four gang plate with

Quincy College

provisions for only two switches or blank plates in areas where new switches are lowered to provide simple access to light switches.

## 2.7 OUTLET BOXES AND ACCESSORIES

- A. Provide galvanized sheet steel outlet boxes for all outlets unless otherwise noted. Outlet boxes and accessories shall be as manufactured by Steel City, Appleton, Raco, or equal. Steel City catalog numbers are used for reference.
- B. Fixture outlet boxes shall have 3/8" solid male fixture studs and auxiliary fixture stems shall be supported from 3/8" male fixture studs.
- C. Outlet boxes and accessories shall be provided with a seal when used in concert with wiring device to provide an air tight seal. The seal shall be installed on all exterior and demising walls.

## 2.8 SAFETY SWITCHES

- A. Furnish and install safety switches as required by plans and specifications. All safety switches shall be NEMA Heavy Duty Type HD and Underwriters' Laboratories listed. Square D Class 3110 or approved equal as manufactured by Siemens or General Electric.
- B. All switches shall have switchblades, which are fully visible in the OFF position with the door open. All current-carrying parts shall be plated through electrolytic processes to resist corrosion and promote cool operation.
- C. Switches shall be quick-make and quick-break such that, during normal operation of the switch, the operation of the contacts shall be not capable of being restrained by the operating handle after the closing or opening action of the contacts has started. The handle and mechanism shall be an integral part of the box, not the cover, with positive padlocking provisions in the OFF position.
- D. Switches shall be furnished in NEMA 1 general purpose enclosures unless NEMA 3R (raintight) is indicated on the plans. Enclosures shall be of code gauge (UL 98) sheet steel (NEMA 1) or code gauge (UL 98) galvanized steel (NEMA 3R) with a rust-inhibiting phosphate treatment and gray baked enamel finish.
- E. Switches shall be horsepower rated for 600 volts ac.

## 2.9 PANELBOARDS

- A. Panelboards shall be type "NQOD", bolted as manufactured by Square D, General Electric or Siemens Electrical Products Company.
- B. The panelboard schedule indicates the details as to size, voltage, capacity and number of circuits necessary, including spares.
- C. The panelboard shall conform to the requirements of the Underwriters' Label.
- D. Circuit breakers 1, 2, and 3 pole for 120/208 volt application shall be type "QOB" - 22,000 amps interrupting capacity as indicated on drawings. Circuit breakers shall be bolt-on type. All locks of all panels shall be operated by a common master key.
- E. Furnish and install on the inside cover of all light and power panels, a neatly typed index, giving the circuit number; and opposite each number the area of equipment which that particular circuit serves or controls.
- F. In connecting branch circuits to panels, care shall be taken to insure balance; and circuit numbering shown on plans shall be changed to prevent same circuits on same phase being connected to a common neutral.

---

Quincy College

## 2.10 NAMEPLATES

- A. Nameplates consisting of black plastic with white center, lettering to be 1/4" high, engraved through to white layer and properly fastened with brass screws shall be provided for the following equipment:
  - 1. All panelboards.
  - 2. Junction boxes larger than 4-11/16".

## 2.11 LIGHTING FIXTURES

- A. The Electrical Subcontractor shall assume all responsibility for the safe handling of all lighting fixtures, which are furnished under this Section and other accessories and lamps, until the final inspection has been made by the Architect.
- B. Special fittings and materials that may be required to support fixtures shall be supplied as well as supports or grounds required to secure surface or pendant mounted fixtures on suspended ceilings unless otherwise noted. Fluorescent fixtures mounted in association with suspended ceiling systems shall be supported above the ceiling by threaded three eighths inch diameter continuous galvanized steel hanger rods. Each 4-foot fixture or 4-foot section shall have two (2) hanger rods per fixture. Where duct work, pipes, type of building construction materials and structural framing members provide obstructions or difficult support means, hanger rods shall be used in association with horizontal sections of steel support channels in a manner approved by the Architect. Steel support channels shall be Unistrut, Kindorf, Husky Products Co., or equal. The exact mounting height of all stem supported lighting fixtures shall be determined on the job by the Architect.
- C. Ballasts for fluorescent fixtures shall be electronic type, as specified under ballast section of specification.
- D. Multiple lamp ballasts shall be used whenever possible. Ballasts shall be of the high power factor type. The proper ballast shall be furnished and installed for all lighting fixtures normally designed for operation with ballasts, whether or not such ballasts are specifically itemized on the Fixture Schedule.
- E. Furnish and install a complete set of new lamps for all fixtures. Lamps used during the construction period shall be removed and replaced with new lamps. Lamps shall be Phillips "TL" Series. All fluorescent lamps to be octron lamps or fluorescent quad lamps. Incandescent lamps shall be type "A" "soft white".
- F. Fixtures, part or parts thereof (including lamps) determined to be defective upon completion of the electrical installation shall be replaced by the Electrical Subcontractor free of charge.
- G. All suspended lighting fixtures shall be hung in association with approved aligner type hangers, except as otherwise noted.
- H. In addition to fixture supports, surface mounted lighting fixtures shall be secured to the surface to which they mount at a minimum of two points on each 4 foot length of fixture housing or as recommended by the lighting fixture manufacturer, as approved, to prevent rotation or movement of the fixture out of its square and level position of alignment.
- I. After the installation and lamping of permanent lighting fixtures, these fixtures may be used for lighting with the express consent of the Architect, and will not require relamping prior to the completion of the project except where such lamps are faulty or burned out.

---

Quincy College

## 2.12 ELECTRONIC BALLASTS

- A. Electronic Ballasts where specified as electronic shall be Triad-Utrad Ballastar electronic type for straight or "U" lamps.
- B. Ballast manufacturers shall have been producing electronic ballasts for at least 10 years with a low failure rate.
- C. Ballasts shall operate at an input frequency of 60 Hz rated for 108-132 volts (120V circuit).
- D. The ballasts shall operate the lamps at a frequency of 20 to 35 KHz and have no detectable flicker.
- E. Ballasts that operate as a parallel circuit shall permit other lamps to continue functioning after one lamp has failed.
- F. Ballasts are to have fewer than 32 components to assure safe and long operation.
- G. Ballasts shall be of the high-power factor type of 90 percent or higher, sound rated "A" or better, contain no PCB and be listed by UL.
- H. Ballasts shall be marked with manufacturer's name, part number, supply voltage, sound rating, power factor, open circuit voltage, current draw for each lamp type and UL listing.
- I. Ballasts shall comply with FCC and NEMA limits as to EMI or RFI and not interfere with the operation of other normal electrical equipment.
- J. Ballasts shall have independent lab test reports and meet any applicable ANSI standards.
- K. Ballasts shall not be affected by lamp failure and deliver normal lamp life.
- L. Rapid Start ballasts shall provide for soft/stable start of rapid-start lamps and maintain cathode heat during operation.
- M. Ballasts to be potted and in steel case.
- N. Ballasts to be surge and transit protected to 6000 volts.
- O. The operating temperature of ballasts is not to exceed 60 degrees centigrade at any point on case during normal operation.

## 2.13 FIRE ALARM SYSTEM

- A. The Electrical Subcontractor shall modify the existing microprocessor controlled, intelligent reporting fire alarm equipment as required to form a complete coordinated system ready for operation. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, control panel, auxiliary control devices, wiring as shown on the drawings and specified herein, and programming.
- B. The fire alarm system shall comply with requirements of NFPA Standard No. 72 for protected premises signaling systems except as modified and supplemented by this specification. The system field wiring shall be supervised either electrically or by software-directed polling of field devices.
  - 1. The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards.
    - a. National Fire Protection Association (NFPA) - USA:
      - 1) No. 72-1993 National Fire Alarm Code.
      - 2) No. 101 Life Safety Code.
    - b. Underwriters Laboratories Inc. (UL) - USA:
      - 1) No. 268 Smoke Detectors for Fire Protective Signaling Systems.

Quincy College

- 2) No. 864 Control Units for Fire Protective Signaling Systems.
  - 3) No. 268A Smoke Detectors for Duct Applications.
  - 4) No. 521 Heat Detectors for Fire Protective
  - 5) No. 464 Audible Signaling Appliances.
  - 6) No. 38 Manually Actuated Signaling Boxes.
  - 7) No. 346 Waterflow Indicators for Fire Protective Signaling Systems.
  - 8) No. 1971 Visual Notification Appliances.
- c. Local and State Building Codes.
  - d. All requirements of the Authority Having Jurisdiction (AHJ).
- C. Equipment And Material, General
1. All equipment and components shall be new, and the manufacturer's current model and UL crosslisted for use on the existing fire alarm control panel. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a protective signaling system, meeting the National Fire Alarm Code.
  2. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.
  3. All Equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.
- D. Conduit and Wire:
1. Conduit:
    - a. Conduit shall be in accordance with The National Electrical Code (NEC), local and state requirements.
    - b. Where possible, all wiring shall be installed in conduit or raceway. Conduit fill shall not exceed 40 percent of interior cross sectional area where three or more cables are contained within a single conduit.
    - c. Cable must be separated from any open conductors of Power, or Class 1 circuits, and shall not be placed in any conduit, junction box or raceway containing these conductors, as per NEC Article 760-29.
    - d. Wiring for 24-volt control, alarm notification, emergency communication and similar power-limited auxiliary functions may be run in the same conduit as initiating and signaling line circuits. All circuits shall be provided with transient suppression devices and the system shall be designed to permit simultaneous operation of all circuits without interference or loss of signals.
    - e. Conduits shall not enter the Fire Alarm Control Panel, or any other remotely mounted Control Panel equipment or backboxes, except where conduit entry is specified by the FAC manufacturer.
    - f. Conduit shall be 3/4 inch (19.1 mm) minimum.
  2. Wire:
    - a. All fire alarm system wiring shall be new.

Quincy College

- b. Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the fire alarm system. Number and size of conductors shall be as recommended by the fire alarm system manufacturer, but not less than 16 AWG (1.02 mm) for Initiating Device Circuits and Signaling Line Circuits, and 14 AWG (1.63 mm) for Notification Appliance Circuits.

E. System Components:

1. Addressable Devices - General

- a. Addressable Devices shall use simple to install and maintain decade (numbered 0 to 9) type address switches. Devices, which use a binary address setting method, such as a dipswitch, are not an allowable substitute.

2. Addressable Pull Box (manual station)

- a. Addressable pull boxes shall, on command from the control panel, send data to the panel representing the state of the manual switch and the addressable communication module status. They shall use a key operated test reset lock, and shall be designed so that after actual emergency operation, they cannot be restored to normal use except by the use of a key.
- b. All operated stations shall have a positive, visual indication of operation and utilize a key type reset.
- c. Manual stations shall be constructed of Lexan with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters, 1.75 inches (44 mm) or larger.

3. Addressable Photoelectric Smoke Detector

- a. The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.

4. Intelligent Thermal Detectors

- a. Thermal detectors shall be intelligent addressable devices rated at 135 degrees Fahrenheit (58 degrees Celsius) and have a rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. It shall connect via two wires to the fire alarm control panel signaling line circuit.

5. Addressable Dry Contact Monitor Module

- a. Addressable monitor modules shall be provided to connect one supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to one of the fire alarm control panel SLCs.
- b. The monitor module shall mount in a 4-inch square (101.6 mm square), 2-1/8 inch (54 mm) deep electrical box.
- c. The IDC zone shall be suitable for Style D or Style B operation. An LED shall be provided that shall flash under normal conditions, indicating that the monitor module is operational and in regular communication with the control panel.
- d. For difficult to reach areas, the monitor module shall be available in a miniature package and shall be no larger than 2-3/4 inch (70 mm) x 1-1/4 inch (31.7 mm) x 1/2 inch (12.7 mm). This version need not include Style D or an LED.

6. Two Wire Detector Monitor Module

- a. Addressable monitor modules shall be provided to connect one supervised IDC zone of conventional 2-wire smoke detectors or alarm initiating devices (any N.O. dry contact device).

Quincy College

**ELECTRICAL**

---

Quincy College

- b. The two-wire monitor module shall mount in a 4-inch square (101.6 mm square), 2-1/8 inch (54 mm) deep electrical box or with an optional surface backbox.
- c. The IDC zone may be wired for Class A or B (Style D or Style B) operation. An LED shall be provided that shall flash under normal conditions, indicating that the monitor module is operational and in regular communication with the control panel.

#### 7. Addressable Control Module

- a. Addressable control modules shall be provided to supervise and control the operation of one conventional NACs of compatible, 24 VDC powered, polarized audio/visual notification appliances. For fan shutdown and other auxiliary control functions, the control module may be set to operate as a dry contract relay.
- b. The control module shall mount in a standard 4-inch square (101.6 mm square), 2-1/8 inch (54 mm) deep electrical box, or to a surface mounted backbox.
- c. The control module NAC may be wired for Style Z or Style Y (Class A/B) with up to 1 amp of inductive A/V signal, or 2 amps of resistive A/V signal operation, or as a dry contact (Form-C) relay. The relay coil shall be magnetically latched to reduce wiring connection requirements, and to insure that 100% of all auxiliary relay or NACs may be energized at the same time on the same pair of wires.
- d. Audio/visual power shall be provided by a separate supervised power circuit from the main fire alarm control panel or from a supervised, UL listed remote power supply.
- e. Te control module shall be suitable for pilot duty applications and rated for a minimum of 0.6 amps at 30 VDC.

#### 8. Isolator Module

- a. Isolator modules shall be provided to automatically isolate wire-to-wire short circuits on an SLC Class A or Class B branch. The isolator module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC loop segment or branch. At least one isolator module shall be provided for each floor or protected zone of the building.
- b. If a wire-to-wire short occurs, the isolator module shall automatically open-circuit (disconnect) the SLC. When the short circuit condition is corrected, the isolator module shall automatically reconnect the isolated section.
- c. The isolator module shall not require any address setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an isolator module after its normal operation.
- d. The isolator module shall mount in a standard 4-inch (101.6 mm) deep electrical box or in a surface mounted backbox. It shall provide a single LED that shall flash to indicate that the isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

#### 9. ADA High Intensity Strobe Audio-Visual Alarm Indicating Appliances

- a. Simplex Model 4903-9450 through 4903-9452 shall be listed with Underwriters' Laboratories for use with Fire Protective Signaling Systems. Horn/strobes shall have a minimum sound output of 96dB @ 10 feet and shall be flush mounted. The horn shall sound in a Temporal pattern. The strobe shall have a candela rating that meets or exceeds the requirements of the Americans with Disabilities Act (ADA) and shall be of such rating as shown on the drawings. The device shall be rated at 24 VDC nominally and have an acceptable operating range of 20-30 VDC. Surface mounted units shall be furnished with a Simplex model 4905-9946 red adapter skirt.

Quincy College

- b. The device shall mount to a 4" square by 1-1/2" back box located in common spaces, basement spaces, basement spaces and dwelling units.

## 2.14 FIRE PROOF SEAL MATERIAL

### A. Fire Stop Foam:

1. The fire stopping sealant shall be a one-part, neutral curing silicone sealant. The sealant shall be completely water resistant and shall contain no solvents nor inorganic fibers of any kind. The through-penetration firestop sealant shall allow movement of +25% and shall be UL Classified and/or FM Systems Approved and tested to the requirements of ASTM E814 (UL1479). The firestop joint sealant shall allow movement up to + 50% and shall be UL Classified and tested to the requirements of UL2079.

### B. Firestop Mortar:

1. The fire stopping material shall be a lightweight, fast drying Portland cement based material. The density of the wet mortar shall be < 45 lb./cu.ft. The specified mortar shall be approved for a wide range of applications including combustible and non-combustible penetrants when used by itself or in combination with other products from the same manufacturer. The firestop mortar shall be UL Classified and/or FM Systems Approved and tested to the requirements of ASTM E814 (UL1479).

## 2.15 OCCUPANCY SENSOR (WALL)

- A. This Contactor shall furnish and install wall mounted infrared occupancy sensors WS Series Model PW-100 or PW-200 as manufactured by Watt Stopper of approved equal.
- B. The wall mounted occupancy sensors shall meet the following requirements:
  1. Coverage of 180 degrees, maximum 900 sq. ft.; 300 sq. ft. for desktop activity.
  2. Dual 120/277 voltage.
  3. The Watt Stopper's ASIC technology reduces components and enhances reliability.
  4. Pulse count processing eliminates false offs without reducing sensitivity.
  5. Detection Signature Analysis eliminates false triggers; provides immunity to RFI and EMI.
  6. Utilizes the Watt Stopper's exclusive Zero Crossing Circuitry – Patented.
  7. Digital time delay adjustable from 30 seconds up to 30 minutes.
  8. Adjustable unit sensitivity from 20% to 100%.
  9. Integrated light level sensor – works from 2 to 200 footcandles.
  10. LED for sensitivity calibration.
  11. Small size: 2.7: x 1.8: x 2.2: (60mm x 45mm x 56mm) L x W x D.
  12. Compatible with all electronic ballasts and PL amp ballasts.
  13. Voltage drop protection – Patented.
  14. For safety, there is no leakage to load in off mode; Sensor is safety grounded for UL and CUL listed Five year warranty.

## 2.16 OCCUPANCY SENSORS (CEILING)

- A. This Contractor shall furnish and install ceiling mounted infrared occupancy sensor (CI-200 Series) as manufactured by Watt Stopper or approved equal.

## Quincy College

- B. The system shall be complete with power packs and slave power packs as indicated on the drawings.
- C. Ceiling Mounted Occupancy Sensors
  - 1. The ultrasonic occupancy sensors shall be capable of detecting presence in the floor area to be controlled by detecting doppler shifts in transmitted ultrasound.
  - 2. Ultrasonic sensing shall be volumetric in coverage with a frequency of 32.768 kHz at  $\pm 0.002\%$ . They shall utilize Advanced Signal Processing which automatically adjusts the detection threshold dynamically to compensate for constantly changing levels of activity and air flow throughout controlled areas.
  - 3. Sensors of varying frequencies shall not be allowed so as to prevent sensors from interfering with each other and to assure compatibility in the event more sensors are added.
  - 4. Sensors shall have temperature and humidity resistant, 32 kHz tuned ultrasonic receivers. Receivers shall have less than a 6dB shift in the humidity range of 10% to 90% and less than a 10dB shift in the temperature range of  $-20^{\circ}$  to  $60^{\circ}$  C.
  - 5. Detection shall be maintained when a person of average size and weight moves only within or a maximum distance of twelve inches either in a horizontal or vertical manner at the approximate speed of 12 inches per second. The sum of this distance, volume and speed represent the average condition ultrasonic sensors must meet in order for the lights to not go off when a person is reading or writing while seated at a desk.
  - 6. Sensors shall have a DIP switch override-ON function for use in the event of failure. The LED is maintained ON so as to be visible from the floor as a constant reminder that the automatic function has been by-passed.
  - 7. Sensors shall incorporate an output disable feature for easy troubleshooting.
  - 8. Sensors shall be ceiling mounted and shall not protrude more than 1.50 inches to blend in aesthetically with the ceiling. The sensors shall offer two mounting options.
  - 9. The WT-600, WT-1100, and WT-2200 shall have an additional single-pole, double-throw isolated relay with normally open, normally closed, and common outputs rated at 1 Amp for 24 VDC. The isolated relay is available for use with HVAC control, data logging, and other control options.
  - 10. For accuracy, sensors shall have a DIP switch controlled, digital time delay that shall be adjustable from 15 seconds to 30 minutes.
  - 11. Sensors shall have user-adjustable sensitivity setting.
  - 12. Sensors shall cover  $360^{\circ}$  and up to 600 square feet for WT-605 and WT-600, 1100 square feet for WT-1005 and WT-1100, and 2200 square feet for WT-2200 .
  - 13. Sensitivity and timer controls shall be accessible from the front of the sensor and shall be concealed by a hinged cover.
  - 14. To ensure quality and reliability, sensor shall be manufactured by an ISO 9002 certified manufacturing facility and shall have a defect rate of less than 1/3 of 1%.
  - 15. Ultrasonic occupancy sensors shall be UL and CUL listed.
  - 16. Sensors shall have a standard 5 year warranty.
- D. Power and Slave Packs
  - 1. Power pack shall be a self contained transformer and relay module measuring 1.75" x 2.75" x 1.5".

## Quincy College

2. For ease and speed of installation, power and slave pack shall have 1/2" snap-in nipple for 1/2" knockouts and mounting on outside of enclosure
  3. Power and slave packs shall have dry contacts capable of switching 20 amp ballast load, 13 amp incandescent, 1 hp @ 120 VAC, 60Hz; 20 amp ballast @ 277 VAC, 60 Hz; 15 amp ballast @ 347 VAC, 60Hz; 15 amp ballast, 1 hp @ 220-240 VAC, 60 Hz; and 20 amp ballast, 13 amp incandescent, 1 hp @ 220-240 VAC, 50 Hz.
  4. Power packs shall provide a 24 VDC, 150 mA output.
  5. Power packs shall be capable of parallel wiring without regard to AC phases on primary.
  6. Slave packs shall be identical in physical size of power packs and contain no transformer power supply and shall switch 120VAC, 277 VAC, 347 VAC or low voltage.
  7. Power pack can be used as a standalone, low voltage switch, or can be wired to sensor for auto control.
  8. Power and slave packs shall have low voltage teflon coated leads, rated for 300 volts, suitable for use in plenum applications.
  9. To ensure quality and reliability, power and slave packs shall be manufactured by an ISO 9002 certified manufacturing facility and shall have a defect rate of less than 1/3 of 1%.
  10. Power and slave packs shall have a 5 year warranty.
  11. Power and slave packs shall be UL and CUL listed.
- E. Acceptable Manufacturers
1. The Watt Stopper, or Pre-Approved Equal: For pre-approval, provide all the information listed under section 1.04A and 1.04D a minimum of ten (10) working days prior to initial bid date.
  2. The listing of any manufacturer as "acceptable" does not imply automatic approval. It is the sole responsibility of the electrical contractor to ensure that any price quotations received and submittals made are for sensors which meet or exceed the specifications included herein.

## PART 3: EXECUTION

## 3.1 SPECIAL COORDINATION INSTRUCTIONS

- A. Locations of all wall outlets shall be verified with the Architect prior to roughing-in conduits. Refer to details and wall elevations on the architectural drawings; mounting heights indicated on these architectural drawings and/or specific dimensional information given to the Electrical Subcontractor by the Architect shall take precedence over such information indicated on the electrical drawings.
- B. If any discrepancy is found to exist between the electrical plans and any other drawings associated with the project, notify the Architect at once and have location verified before work is installed. Any reasonable change in location of outlets and equipment prior to installation shall not involve additional expense to the Owner. The term "reasonable" shall be interpreted at moving outlets or equipment locations a maximum of ten (10) feet in any direction from the location indicated on the Drawings.
- C. All feeder, branch circuit or auxiliary system-wiring passing through pull boxes and/or being made up in panelboards shall be properly grouped, bound and tied together in a neat and orderly manner, in keeping with the highest standards of the trade, with plastic cable ties. Loose ends of the cable ties shall be properly trimmed after making up same. Cable ties shall be TY-Raps as manufactured by Thomas & Betts, or Holub Industries, Inc., Quick-Wrap, or Burndy Unirap, or equal.

## Quincy College

- D. Branch circuits and auxiliary system wiring shall be peeled out of the wiring gutters of the terminal cabinets and panels at 90 degrees to circuit breakers and terminal lugs for connecting to same.
- E. All duplex convenience and power receptacles shall be mounted vertically with the grounding post to the bottom as the outlet is viewed from the front.
- F. At all points where steel support channels are cut and the unprotected steel is epoxed, two (2) coats of any approved rust preventative paint shall be applied to the bare surfaces, after proper cleaning. This requirement shall also apply to exposed job-cut threads of rigid steel conduit. Color and type of rust preventative paint shall be as directed by the Architect. In general, the paint for metals, which are galvanized, shall be aluminum paint and others will be of a zinc chromate type, or as otherwise approved.
- G. The Electrical Subcontractor shall furnish and install approved insulation at terminal connection points for all electrical conducting materials, such as transformer terminals, terminal studs, and at any other special locations as directed by the Architect. The determination of whether or not such special live parts shall be insulated shall rest exclusively with the Architect.

### 3.2 COOPERATION AND WORK PROGRESS

- A. The Electrical work shall be carried on under the usual construction conditions, in conjunction with all other work at the site. The Electrical Subcontractor shall cooperate with the Architect and all Subcontractors and equipment supplies working on the site, coordinate the work, and proceed in a manner so as not to delay the progress of the project.
- B. The Electrical Subcontractor shall coordinate his work with the progress of the building and other trades so that he shall complete his work as soon as conditions permit. Any overtime hours worked or additional costs incurred due to lack of or improper coordination with other trades by the Electrical Subcontractor shall be assumed by the Electrical Subcontractor without any additional cost to the Owner.
- C. The Electrical Subcontractor has a responsibility to coordinate the exact mounting arrangement and location of equipment indicated on the Drawings to allow for proper space requirements for equipment access, operation and maintenance. Particular attention shall be given in the field to such group installations. If it is questionable that insufficient space or conflict with the work of other subcontractors, or architectural or structural obstructions will result in an arrangement which will prevent proper access, operation or maintenance of the indicated equipment, the Electrical Subcontractor shall immediately notify the Architect and not proceed with this part of the contract work until definite instructions have been given to him by the Architect.
- D. It shall be the responsibility of the Electrical Subcontractor to coordinate the delivery of electrical equipment to the project prior to the time installation of equipment will be required; but he also shall make sure such equipment is not delivered too far in advance of such required installation, to assure that possible damage and deterioration of such equipment will not occur. Such equipment stored for an excessively long period of time (as determined in the opinion of the Architect) on the project site prior to installation may be subject to rejection by the Architect.

### 3.3 WIRING METHODS

- A. The various wiring methods shall be employed as follow:
  - 1. Power Wiring Feeders:
    - a. All feeders shall be installed in electrical metallic tubing or as indicated on the Drawings.

Quincy College

2. Branch Circuit Wiring:

- a. Branch circuit wiring shall be installed in electrical metallic tubing where branch wiring is to be installed exposed. Branch circuit wiring above hung ceilings or installed in stud partitions shall be armored cable (Type "MC").

3. Fire Alarm System:

- a. #16 twisted pair armored cable for fire alarm initiation circuit, 2c#14 armored cable for the fire alarm strobe circuit and #16 twisted pair for speaker circuits. All fire alarm system wiring shall meet the requirements of the fire alarm system equipment manufacturer.

3.4 COLOR CODING

- A. Provide color coding for secondary service, feeders and branch circuits as follows:

PHASE	COLOR
A	Black
B	Red
C	Blue
Neutral	White
Equipment Ground	Green

- B. Make connections to terminals from left to right arranged Phase A, B, and C.
- C. Color code wiring for signal systems differently from power wiring described above. White and green colored insulation shall only be used with color tracer. Provide one of following methods for single or multi-conductor cables.
- D. Spiral or longitudinal color stripe (tracer), running full length of cable.
- E. Printed numbers stamped every 12 inches on cable insulation.
- F. Numbered wire markers, Brady or equal, at junction boxes and termination points.
- G. Provide same color-coding for switch legs as corresponding phase conductor.
- H. Provide colored plastic tape of specified color code identification for large size conductors available only in black. Wrap tape three complete turns around conductor, at ends and at connections and splices.

3.5 MOTORS, CONNECTIONS AND CONTROLS

- A. Make splices and terminations equivalent electrically and mechanically to conductor insulation.
- B. Make splices in branch circuit wiring with solderless, screw- on connectors Ideal, Scotchlok, T&B or equal, rated 600V, of size and type required by manufacturer's recommendation, with temperature ratings equal to those of cable insulation. Insulate splices with integral covers or with plastic, rubber, or friction tape, Permacal, or equal, to maintain integrity of cable insulation.
- C. Make splices and terminations to conductors #8 and larger with corrosion-resistant, high conductivity, pressure indent, hex screw or bolt clamp connections, with or without tongues, designed specifically for intended service. Connectors for cables 250 MCM and larger shall have two clamping elements or compression indents. Terminals for bus connections shall have two bolt holes. Split bolt connectors, Burndy or equal, shall be acceptable for all splices of conductors #8 and larger.
- D. Make splices at motor junction boxes with pressure indent connectors or split-bolt connectors as specified herein.

Quincy College

- E. Provide standard bolt-on lugs with allen of cap screws to attach copper wire and cable to disconnect switches and other electrical equipment.

### 3.6 SUPPORTS AND ATTACHMENTS

- A. Boxes and pendants for surface mounted fixtures shall be supported in an approved manner. Boxes and supports shall be fastened with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units, with machine screws on steel work with locknuts. Threaded studs provided with lock-washers and nuts.

### 3.7 FIRE ALARM SYSTEM INSTALLATION AND TESTING

#### A. Installation

1. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.
2. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.
3. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.

#### B. Test:

1. Provide the service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment to technically supervise and participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72, Chapter 7.
2. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.
3. Close each sprinkler system flow valve and verify proper supervisory alarm at the FAC.
4. Verify activation of all flow switches.
5. Open initiating device circuits and verify that the trouble signal actuates.
6. Open and short signaling line circuits and verify that the trouble signal actuates.
7. Open and short Notification Appliance Circuits and verify that trouble signal actuates.
8. Ground all circuits and verify response of trouble signals.
9. Check presence and audibility of tone at all alarm notification devices.
10. Check installation, supervision, and operation of all intelligent smoke detectors using the Walk Test.
11. Each of the alarm conditions that the system is required to detect should be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FAC and the correct activation of the control points.
12. When the system is equipped with optional features, the manufacturer's manual should be consulted to determine the proper testing procedures. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality and similar.

#### C. Final Inspection:

Quincy College

**ELECTRICAL**

## Quincy College

1. At the final inspection, an authorized representative of the manufacturer of the major equipment shall demonstrate that the systems function properly in every respect.

## D. Instruction:

1. Provide instruction as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.
2. The Subcontractor and/or the Systems Manufacturer's authorized representatives shall provide a typewritten "Sequence of Operation."

## 3.8 RUBBISH REMOVAL

- A. The Subcontractor shall, after completion of each days work, remove all rubbish, waste, tools and miscellaneous construction materials and equipment caused by and used in the execution of his work.
- B. Immediately after unpacking, the Subcontractor shall collect and remove from the building all packing materials, case lumber, excelsior, wrapping and other rubbish.

## 3.9 SECONDARY ELECTRICAL SERVICE

- A. The existing building electric service is 120/208 volt three phase four wire and originates from a National Grid pad mounted transformer.

## 3.10 TEMPERATURE CONTROL SYSTEM

- A. The temperature control system is basically a solid state electric system wired and installed by the Temperature Control Subcontractor.
- B. Electrical Subcontractor shall provide power to the temperature control panel as indicated on the drawings.

## 3.11 TELEPHONE SYSTEM

- A. This Subcontractor shall furnish and install telephone conduits of sizes indicated on the Drawings.
- B. It is the intent that all telephone outlets be wired by the Electrical Subcontractor. Exact outlet locations shall be verified by the Architect and the Electrical Subcontractor in the field.
- C. The Subcontractor shall furnish and install all telephone outlets and plates. Telephone outlets shall have a Cat. 5e-rating.
- D. The Electrical Subcontractor shall furnish and install all telephone cables as indicated on the drawings. The telephone cables shall be Cat. 5e.
- E. Final termination at the telephone backboard shall be performed by Verizon.
- F. The owner shall pay all charges assessed by Verizon for telephone since installation.

## 3.12 DATA SYSTEM

- A. This Subcontractor shall furnish and install data conduits with wiring as indicated on the Drawings.
- B. It is the intent that all data outlets be wired by the Electrical Subcontractor. Exact outlet locations shall be verified by the Architect and the Electrical Subcontractor in the field.
- C. The Subcontractor shall furnish and install all data outlets and plates. Data outlets shall have a Cat. 5e rating.

## Quincy College

- D. The Electrical Subcontractor shall furnish and install all data cables as indicated on the drawings. The data cables shall be Cat. 5e.
- E. Final termination at the data backboard shall be performed by the Electrical Subcontractor.

**3.13 TELEVISION SYSTEM**

- A. This Subcontractor shall furnish and install data conduits with wiring as indicated on the Drawings.
- B. It is the intent that all television outlets be wired by the Electrical Subcontractor. Exact outlet locations shall be verified by the Architect and the Electrical Subcontractor in the field.
- C. The Subcontractor shall furnish and install all television outlets and plates. Data outlets shall have a Cat. 5e rating.
- D. The Electrical Subcontractor shall furnish and install all data cables as indicated on the drawings. The data cables shall be Cat. 5e.
- E. Final termination at the television backboard shall be performed by the Electrical Subcontractor.

**3.14 QUIET OPERATION**

- A. All equipment and material furnished by this Subcontractor shall operate under all conditions of load without objectionable noises or vibrations, which, in the opinion of the Architect, is objectionable. Where sound or vibration conditions arise which are considered objectionable by the Architect, this Subcontractor shall eliminate same in a manner approved by the Architect.

**3.15 CUTTING, CORING, DRILLING AND PATCHING**

- A. Cutting, coring, drilling and patching of holes for the Electrical Work shall be performed by the Electrical Subcontractor when the largest dimension of the opening is 6 inches or less. If the largest dimension of the opening exceeds 6 inches, the General Contractor shall perform the cutting and patching for the work of the Subcontractor. Refer to Section 01045 - Cutting and Patching.

**3.16 TESTING AND INSPECTION**

- A. Test and inspect work of this Section as required by Contract Documents, codes, standards and authorities that have jurisdiction, to satisfaction of Architect. Tests specified in this Section shall be construed as minimum requirements. Notify Architect and Authorities at least two working days prior to testing.
- B. Furnish Architect with certificates of testing and inspection of electrical systems by an independent testing company, if required by local codes, indicating approval of Authorities having jurisdiction, and conformance to Specifications.
- C. Perform all required adjustments and settings. Verify and correct deficiencies as necessary including voltages, tap settings, trip settings and phasing of equipment from distribution system to point of use. Voltage settings shall be tested and adjusted as necessary at locations of distribution system, when building is complete and operational.
- D. Provide necessary testing equipment.
- E. Failure or defects in workmanship or materials revealed by tests shall be replaced and subsequently retested to the satisfaction of the Architect.
- F. Remove and replace any transformer, ballast, dimmer, reactor or solenoid found to have noise output exceeding specified level of identical devices.

Quincy College

- G. Owner will not be responsible for material and equipment before testing and acceptance.

END OF SECTION

# SAVILLE HALL

---

# INTERIOR ALTERATIONS

24 SAVILLE AVENUE

QUINCY, MA

## DRAWING LIST

- G-001 TITLE SHEET
- AD-101 FIRST FLOOR DEMOLITION PLAN
- A-101 FIRST FLOOR PLAN
- A-102 FIRST FLOOR REFLECTED CEILING PLAN
- A-201 INTERIOR ELEVATIONS
- A-202 INTERIOR ELEVATIONS
- A-501 DOOR SCHEDULE AND DETAILS
- FP-1 FIRE PROTECTION
- P-1 PLUMBING
- P-2 PLUMBING
- M-1 HVAC FLOOR PLAN
- E-1 SECOND FLOOR LIGHTING & ELECTRICAL PLAN
- E-2 RISER DIAGRAMS, LEGEND, & SCHEDULES

QUINCY COLLEGE

SAVILLE HALL  
24 SAVILLE AVENUE  
QUINCY, MA 02109  
617-594-1700



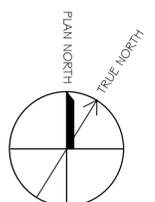
SAVILLE HALL  
INTERIOR ALTERATIONS  
24 SAVILLE AVENUE QUINCY, MA

MARK	DATE	DESCRIPTION

PROJECT NO: QC0736.2  
DATE: 01/18/13  
SCALE: AS NOTED  
DRAWN:  
CHECKED BY:

TITLE SHEET

**G-001**

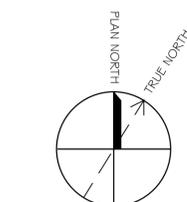
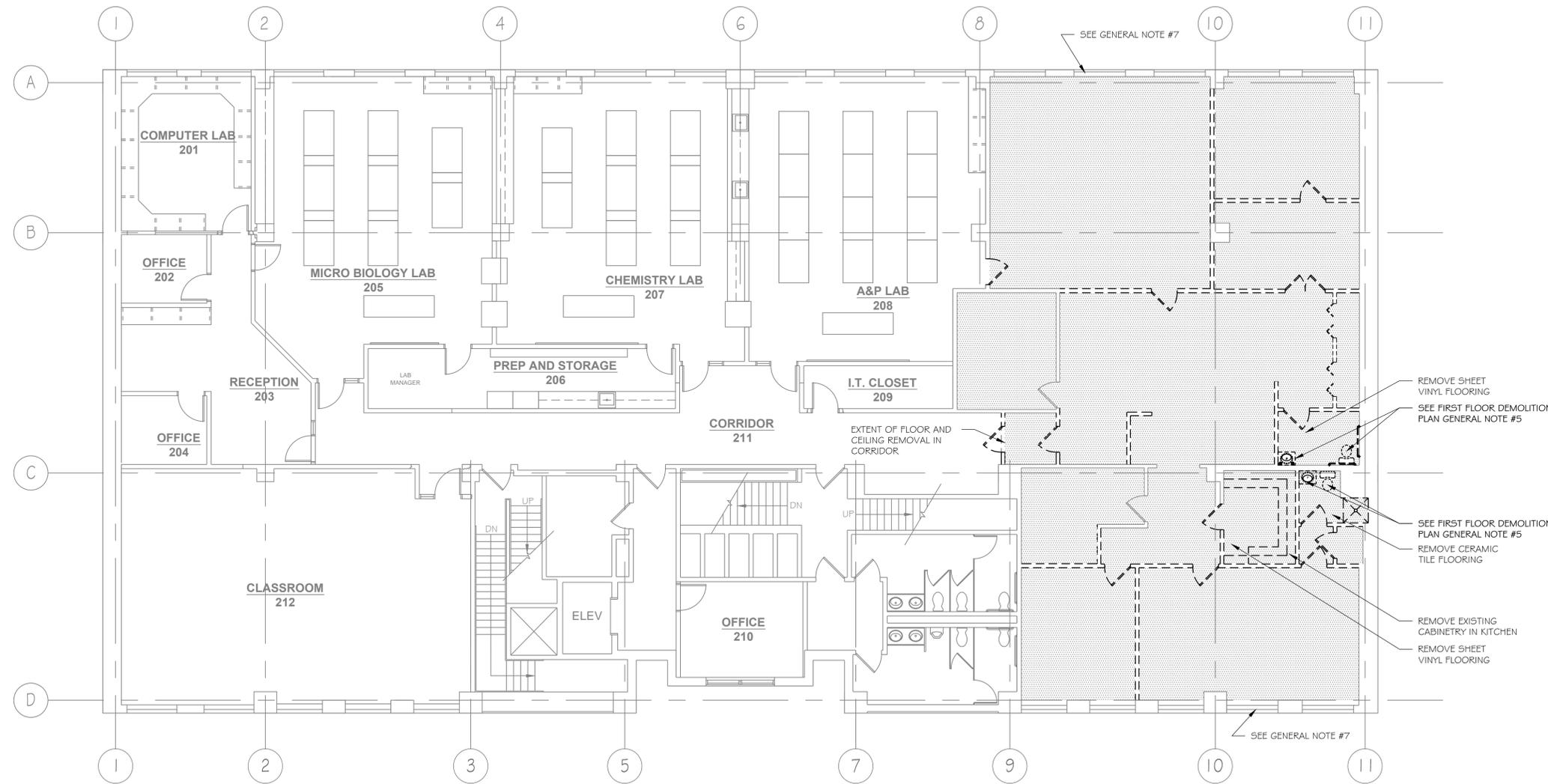


**FIRST FLOOR DEMOLITION PLAN  
GENERAL NOTES**

1. ALL WORK SHOWN ON THIS DRAWING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.
2. PLUMBING AND ELECTRICAL DISCONNECTIONS SHALL BE PERFORMED BY THE FILED SUBCONTRACTOR FOR THAT TRADE. SEE THE PLUMBING AND ELECTRICAL DRAWINGS FOR WORK TO BE PERFORMED BY THE FILED SUBCONTRACTORS.
3. COORDINATE ALL WORK TO MINIMIZE DISRUPTION TO THE OWNER'S USE OF THE OCCUPIED PORTIONS OF THE BUILDING. SEGREGATE THE WORK AREA FROM THE OCCUPIED PORTIONS OF THE BUILDING WITH DUST PARTITIONS WITH A SMOOTH PLYWOOD SURFACE ON THE OCCUPIED SIDE OF THE PARTITION. NOISY WORK AND THE DELIVERY OF MATERIALS SHALL BE SCHEDULED SO AS NOT TO DISRUPT THE OWNER'S USE OF THE BUILDING.
4. CONSTRUCTION WASTE FROM DEMOLITION SHALL BE SALVAGED OR RECYCLED TO THE EXTENT PRACTICAL. SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN INDICATING ITEMS TO BE SALVAGED OR RECYCLED. ALL OTHER WASTE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS.
5. PLUMBING FIXTURES ARE TO BE REMOVED BY PLUMBING SUBCONTRACTOR. SEE PLUMBING DRAWINGS.
6. REMOVE EXISTING CHAIR RAILS AND BASE FROM EXISTING PARTITIONS TO REMAIN IN THE PROJECT AREA.
7. PROTECT EXISTING WINDOW TREATMENTS DURING CONSTRUCTION OR REMOVE STORE AND REINSTALL. CLEAN AND RESTORE TO FUNCTIONING CONDITION OR REPLACE WITH NEW AT PROJECT COMPLETION.

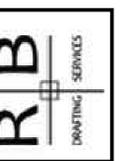
**FIRST FLOOR DEMOLITION PLAN LEGEND**

- EXISTING STUD PARTITION TO BE REMOVED 
- EXISTING DOOR, FRAME AND HARDWARE TO BE REMOVED 
- EXISTING BI-FOLD DOORS, FRAMES AND HARDWARE TO BE REMOVED 
- EXISTING CARPET AND SUSPENDED CEILING TO BE REMOVED UNLESS NOTED OTHERWISE 



**A1 FIRST FLOOR DEMOLITION PLAN**  
1/8"=1'-0"  
0 4' 8' 16'

QUINCY COLLEGE  
SAVILLE HALL  
24 SAVILLE AVENUE  
QUINCY, MA 02409  
617-594-1700



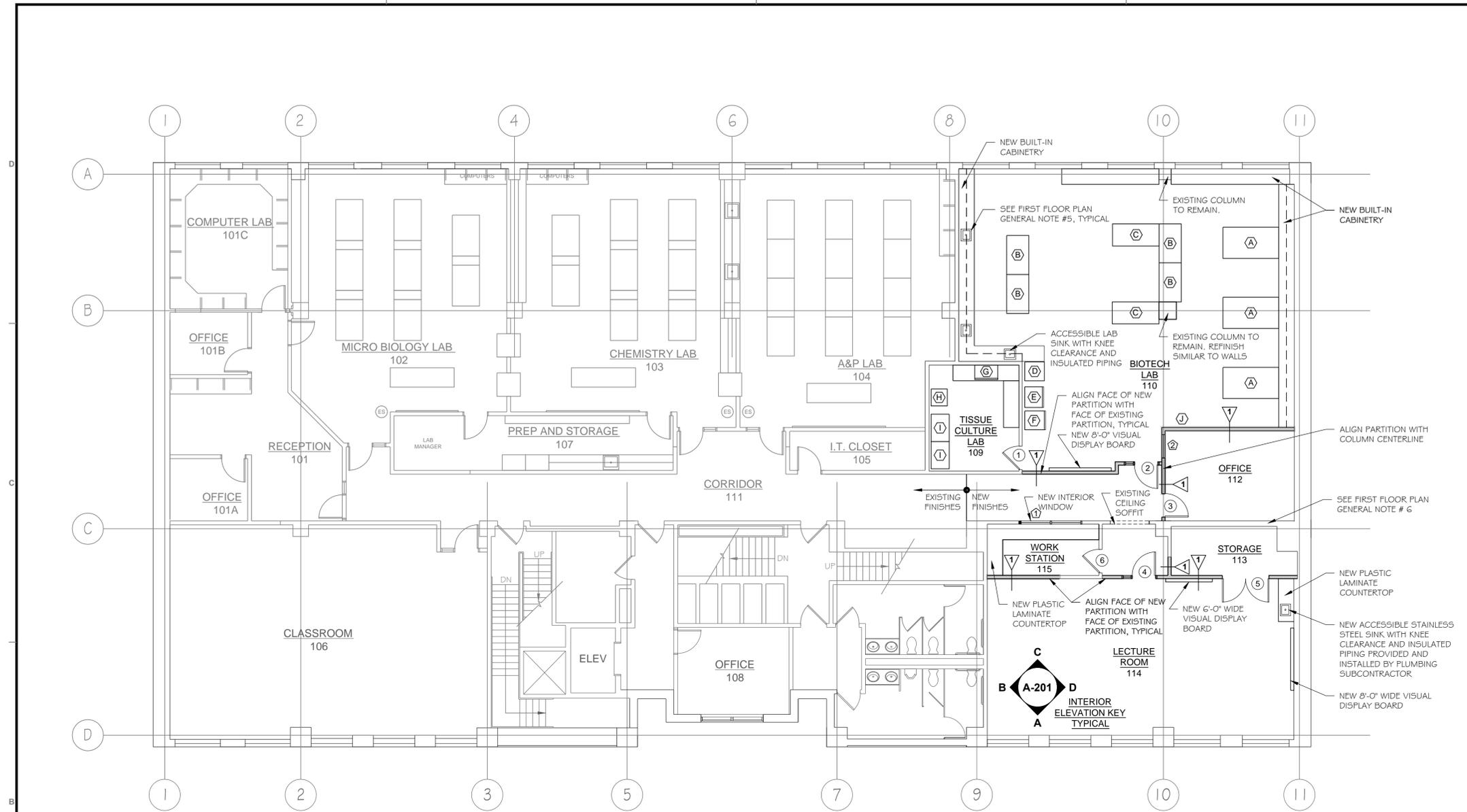
**SAVILLE HALL  
INTERIOR ALTERATIONS**  
24 SAVILLE AVENUE  
QUINCY, MA

REVISIONS:	DESCRIPTION:
MARK:	DATE:

PROJECT NO: QC0736.2  
DATE: 01/18/13  
SCALE: AS NOTED  
DRAWN:  
CHECKED BY:

FIRST FLOOR  
DEMOLITION PLAN

**AD-101**



**FIRST FLOOR PLAN GENERAL NOTES**

1. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE MASSACHUSETTS BUILDING CODE.
2. THE INFORMATION SHOWN ON THIS PLAN WAS COMPILED FROM VARIOUS SOURCES AND MAY NOT REFLECT THE ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD.
3. ALL WORK SHOWN ON THIS DRAWING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.
4. SEE THE PLUMBING, AND ELECTRICAL DRAWINGS FOR WORK TO BE PERFORMED BY THE FILED SUBCONTRACTORS.
5. NEW LABORATORY SINK, FAUCET AND TRIM PROVIDED BY THE GENERAL CONTRACTOR AND CONNECTED BY THE PLUMBING SUBCONTRACTOR.
6. PATCH EXISTING WALLS IN THE PROJECT AREA WHERE EXISTING CHAIR RAILS AND BASE HAVE BEEN REMOVED AND IN OTHER AREAS REQUIRED FOR A SMOOTH FINISHED WALL SURFACE.

**FIRST FLOOR PLAN LEGEND**

NEW PARTITION CONSTRUCTED OF 3 1/2" STEEL STUDS FROM THE FLOOR TO THE UNDERSIDE OF THE STRUCTURE ABOVE WITH 5/8" GYPSUM WALLBOARD ON EACH SIDE, UP TO STRUCTURE ABOVE. PROVIDE ACOUSTICAL BATT SOUND INSULATION IN ALL NEW PARTITIONS, TAPE, FINISH AND PAINT ALL EXPOSED SURFACES.

FURNITURE KEY  
- SEE FIRST FLOOR FURNITURE KEY

DOOR NUMBER  
- SEE DOOR SCHEDULE ON SHEET A-501

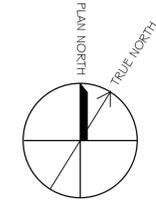
INTERIOR WINDOW NUMBER



EQUIPMENT AND CASEWORK LEGEND							
MARK	ITEM	MANUFACTURER	MODEL NUMBER	DIMENSIONS	UTILITIES REQUIRED	FURNISHED BY	INSTALLED BY
A	CLASSROOM TABLE	HAMILTON SCIENTIFIC INC.		30" X 4'-0" X 86"	-	CONTRACTOR	CONTRACTOR
B	MOBILE TABLE	HAMILTON SCIENTIFIC INC.		34" X 5'-0"	-	CONTRACTOR	CONTRACTOR
C	MOBILE TABLE	HAMILTON SCIENTIFIC INC.		34" X 6'-0"	-	CONTRACTOR	CONTRACTOR
D	REFRIGERATOR/FREEZER 4° C			29"W X 30"D X 68" H	POWER	OWNER	OWNER
E	REFRIGERATOR 20° C			32"W X 29"D X 71" H	POWER	OWNER	OWNER
F	GLASS REFRIGERATOR 80° C			29"W X 32"D X 76" H	POWER	OWNER	OWNER
G	REFRIGERATOR 80° C			35.4"W X 22.3"D X 32.7" H	POWER	OWNER	OWNER
H	INCUBATOR			26"W X 25"D X 40" H	POWER	OWNER	OWNER
I	BIO SAFETY CABINET			42"W X 28"D X 90" H	POWER	OWNER	OWNER
J	EMERGENCY SHOWER / EYE WASH				TEMPERED WATER	PLUMBING SUBCONTRACTOR	PLUMBING SUBCONTRACTOR

FIRST FLOOR ROOM FINISH LEGEND						
ROOM NUMBER	ROOM NAME	WALLS	BASE	FLOORING	CEILING	
					MATERIAL	HEIGHT
109	TISSUE CULTURE LAB	PAINTED	VINYL	VCT	ACT	8'-6"
110	BIOTECH LAB	PAINTED	VINYL	VCT	ACT	8'-6"
111	CORRIDOR	PAINTED	VINYL	VCT	ACT	SEE FINISH NOTE #2
112	OFFICE	PAINTED	VINYL	CARPET	ACT	8'-6"
113	STORAGE	PAINTED	VINYL	VCT	ACT	8'-6"
114	LECTURE ROOM	PAINTED	VINYL	VCT	ACT	8'-6"
115	WORK STATION	PAINTED	VINYL	CARPET	ACT	8'-6"

- FINISH NOTES:
1. PROVIDE FINISHES AT ALL WINDOW RETURNS, COLUMN ENCLOSURES, AND ALL OTHER EXPOSED SURFACES FOR A COMPLETELY FINISHED INTERIOR.
  2. PROVIDE NEW FINISHES AT PORTIONS OF CORRIDOR IN WORK AREA FOR A COMPLETELY FINISHED INTERIOR. MATCH EXISTING ADJACENT FINISHES AS CLOSELY AS POSSIBLE. CEILING TO MATCH EXISTING HEIGHT AND GRID.



**A1 FIRST FLOOR PLAN**  
1/8"=1'-0"  
0 4' 8' 16'

**QUINCY COLLEGE**  
SAVILLE HALL  
24 SAVILLE AVENUE  
QUINCY, MA 01918  
617-984-1700

**RIB**  
DRAWING SERVICES

**SAVILLE HALL**  
**INTERIOR ALTERATIONS**  
24 SAVILLE AVENUE  
QUINCY, MA

REVISIONS:	DATE:	DESCRIPTION:

PROJECT NO: QC0736.2  
DATE: 01/18/13  
SCALE: AS NOTED  
DRAWN:  
CHECKED BY:

FIRST FLOOR PLAN

**A-101**

**FIRST FLOOR REFLECTED CEILING PLAN  
GENERAL NOTES**

1. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE MASSACHUSETTS BUILDING CODE.
2. THE INFORMATION SHOWN ON THIS PLAN WAS COMPILED FROM VARIOUS SOURCES AND MAY NOT REFLECT THE ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD.
3. ALL WORK SHOWN ON THIS DRAWING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.
4. SEE THE PLUMBING, HVAC, AND ELECTRICAL DRAWINGS FOR WORK TO BE PERFORMED BY THE FILED SUBCONTRACTORS.

**FIRST FLOOR REFLECTED CEILING PLAN  
LEGEND**

NEW 2'-0" X 4'-0" FLUORESCENT LIGHT FIXTURE  
- PROVIDED AND INSTALLED BY  
ELECTRICAL FILED SUBCONTRACTOR.



NEW 2'-0" X 2'-0" SUSPENDED  
ACOUSTIC TILE CEILING  
- SEE ROOM FINISH SCHEDULE ON  
DRAWING A-101 FOR HEIGHTS



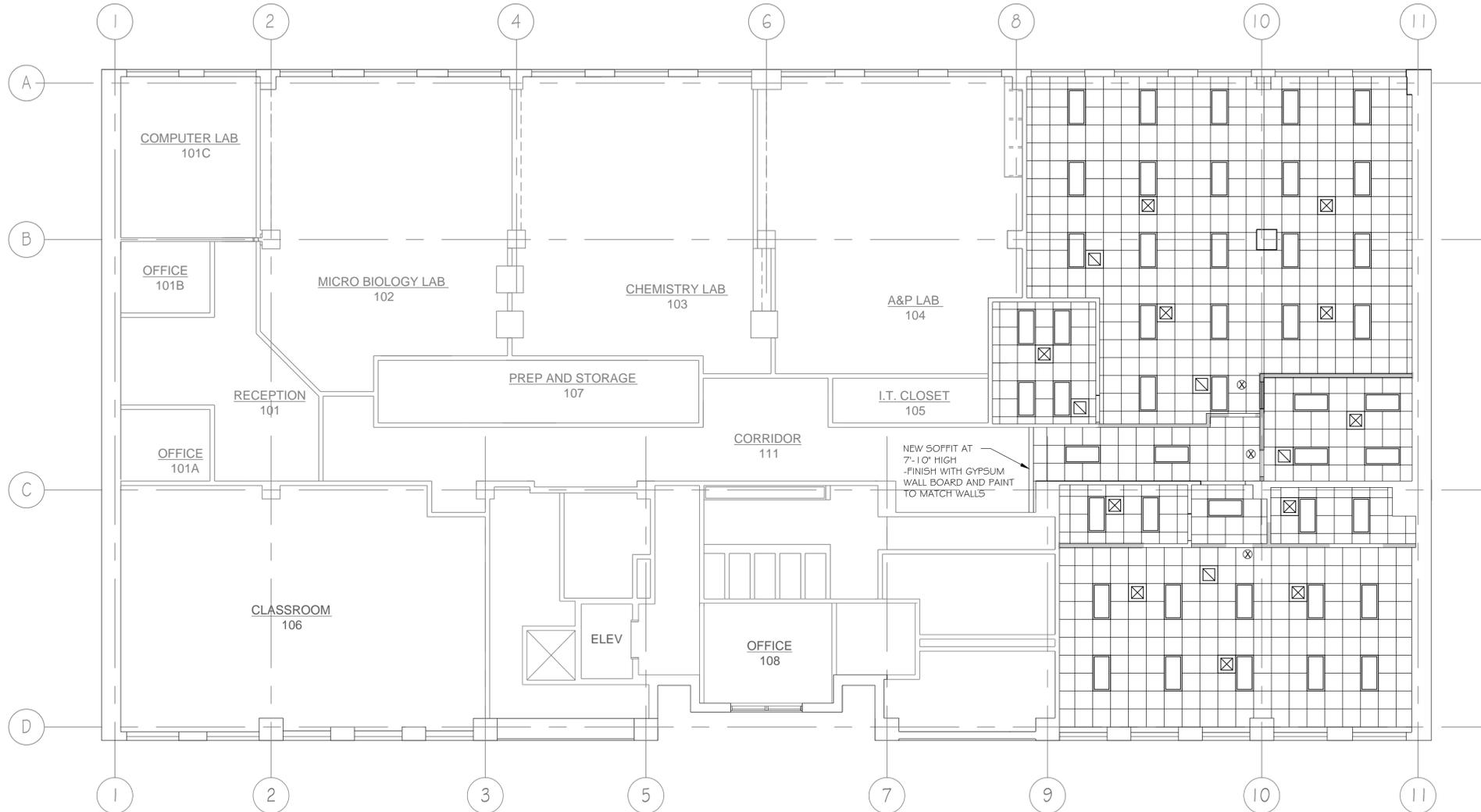
NEW EXIT SIGNS TO BE INSTALLED



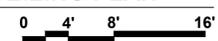
NEW SUPPLY AIR DIFFUSER  
TO BE INSTALLED



NEW RETURN OR EXHAUST  
AIR GRILLE TO BE INSTALLED

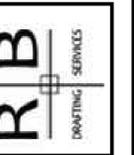


**A1 FIRST FLOOR REFLECTED CEILING PLAN**  
1/8"=1'-0"



QUINCY COLLEGE

SAVILLE HALL  
24 SAVILLE AVENUE  
QUINCY, MA 02169  
617-594-1700



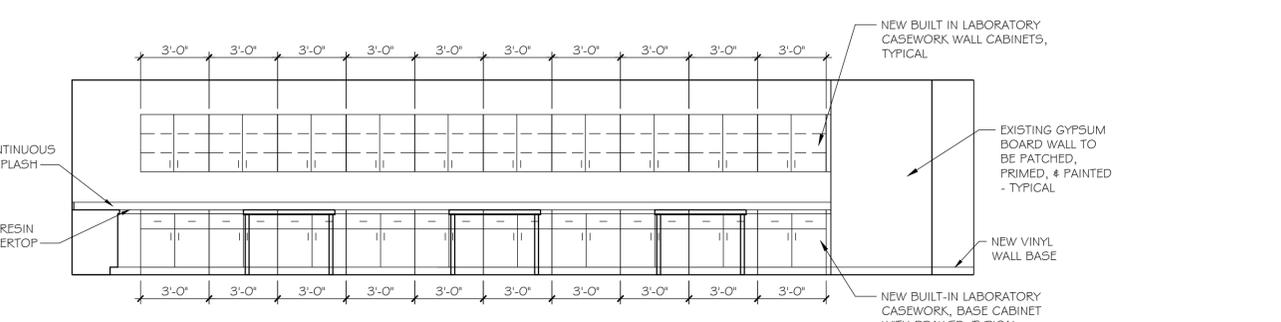
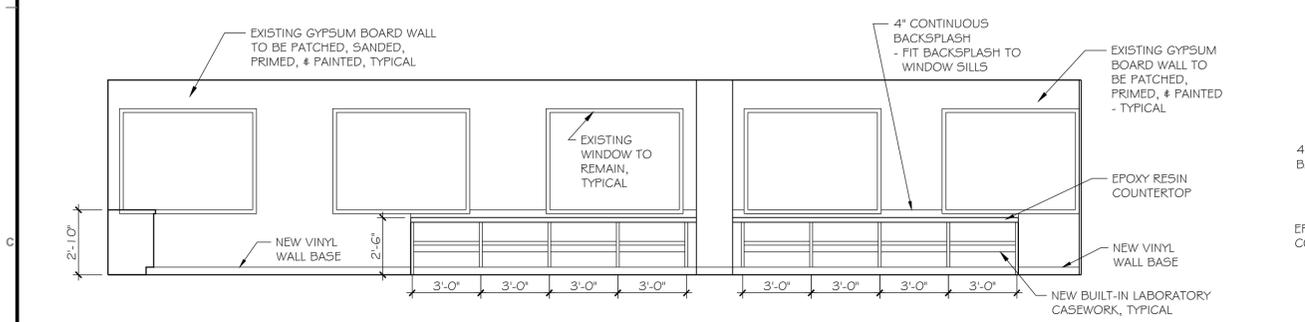
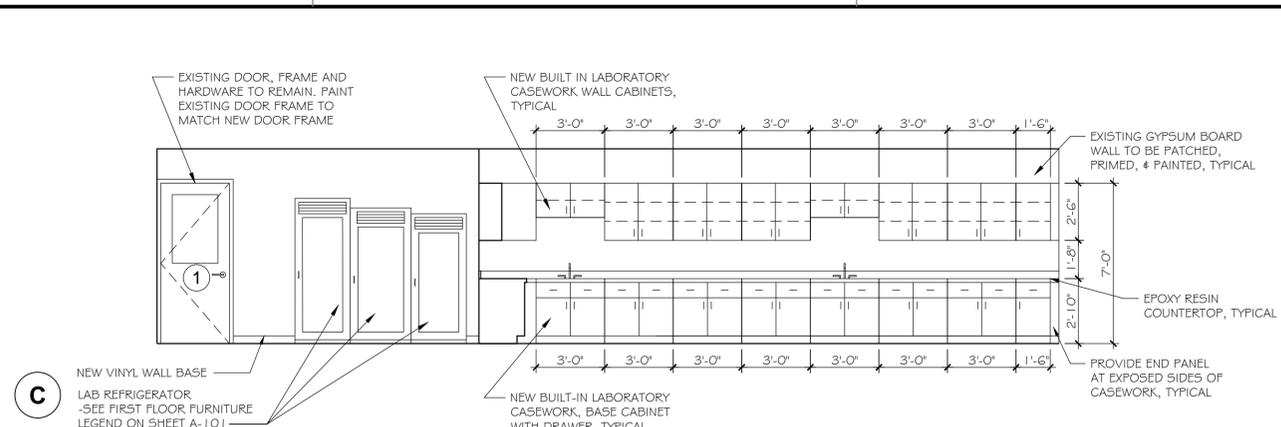
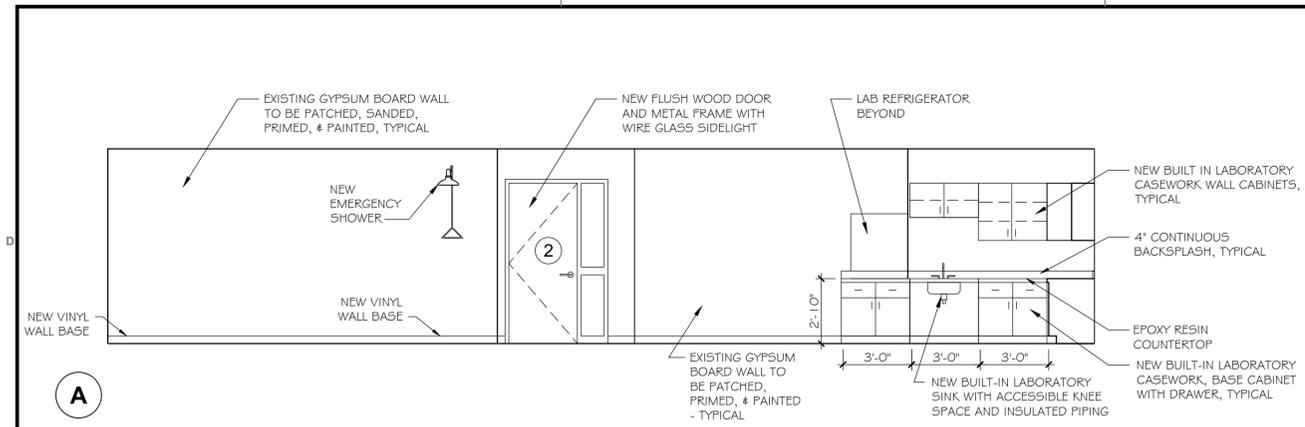
**SAVILLE HALL  
INTERIOR ALTERATIONS**  
24 SAVILLE AVENUE QUINCY, MA

REVISIONS:	DESCRIPTION:
MARK:	DATE:

PROJECT NO:	QC0736.2
DATE:	01/18/13
SCALE:	AS NOTED
DRAWN:	
CHECKED BY:	

FIRST FLOOR  
REFLECTED  
CEILING PLAN

**A-102**

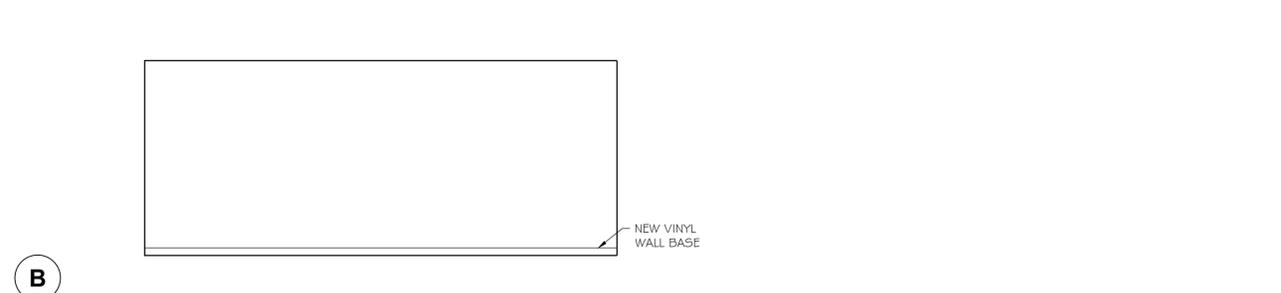
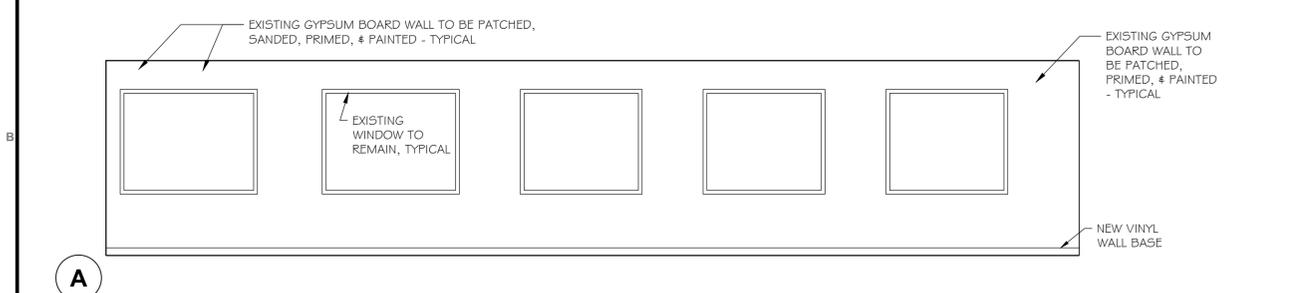


**B**

**C1 BIOTECH LAB INTERIOR ELEVATIONS**

1/4" = 1'-0"

0 2' 4' 8'

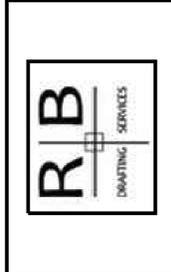
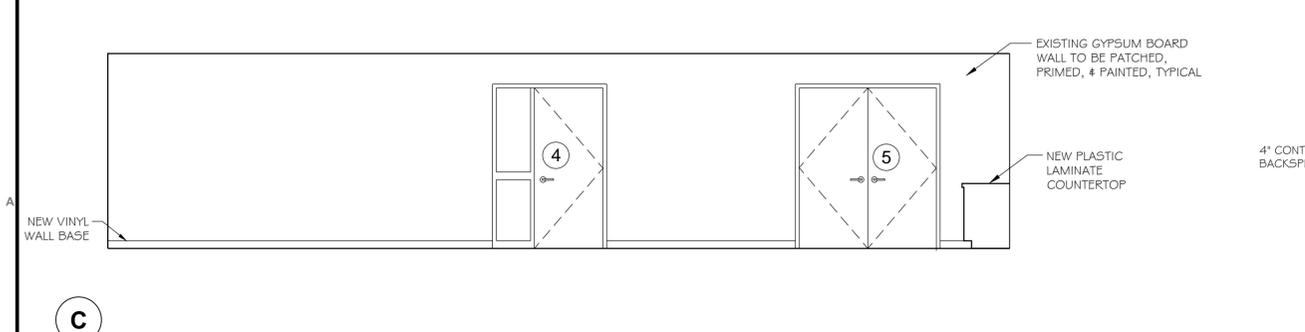


**A**

**C LECTURE ROOM INTERIOR ELEVATIONS**

1/4" = 1'-0"

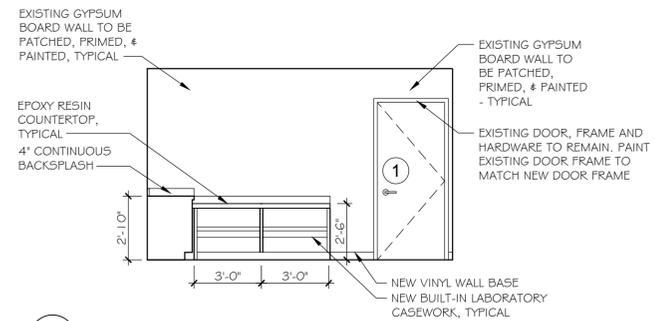
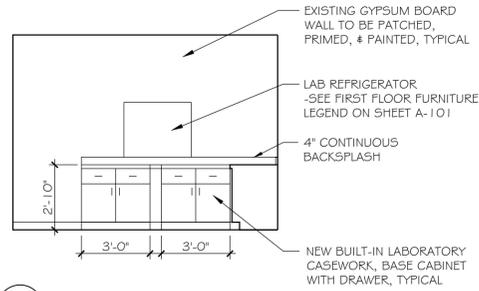
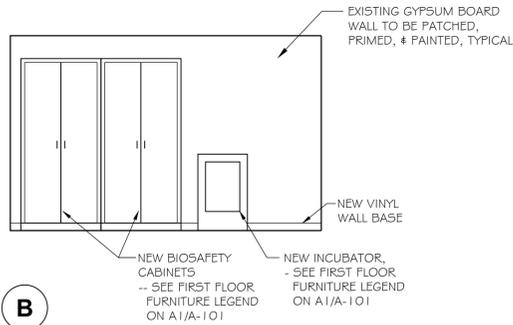
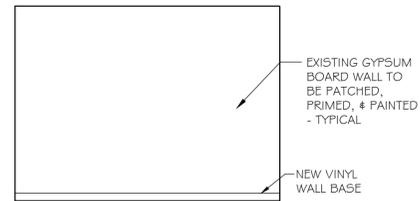
0 2' 4' 8'



REVISIONS:	DATE:	DESCRIPTION:

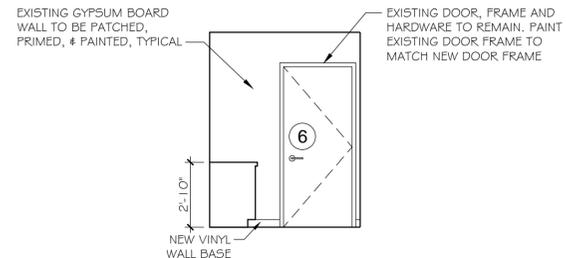
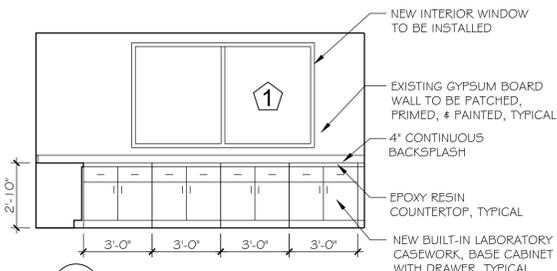
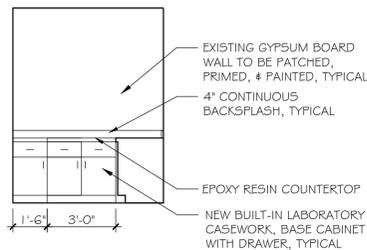
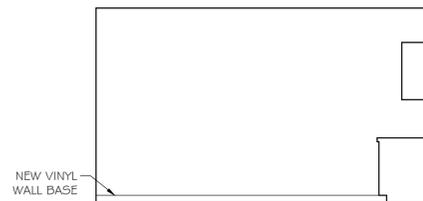
PROJECT NO: QC0736.2  
 DATE: 01/18/13  
 SCALE: AS NOTED  
 DRAWN:  
 CHECKED BY:

INTERIOR ELEVATIONS



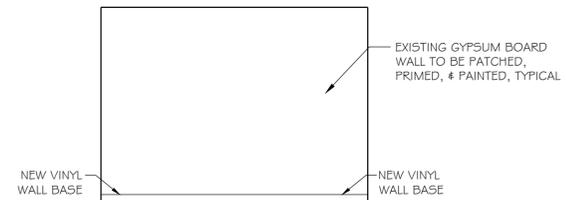
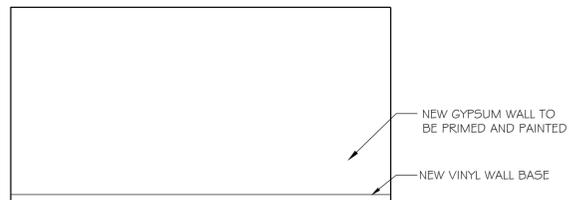
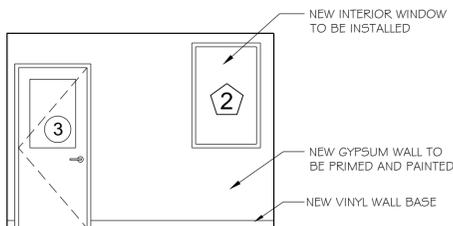
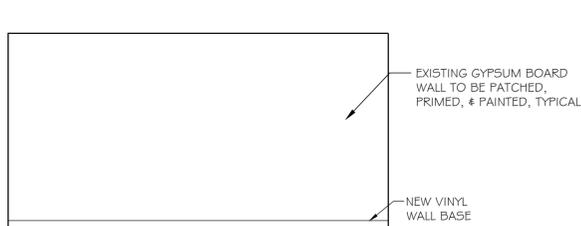
**A** **B** **C** **D**

**D1** **TISSUE CULTURE LAB INTERIOR ELEVATIONS**  
 1/4" = 1'-0"  
 0 2' 4' 8'



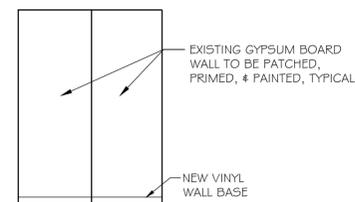
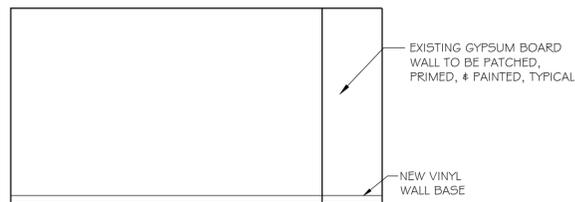
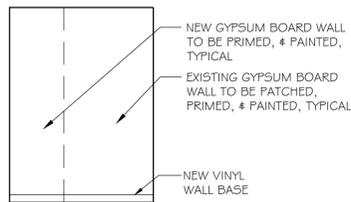
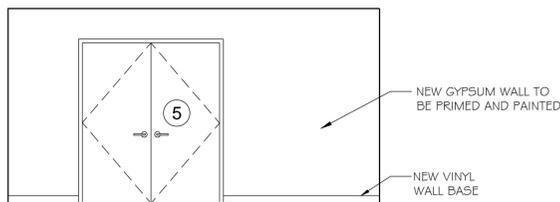
**A** **B** **C** **D**

**C1** **WORK STATION INTERIOR ELEVATIONS**  
 1/4" = 1'-0"  
 0 2' 4' 8'



**A** **B** **C** **D**

**B1** **OFFICE INTERIOR ELEVATIONS**  
 1/4" = 1'-0"  
 0 2' 4' 8'



**A** **B** **C** **D**

**A1** **STORAGE ROOM INTERIOR ELEVATIONS**  
 1/4" = 1'-0"  
 0 2' 4' 8'

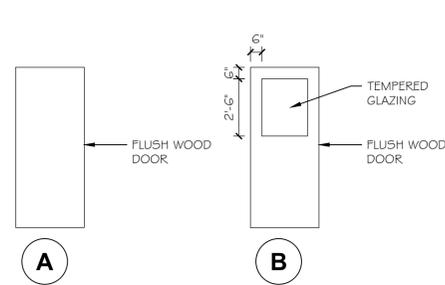
REVISIONS:	DATE:	DESCRIPTION:

PROJECT NO: QC0736.2  
 DATE: 01/18/13  
 SCALE: AS NOTED  
 DRAWN:  
 CHECKED BY:

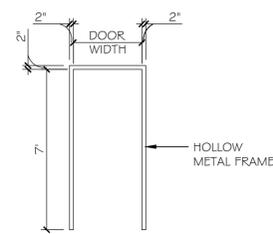
INTERIOR ELEVATIONS

DOOR AND FRAME SCHEDULE														
DOOR OPENING	DOOR				FRAME				DETAIL			FIRE RATING LABEL	HARDWARE	NOTES
	WIDTH	HEIGHT	THICKNESS	MATERIAL	DOOR TYPE	DOOR FRAME	MATERIAL	HEAD	JAMB	SILL				
1	3'-0"	7'-0"	1 3/4"	WOOD	B	C2	HOLLOW METAL	B1	B2	B4	-	1		
2	3'-0"	7'-0"	1 3/4"	WOOD	A	C3	HOLLOW METAL	B1	B2	B4	-	1		
3	3'-0"	7'-0"	1 3/4"	WOOD	B	C2	HOLLOW METAL	B1	B2	B3	-	2		
4	3'-0"	7'-0"	1 3/4"	WOOD	A	C3	HOLLOW METAL	B1	B2	B4	-	1		
5	(2) 3'-0"	7'-0"	1 3/4"	WOOD	A	C2	HOLLOW METAL	B1	B2	B4	-	3		
6	3'-0"	7'-0"	1 3/4"	WOOD	B	C2	HOLLOW METAL	B1	B2	B4	-	2		

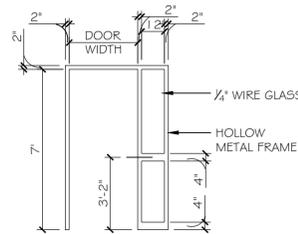
NOTES:  
1. SEE SPECIFICATIONS FOR HARDWARE REQUIREMENTS



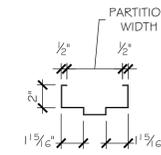
**A1 VIEWING WINDOW TYPES**  
1/4"=1'-0"  
0 2' 4' 8'



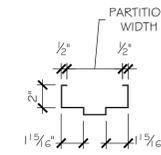
**C1 DOOR TYPES**  
1/4"=1'-0"  
0 2' 4' 8'



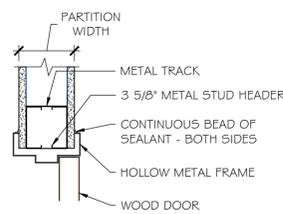
**C2 DOOR FRAME**  
1/4"=1'-0"  
0 2' 4' 8'



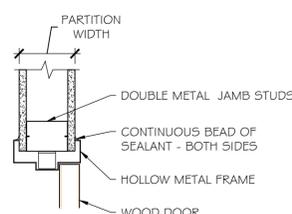
**C3 DOOR FRAME**  
1/4"=1'-0"  
0 2' 4' 8'



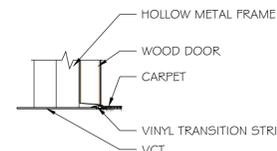
**C4 FRAME CONFIGURATION**  
1/4"=1'-0"  
0 2' 4' 8'



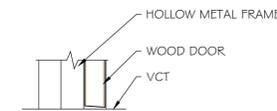
**B1 HEAD DETAIL**  
1/4"=1'-0"  
0 2' 4' 8'



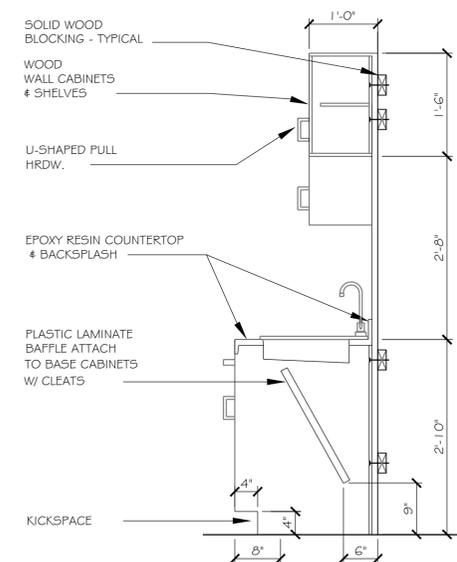
**B2 JAMB DETAIL**  
1/4"=1'-0"  
0 2' 4' 8'



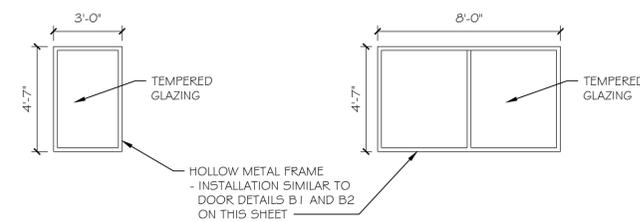
**B3 SILL DETAIL**  
1/4"=1'-0"  
0 2' 4' 8'



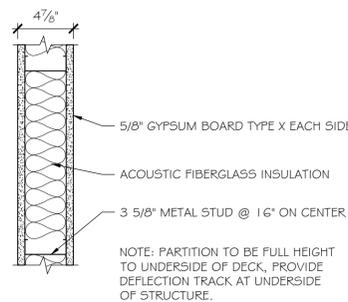
**B4 SILL DETAIL**  
1/4"=1'-0"  
0 2' 4' 8'



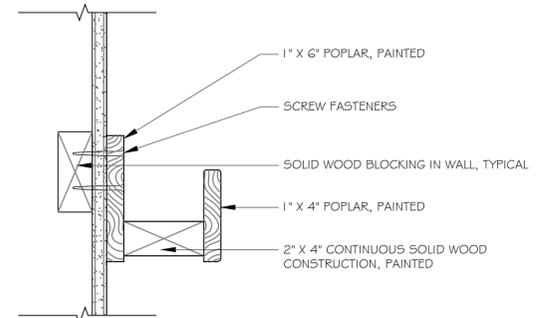
**B5 CABINET DETAIL**  
3/4"=1'-0"  
0 1' 2' 3'



**A3 WALL PARTITION TYPE**  
1 1/2"=1'-0"  
0 2' 4' 8'

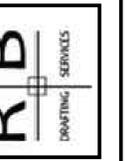


**A4 COUNTERTOP DETAIL**  
3/4"=1'-0"  
0 1' 2' 3'



**A5 CABLE TRAY DETAIL**  
3"=1'-0"  
0 3" 6" 9"

QUINCY COLLEGE



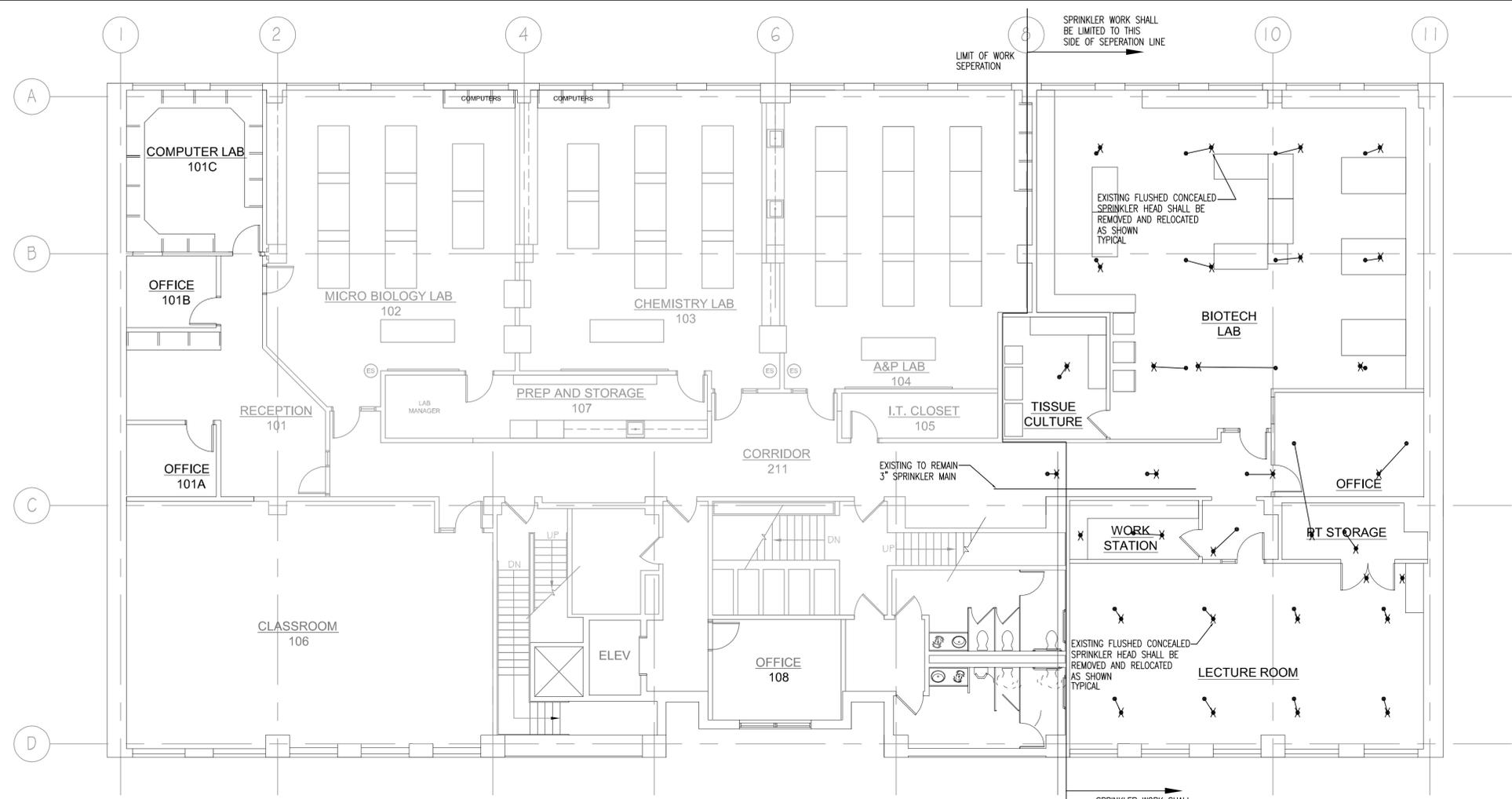
SAVILLE HALL  
INTERIOR ALTERATIONS  
24 SAVILLE AVENUE  
QUINCY, MA

REVISIONS:	MARK:	DATE:	DESCRIPTION:

PROJECT NO: QC0736.2  
DATE: 01/18/13  
SCALE: A5 NOTED  
DRAWN:  
CHECKED BY:

DOOR SCHEDULE AND DETAILS

A-501



**FIRE PROTECTION NOTES:**

THE PROPOSED REVISED SPRINKLER LAYOUT SHALL ADHERE TO ALL REQUIREMENTS OF NFPA 13 FOR LIGHT HAZARD OCCUPANCY

THE EXISTING SPRINKLER SYSTEM ON THE FIRST FLOOR SHALL BE REVISED TO ACCOMODATE THE REQUIRED SPRINKLER LAYOUT. IT WILL BE THE RESPONSIBILITY OF THE AWARDED SPRINKLER CONTRACTOR TO DOCUMENT THE LOCATION OF THE EXISTING SPRINKLER HEADS AND PIPING ALONG WITH THE PIPE SIZES.

SPRINKLER HEADS AT AREAS IN THE GARAGE THAT ARE AFFECTED BY THE REMOVAL OF THE GARAGE CEILING SHALL REMAIN UNDISTURBED UPON REMOVAL OF CEILING. UPON INSTALLATION OF NEW CEILING, SPRINKLER HEADS SHALL BE REMOVED AND REINSTALLED IMMEDIATELY AFTER INSTALLATION OF NEW CEILING. REVIEW ARCHITECTURAL DRAWINGS FOR AREA OF CEILINGS AFFECTED. SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION.

THE WET PIPE SPRINKLER SYSTEMS SHALL BE PROVIDED WHERE INDICATED ON THE PLANS AND IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13.

THE SYSTEMS SHALL BE HYDRAULICALLY DESIGNED TO MEET THE REQUIREMENTS OF NFPA 13. HYDRAULIC CALCULATIONS SHALL BE CONDUCTED FOR THE REVISED SPRINKLER SYSTEM AND THE SPRINKLER PIPING SHALL BE SIZED ACCORDINGLY.

THE REVISED FIRE PROTECTION PIPING SYSTEM SHALL BE INSTALLED AND TESTED BY CONTRACTORS AND PERSONNEL APPROPRIATELY LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS.

THE REVISED FIRE PROTECTION SYSTEM SHALL BE TESTED IN ACCORDANCE WITH APPLICABLE PROVISIONS OF CMR 780 AND NFPA STANDARDS. FUNCTIONAL TESTING OF REVISED FIRE PROTECTION SYSTEMS SHALL BE WITNESSED BY THE HEAD OF THE FIRE DEPARTMENT OR HIS DESIGNEE.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING THE PROPOSED SYSTEM INSTALLATION FOR REVIEW AND APPROVAL TO ARCHITECT, AND OWNERS INSURANCE CARRIER PRIOR TO SYSTEM INSTALLATION. SUBMITTED SHOP DRAWINGS SHALL CONTAIN PIPING AND HEAD LAYOUT, CEILING HEIGHTS, PIPE SIZES, HYDRAULIC REFERENCE POINTS, REMOTE AREAS, # OF HEADS WATER FLOW DATA, HANGER DETAILS, SEIZMIC BRACING LOCATIONS, LEGEND AND MASSACHUSETTS REGISTERED FIRE PROTECTION ENGINEERS STAMP AND SIGNATURE.

AS BUILT PLANS, AND CONTRACTORS MATERIAL AND TEST CERTIFICATES SHALL BE PROVIDED TO OWNER UPON COMPLETION.

CONSTRUCTION DOCUMENTS ARE ONLY INTENDED TO INDICATE TYPE/DESCRIPTION, AND GENERAL DESIGN LAYOUT. THEY ARE NOT INTENDED TO SHOW EVERY OFFSET, FITTING AND APPURTANENCE REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL FIRE PROTECTION SYSTEM. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE BID DOCUMENTS AND VISIT THE SITE PRIOR TO SUBMITTING A BID. THE COORDINATION OF THE SPRINKLER SYSTEM PIPING WITH OTHER TRADES , BUILDING STRUCTURE AND EXISTING INTERFERENCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SOME CHANGES IN PIPING ARRANGEMENT MAY BE REQUIRED DURING CONSTRUCTION DUE TO UNFORSEEN COMPLICATIONS. PIPING ALTERNATIVES SHALL BE REVIEWED WITH THE ARCHITECT OR ENGINEER PRIOR TO PROCEEDING WITH WORK.

ALL MATERIALS USED FOR INSTALLATION SHALL BE UL LISTED FOR FIRE PROTECTION USE .

PROVIDE AUXILIARY DRAINS AT ALL SYSTEM LOW POINTS.

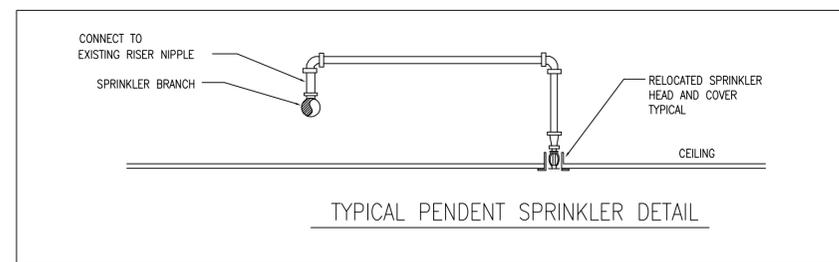
PROVIDE SLEEVES AND FIRE SEALS AT PENETRATIONS THROUGH ALL RATED WALLS.

HANGERS SHALL BE INSTALLED PER THE REQUIREMENTS OF NFPA #13 AND SMACNA SEIZMIC REQUIREMENTS.

ALL SPRINKLERS SHALL BE QUICK RESPONSE TYPE.

PROVIDE SIGNAGE AS REQUIRED BY NFPA #13 AND 780 CMR..

PIPING SHALL BE SCHEDULE 10 BLACK STEEL.



**FIRE PROTECTION NARRATIVE**

COMMONWEALTH OF MASSACHUSETTS - STATE BUILDING CODE  
 780 CMR, 10TH EDITION  
 FIRE PROTECTION SYSTEMS  
 CHAPTER 9  
 NARRATIVE REPORTS  
 780 CMR - 903.1.1  
 SECTION 3 - DESIGN RESPONSIBILITY FOR FIRE PROTECTION SYSTEMS  
 PARAGRAPH B

THE PROFESSIONAL ENGINEER (PE) PROVIDES A PARTIAL DESIGN AND SPECIFIES THE DESIGN CRITERIA TO BE USED BY THE INSTALLING CONTRACTOR WHO FINALIZES THE SYSTEM LAYOUT, PROVIDES CALCULATIONS TO CONFIRM THE DESIGN CRITERIA. THE PE REVIEWS AND APPROVES THE INSTALLING CONTRACTOR'S FINAL LAYOUT AND CALCULATIONS. THE PE IS CONSIDERED THE ENGINEER OF RECORD AND CERTIFIES SYSTEM INSTALLATION FOR CODE COMPLIANCE AND COMPLETION

**QUINCY COLLEGE**  
 SAVILLE HALL  
 24 SAVILLE AVENUE  
 QUINCY, MA 02184  
 617-584-1700

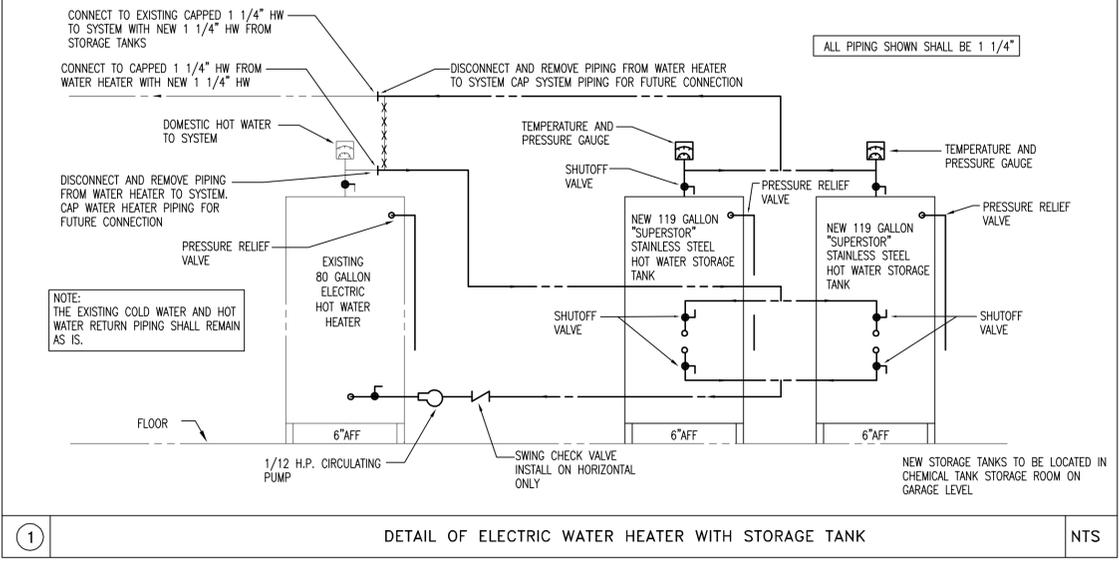
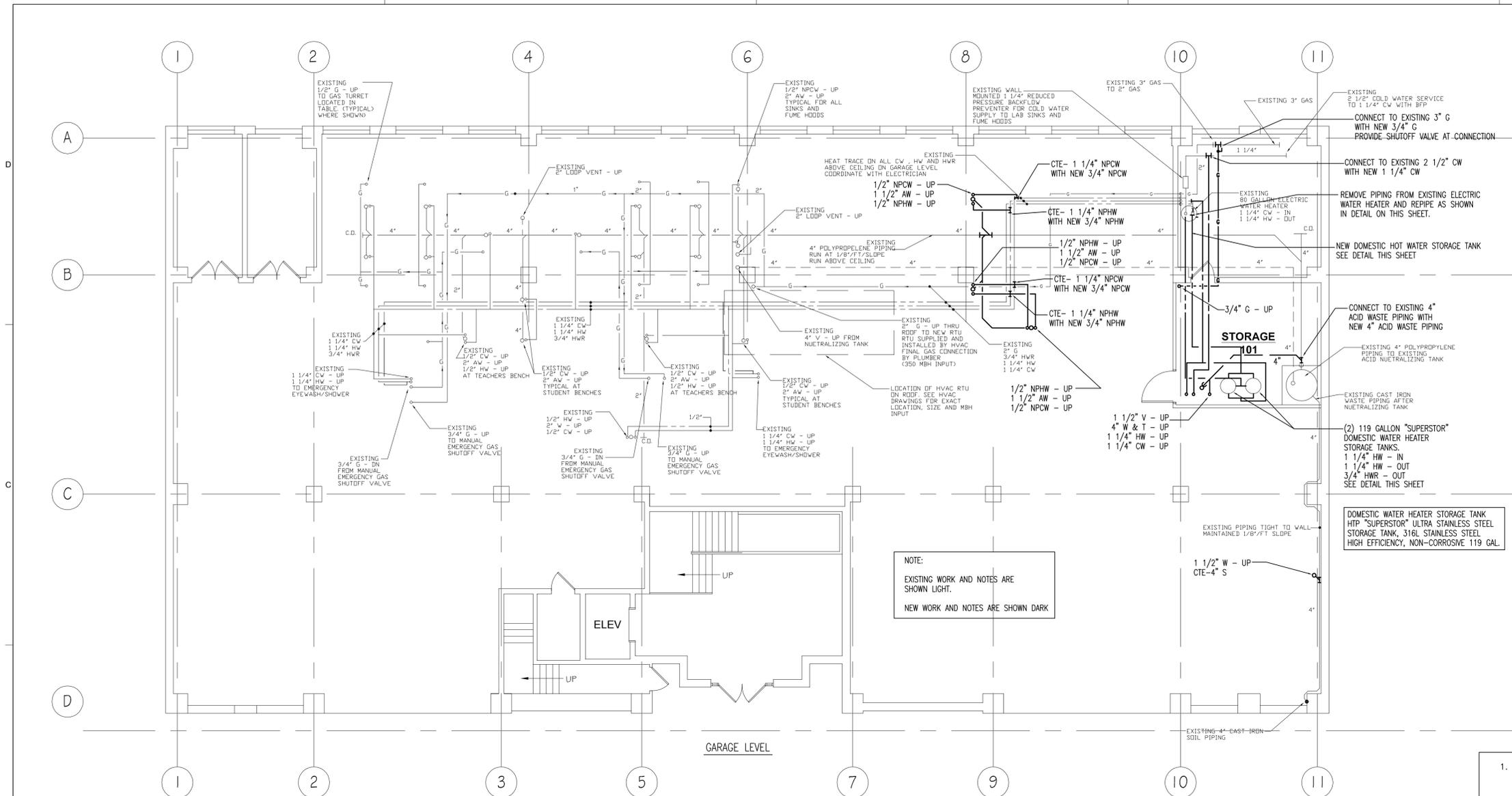
South Shore  
 Construction  
 Consultants  
 345 Quincy Ave  
 Braintree, MA 02184  
 Phone: 781-864-8776 / Fax: 781-864-8778

**SAVILLE HALL**  
**INTERIOR ALTERATIONS**  
 24 SAVILLE AVENUE  
 QUINCY, MA

REVISIONS:	DATE:	DESCRIPTION:

PROJECT NO:	0736.2
DATE:	01.18.13
SCALE:	AS NOTED
DRAWN:	
CHECKED BY:	

**FP-1**

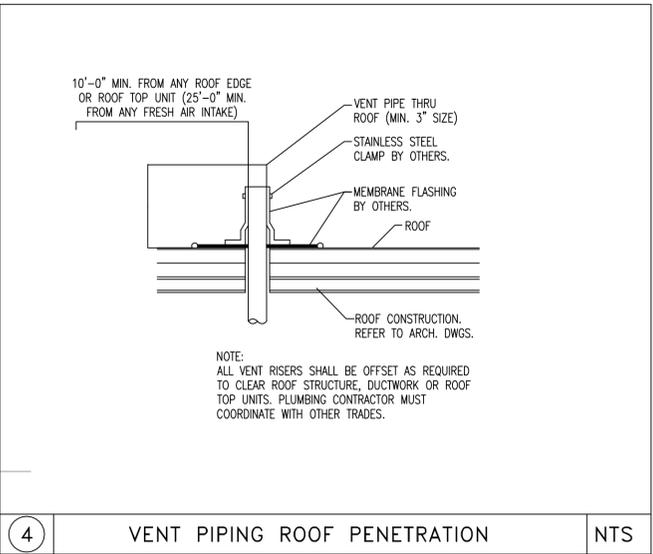
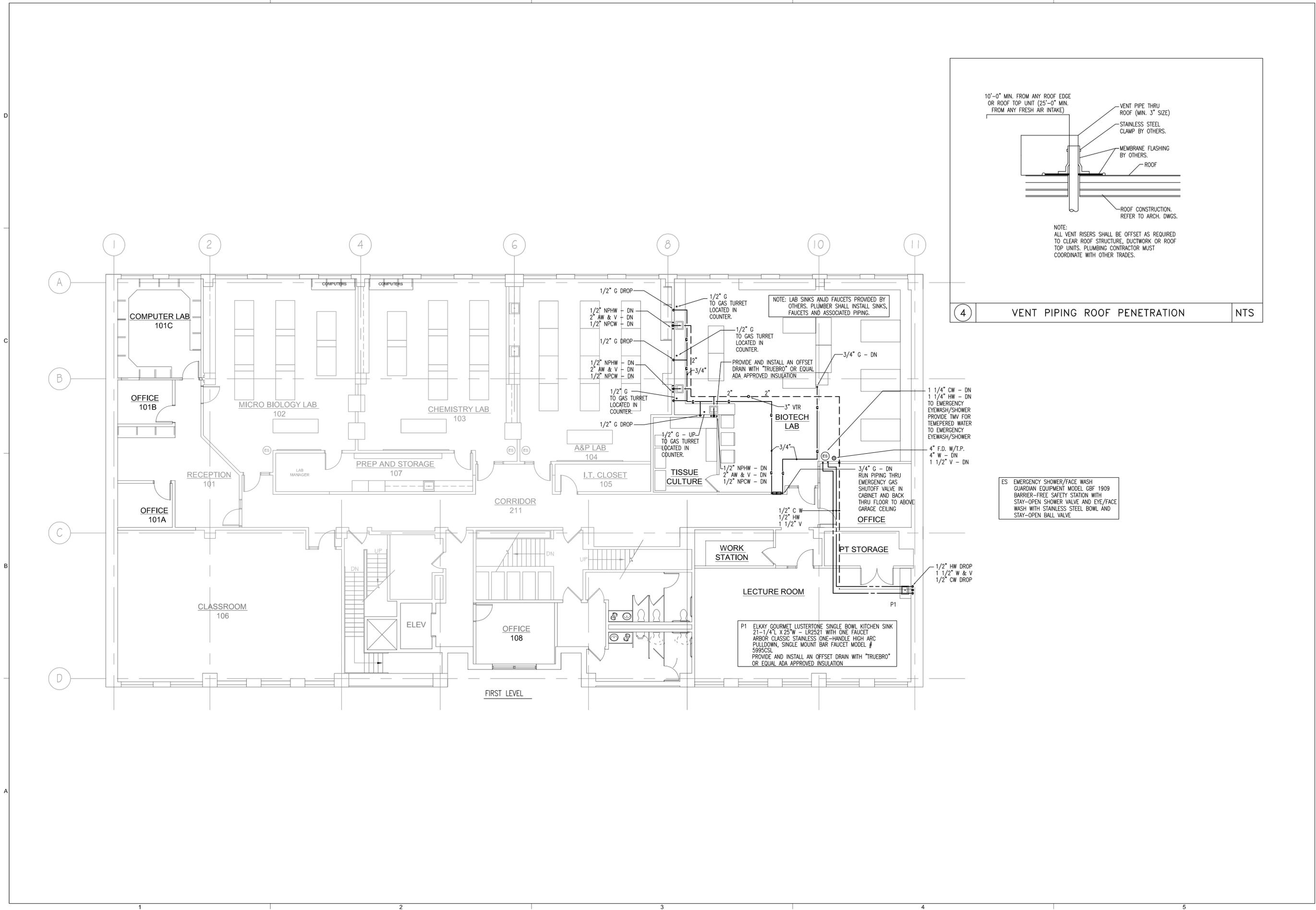


PLUMBING LEGEND		
SYMBOL	ABBR.	DESCRIPTION
---	S or W	SOIL or WASTE
- - - -	V	VENT
---	CW	COLD WATER
---	HW	HOT WATER
- G	G	GAS
W & T	W & T	WASTE & TRAP
○		PIPE ABOVE FLOOR SHOWN
●		PIPE THRU FLOOR SHOWN
⊥		SHUTOFF VALVE
⊥		PIPE DROP or RISE
CO		CLEANOUT
VIR		VENT THRU ROOF
W & V		WASTE & VENT
GPH		GALLON PER HOUR
HVAC		HEATING, VENTILATION AIR CONDITIONING

1. THE WORK SHALL BE EXECUTED IN STRICT CONFORMITY WITH BASE BUILDING SPECIFICATION AND WITH THE LATEST EDITION OF THE PREVAILING STATE PLUMBING AND BUILDING CODES AND ALL LOCAL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE THE MORE STRINGENT STANDARD SHALL APPLY.
2. ALL PLUMBING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE PROCEEDING WITH INSTALLATION.
3. VERIFY EXISTING GAS CONDITIONS BEFORE COMMENCING WORK
4. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR PAYING RELATED FEES.
5. ROUGHING DIMENSIONS OF TOILET FIXTURES MUST BE COORDINATED WITH GENERAL CONTRACTOR AND FIELD SUPERVISOR.
6. INSTALL ALL VENTS THRU ROOF 10'-0" MINIMUM FROM EDGE OF ROOF AND 25' FROM FRESH AIR INTAKES.
7. INSTALL BALL VALVES ON ALL BRANCH SUPPLY LINES.
8. INSTALL SLEEVES AT LEAST 2 PIPE SIZES LARGER FOR ALL PIPES PASSING THRU MASONRY WALLS.
9. ALL ACCESS PANELS SHALL BE BY GENERAL CONTRACTOR. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR LOCATION.
10. INSTALL ALL FLOOR CLEANOUTS TO CLEAR EQUIPMENT AND FIXTURES.
11. ALL WORK SHALL BE PROPERLY TESTED, BALANCED AND CLEANED. PROVIDE A ONE YEAR WARRANTY FROM DATE OF FINAL INSPECTION ON ALL PARTS AND LABOR.

REVISIONS:	DATE:	DESCRIPTION:

PROJECT NO:	0736.2
DATE:	01.18.13
SCALE:	AS NOTED
DRAWN:	MFM
CHECKED BY:	JP

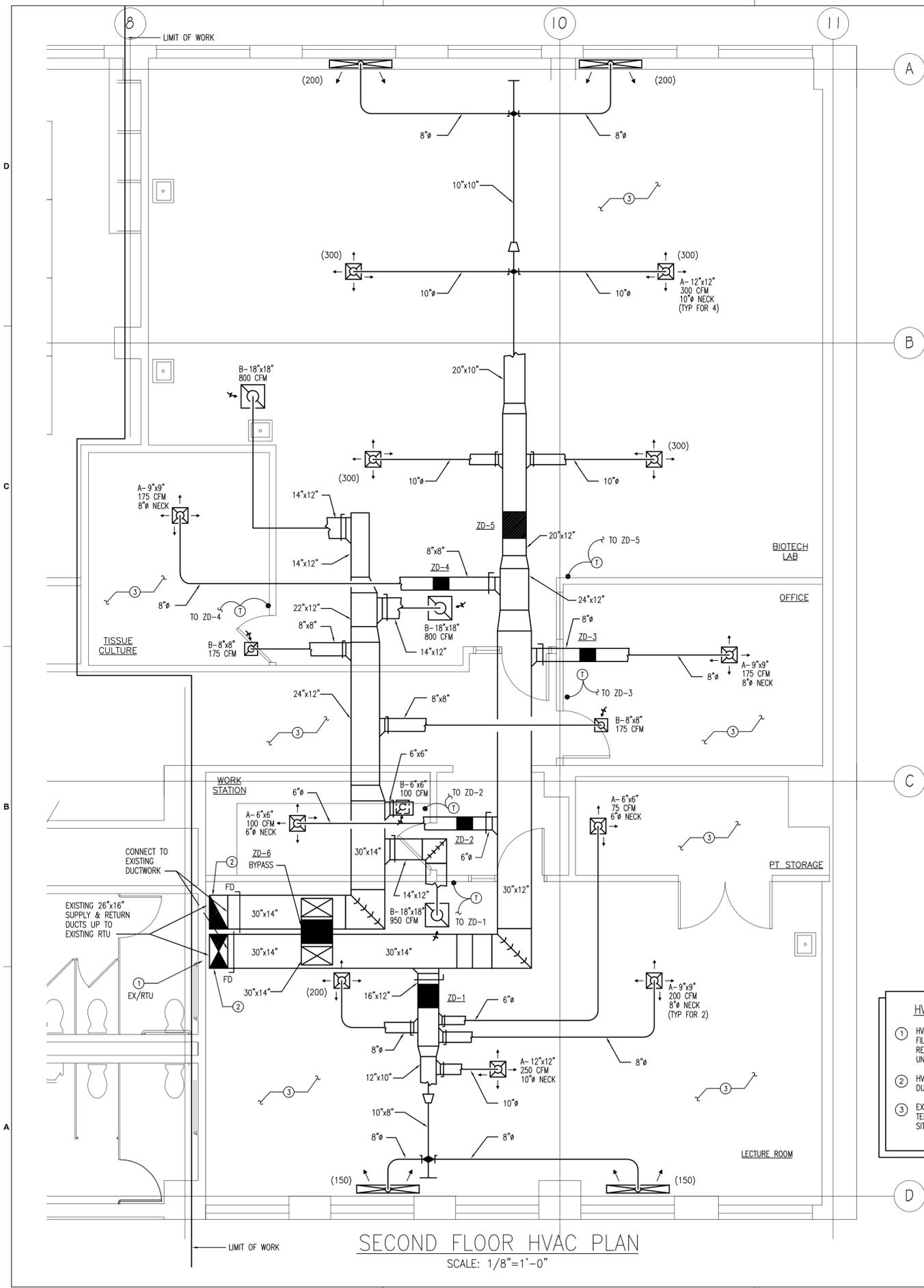


ES EMERGENCY SHOWER/FACE WASH  
 GUARDIAN EQUIPMENT MODEL GBF 1909  
 BARRIER-FREE SAFETY STATION WITH  
 STAY-OPEN SHOWER VALVE AND EYE/FACE  
 WASH WITH STAINLESS STEEL BOWL AND  
 STAY-OPEN BALL VALVE

P1 ELKAY GOURMET LUSTERTONE SINGLE BOWL KITCHEN SINK  
 21-1/4\"/>

REVISIONS:	DATE:	DESCRIPTION:

PROJECT NO:	0736.2
DATE:	01.18.13
SCALE:	AS NOTED
DRAWN:	MFM
CHECKED BY:	JP



SECOND FLOOR HVAC PLAN  
SCALE: 1/8"=1'-0"

\* REGISTER, GRILLE & DIFFUSER SCHEDULE

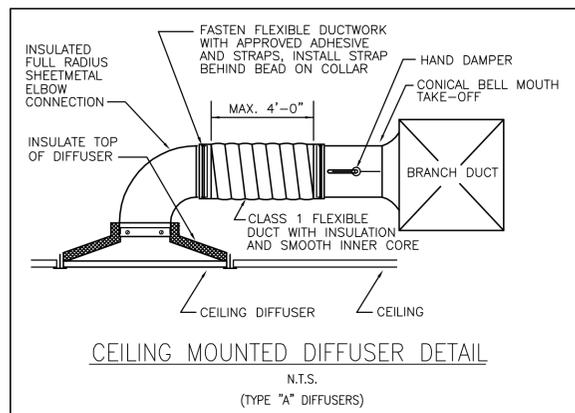
SYMBOL	MANUFACTURER	SERVICE	TYPE	MODEL No.	REMARKS
A	TITUS	SUPPLY	DIFFUSER	TDC	① ② ROUND NECK AG-95 OBD - STEEL
B	TITUS	RETURN	REGISTER	350-FL	① ALUMINUM, AG-15 OBD

- ① COORDINATE WITH ARCHITECT FOR COLOR, FINISH & BORDER TYPE,
- ② BRANCH DUCT RUN-OUTS TO DIFFUSER SHALL BE SAME SIZE AS DIFFUSER NECK SIZE INDICATED ON PLAN - REFER TO PLAN FOR NUMBER OF AIR FLOW DIRECTIONS
- ③ INTERIOR OF DUCTWORK SHALL BE PAINTED FLAT BLACK BEHIND REGISTER AND 24" IN BOTH DIRECTIONS BEYOND REGISTER

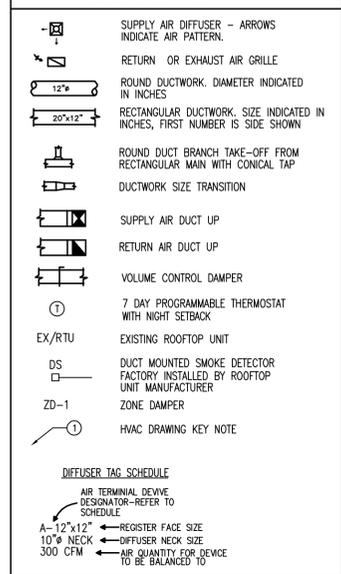
\* COMPUTER ZONE DAMPER SCHEDULE

SYMBOL	MANUFACTURER	CFM	SIZE		REMARKS
			LENGTH	DUCT SIZE	
ZD1-1	CARRIER-VVT	900	24	16"x12"	WITH PROGRAMMABLE T'STAT
ZD1-2	CARRIER-VVT	100	18	6"	WITH PROGRAMMABLE T'STAT
ZD1-3	CARRIER-VVT	175	18	8"	WITH PROGRAMMABLE T'STAT
ZD1-4	CARRIER-VVT	175	18	8"	WITH PROGRAMMABLE T'STAT
ZD1-5	CARRIER-VVT	1600	24	18"x14"	WITH PROGRAMMABLE T'STAT
ZD1-6	CARRIER-VVT	-	24	26"x16"	BY PASS DAMPER

\* HVAC CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH AND INSTALL ALL LOW VOLTAGE WIRING, INCLUDING BUT NOT LIMITED TO INSTALLING LOW VOLTAGE TRANSFORMERS, CONTROLS, ETC FOR A COMPLETE AND OPERABLE SYSTEM



LEGEND



GENERAL NOTES

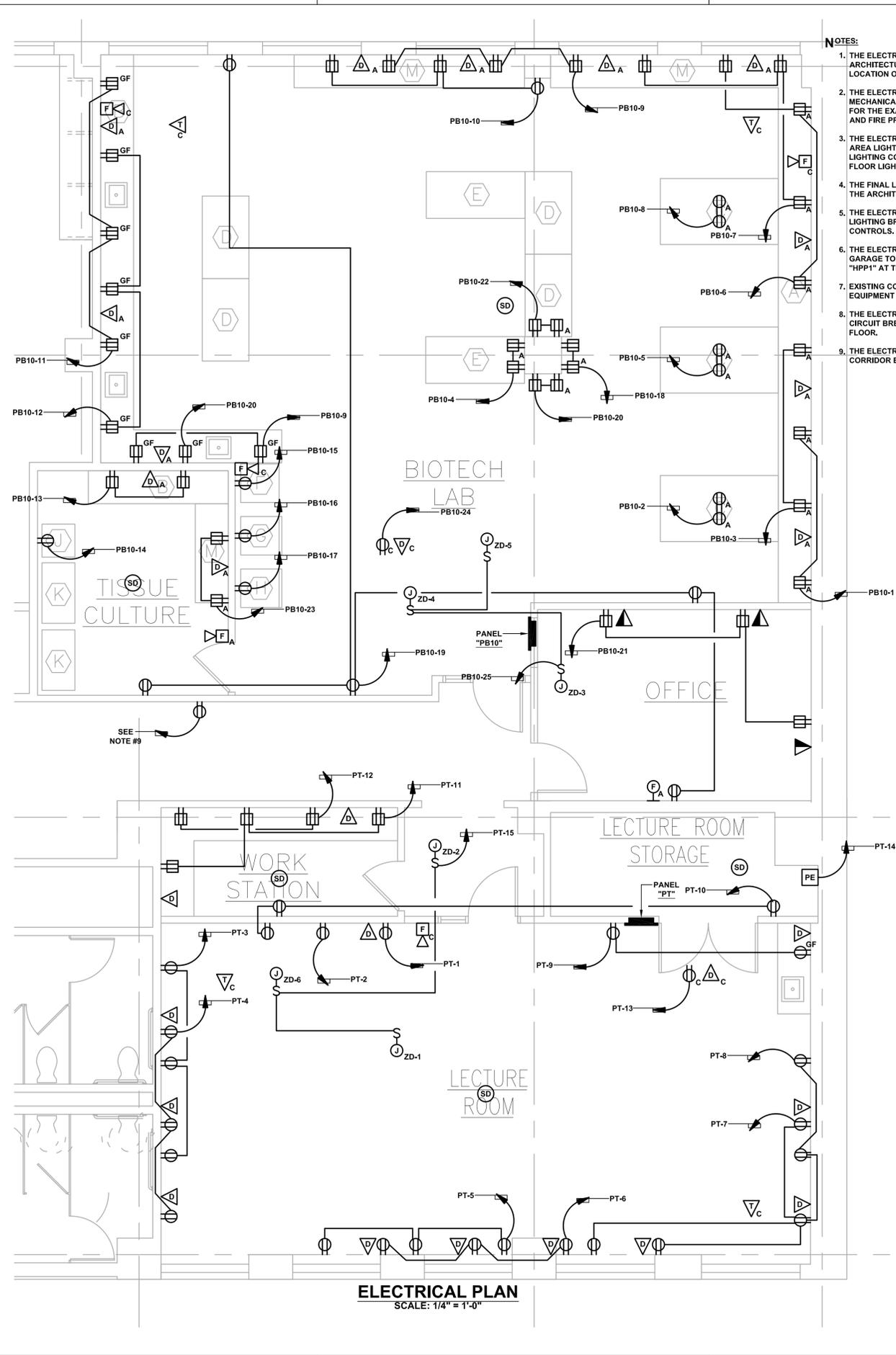
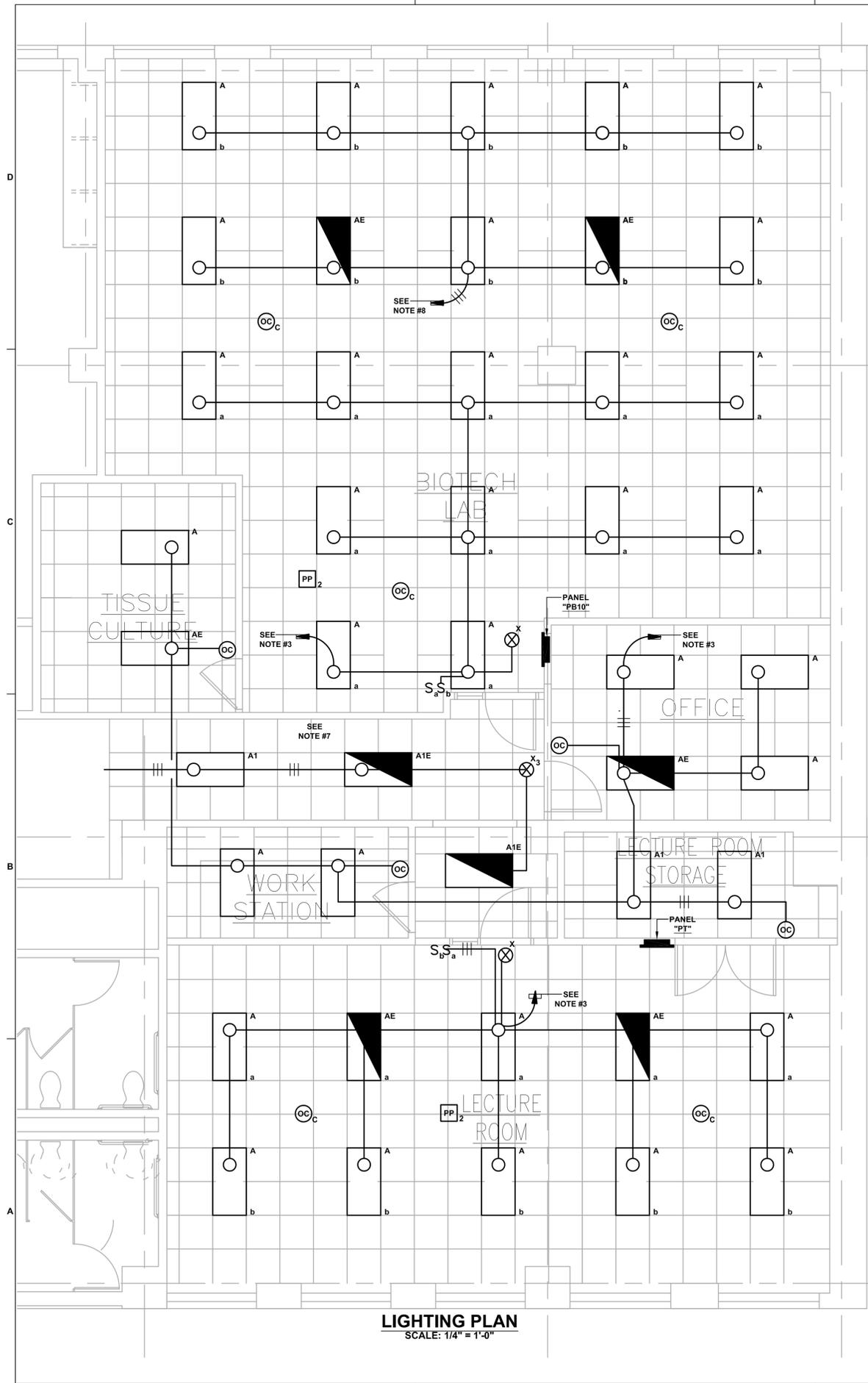
- PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO EXECUTE THE WORK SHOWN AND DESCRIBED. INSTALLATION OF MATERIALS SHALL MEET ALL APPLICABLE STATE, FEDERAL AND MUNICIPAL REQUIREMENTS.
- OBTAIN PERMITS AND PAY ALL FEES FOR WORK AND REQUIRED INSPECTIONS.
- MAINTAIN LIABILITY INSURANCE TO PROTECT OWNER AND THE CONTRACTOR FROM ANY AND ALL CLAIMS UNDER THE WORKER'S COMPENSATION ACT.
- THE DRAWINGS SHALL CONSIDERED DIAGRAMMATIC ONLY. ALL MEASUREMENTS SHALL BE TAKEN FROM BUILDING SITE AND ARCHITECT'S DRAWINGS.
- PROVIDE TEMPORARY MATERIAL STORAGE AS REQUIRED AND BE RESPONSIBLE FOR ANY LOSS OR DAMAGE THERETO.
- SUBMIT 7 COPIES OF SHOP DRAWINGS FOR REVIEW COVERING MAJOR MANUFACTURED ITEMS, IE. ROOFTOP UNITS, REGISTERS & DIFFUSERS, WIRING DIAGRAMS, ETC.
- KEEP ACCURATE RECORD OF "AS-BUILT" DRAWINGS AND SUBMIT THESE BEFORE FINAL CERTIFICATE OF COMPLETION.
- ON COMPLETION OF THE WORK, REMOVE FROM THE PREMISES ALL TOOLS, DEBRIS, SURPLUS AND WASTE MATERIALS RESULTING FROM OPERATIONS UNDER THIS SECTION. CLEAN ALL EQUIPMENT AND LEAVE ALL ITEMS IN PERFECT ORDER READY FOR OPERATION.
- AFTER ACCEPTANCE, INSTRUCT OWNER IN EQUIPMENT OPERATION AND PROVIDE HIM WITH OPERATING AND MAINTENANCE MANUALS STANDARDS AND EXTENDED WARRANTY DOCUMENTS, INSPECTION CERTIFICATES AND COPIES OF SHOP DRAWINGS OF INSTALLED EQUIPMENT.
- THE CONTRACTOR SHALL, BEFORE FINAL PAYMENT IS MADE, GUARANTEE ALL MATERIALS AND WORKMANSHIP SUPPLIED BY HIM IN THE PERFORMANCE OF THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AND SHALL, WHEN CALLED UPON, MAKE GOOD WITHOUT FURTHER COST TO THE OWNER SUCH DEFECTS AS MAY APPEAR WITHIN THIS PERIOD.
- SUPPLY AND INSTALL DUCTWORK AS INDICATED ON DRAWING. DUCTWORK SHALL BE FABRICATED AND INSTALLED IN STRICT ACCORDANCE WITH LATEST ASHRAE & SMACNA STANDARDS AND SHALL BE MANUFACTURED OF GALVANIZED STEEL UNLESS SPECIFICALLY NOTED OTHERWISE.
- ADJUST ALL FAN SPEEDS TO DELIVER SHOWN AIR QUANTITIES. BALANCE ALL AIR SYSTEMS AND SUPPLY WRITTEN AIR BALANCING REPORTS IN TRIPPLICATE. INCLUDE NECESSARY SPARE BELTS AND PULLEYS FOR FIELD ADJUSTMENT.
- ALL CONCEALED SUPPLY AND RETURN DUCTWORK LOCATED WITHIN THE BUILDING SHALL BE EXTERNALLY INSULATED WITH 1 1/2" THICK INSULATION WITH A MINIMUM "R-5" VALUE. THERMAL INSULATION SHALL BE PROVIDED WITH VAPOR BARRIER. ALL SUPPLY AND RETURN DUCTWORK LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE FURNISHED WITH 3" THICK INSULATION WITH A MINIMUM "R-8" VALUE. THERMAL INSULATION LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE PROVIDED WITH WEATHER-PROOF JACKET.
- ALL DUCTWORK SHALL BE: 24 GAUGE UP TO 36 INCHES WIDE, 22 GAUGE 31 INCHES WIDE TO 60 INCHES WIDE, ROUND DUCT SHALL BE 24 GAUGE UO TO 10 INCHES DIAMETER, 22 GAUGE 11 TO 20 INCHES DIAMETER, 20 GAUGE ABOVE 20 INCHES DIAMETER; ALL GALVANIZED SHEETMETAL SEAL ALL JOINTS AND SLIPS WITH EC 800 OR OTHER SUITABLE SEALANT. ALL LONGITUDINAL SEAMS SHALL BE PITTSBURG LOCKING TAPE. ALL SLIPS SHALL BE REINFORCED BAR TYPE. FABRICATE AND INSTALL ALL DUCTS IN COMPLIANCE WITH SMACNA STANDARDS FOR LOW PRESSURE DUCT CONSTRUCTION.
- ALL DUCT CONNECTIONS TO FAN DRIVEN UNITS SHALL BE MADE WITH A FIREPROOF FLEXIBLE DUCT CONNECTOR.
- BEFORE THE H.V.A.C. SYSTEM IS OPERATED, ALL DUCTS SHALL BE BLOWN OUT & THOUGHLY CLEANED. SYSTEM SHALL BE TEST AT FULL PRESSURE & ALL LEAKS & FAULTS CORRECTED.

HVAC DRAWING KEY NOTES:

- HVAC CONTRACTOR SHALL CLEAN EXISTING ROOFTOP EVAPORATOR COIL, REPLACE FILTERS AND FAN BELTS, VACUUM INTERIOR OF ROOFTOP UNIT, RE-CHARGE REFRIGERANT AS REQUIRED. HVAC CONTRACTOR SHALL RE-BALANCE ROOFTOP UNIT TO AIR QUANTITIES INDICATED.
- HVAC CONTRACTOR SHALL CLEAN EXISTING SUPPLY AND RETURN DUCTWORK.
- EXISTING SUPPLY AND RETURN DUCTWORK INCLUDING ALL AIR TERMINAL DEVICES SHALL BE REMOVED AND DISCARDED FROM SITE. FIELD COORDIANTE EXACT REQUIREMENTS

REVISIONS:	DATE:	DESCRIPTION:

PROJECT NO: 0736.2  
DATE: 01.18.13  
SCALE: AS NOTED  
DRAWN: JT  
CHECKED BY: JP



- NOTES:**
1. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR THE EXACT LOCATION OF ALL LIGHTING FIXTURES.
  2. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR THE EXACT LOCATION OF ALL MECHANICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT.
  3. THE ELECTRICAL CONTRACTOR SHALL WIRE TO EXISTING AREA LIGHTING BRANCH CIRCUITS AHEAD OF ANY LOCAL LIGHTING CONTROLS OR SPARE CIRCUIT BREAKERS IN THE FLOOR LIGHTING PANELBOARD. (WIRE THRU POWER PACK).
  4. THE FINAL LOCATION OF PANELBOARDS SHALL BE VERIFIED BY THE ARCHITECT AND ELECTRICAL CONTRACTOR IN THE FIELD.
  5. THE ELECTRICAL CONTRACTOR SHALL WIRE TO CORRIDOR LIGHTING BRANCH CIRCUIT AHEAD OF ANY LOCAL LIGHTING CONTROLS.
  6. THE ELECTRICAL CONTRACTOR SHALL WIRE TWO(2) PUMPS IN GARAGE TO A SPARE CIRCUIT BREAKER IN EXISTING PANEL "HPP1" AT THE GARAGE LEVEL ELECTRIC ROOM.
  7. EXISTING CORRIDOR LIGHTING, RECEPTACLES, FIRE ALARM EQUIPMENT SHALL REMAIN.
  8. THE ELECTRICAL CONTRACTOR SHALL WIRE TO A SPARE CIRCUIT BREAKER IN EXISTING PANEL "LP3" ON THE THIRD FLOOR.
  9. THE ELECTRICAL CONTRACTOR SHALL WIRE TO THE NEAREST CORRIDOR EXISTING DUPLEX RECEPTACLE.

REVISIONS:	DESCRIPTION:
MARK:	
DATE:	

PROJECT NO: 0736.2  
DATE: 1-18-13  
SCALE: AS NOTED  
DRAWN:  
CHECKED BY:

**SECOND FLOOR**  
**LIGHTING &**  
**ELECTRICAL PLAN**

