



## INVITATION TO BID

CITY OF QUINCY, MASSACHUSETTS  
PURCHASING DEPARTMENT  
1305 HANCOCK ST., QUINCY, MA 02169

The City of Quincy invites sealed bids/proposals for:

**BUILDING MAINT. Removal & Installation of HVAC Equipment and all      **APRIL 19, 2012 @ 11:00 a.m.**  
**Related Electrical/Plumbing and roof work in Server room at Quincy Police Station****

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<sup>AM</sup> and 4:30<sup>PM</sup> for a non-refundable printing charge of \$25.00

**A non-mandatory pre-bid walk thru will be held on April 10, 2012 at 10:00 a.m. at Quincy Police Headquarters, 1 Sea Street, Quincy, MA 02169**

All questions regarding this bid should be directed to Kathryn R. Hobin, Purchasing Agent through fax: 617-376-1074 and email: [khobin@quincyma.gov](mailto:khobin@quincyma.gov) and cc: to [ktrillcott@quincyma.gov](mailto:ktrillcott@quincyma.gov) Questions will be accepted until April 13, 2012 at 4:00 p.m.

Bids/Proposals 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.

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.

Firm bid prices will be given first consideration. Bids/Proposals will be received at the office of the Purchasing Agent until the time and date stated above, at which time and date they will be publicly opened and read. Late Bids/Proposals, delivered by mail or in person, will be rejected.

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.

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 informality in the bidding if it is in the best interest of the City to do so.

Thomas P. Koch, MAYOR

Kathryn R. Hobin, PURCHASING AGENT



CITY OF QUINCY, MASSACHUSETTS  
PURCHASING DEPARTMENT  
1305 HANCOCK STREET, QUINCY, MA 02169

DETAILED SPECIFICATIONS AND REQUIREMENTS

ISSUE DATE: APRIL 4, 2012  
BID CALL: APRIL 19, 2012 @ 11:00 A.M.  
DEPARTMENT: PUBLIC BUILDING  
ITEM: REMOVAL & INSTALLATION OF HVAC EQUIPMENT AT Q.P.D.

1. A 5% certified check or bid bond is required.
2. A 100 % Payment and 100%Performance Bond is required.
3. The following forms, if contained in the bid documents, must be completed and signed:
  - √• Certificate of Non-Collusion
  - √• Tax Compliance Certificate
  - √• Certification Relating to Debarment and Suspension
  - √• Signature Authorization Form
  - √• Proposal Sheet 5 of 5 (Lines 28 – 39)
  - √• Certification of General/Sub-bidders on Public Construction Projects Regarding Health and Safety and Non-Collusion .....
4. Do not separate any sheets from this bid call.
5. All prices are to include delivery F.O.B. destination unless noted otherwise.
6. Wherever a manufacturer's name or model number is specified, it is to be clearly understood that the words "or approved equal" follow.
7. All vendors must acknowledge in writing receipt of any addenda.
8. Vendor should submit references on attached form provided.
9. **Vendor should submit one (1) original and (1) copy.**

\* TO THE EXTENT APPLICABLE THE FOLLOWING SECTIONS OF MASSACHUSETTS GENERAL LAWS ARE INCORPORATED HEREIN BY REFERENCE:

**M.G.L. CHAPTER 30B, CHAPER 30, SECTIONS 39A, 39B AND 39F-R AND  
M.G.L. CHAPTER 149, AS AMENDED.**

In the event of any inconsistency between the bid, Information for Bidders, Bid Forms, Conditions or any other Contract Document or potential Contract Document and these statutes; or any other applicable statutes, by-laws or regulations existing on the date on which the bid is submitted, then the statute, by-laws or regulations shall govern. Such inconsistency shall not be grounds for invalidating this invitation to bid.

NOTICE TO BIDDERS

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., Chap. 149, Sect. 26 to 27D as amended.

LIABILITY, PROPERTY DAMAGE and WORKERS' COMPENSATION coverage is required of the successful bidder before any work can be started.

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

BIDDER: \_\_\_\_\_

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

TELEPHONE: \_\_\_\_\_

EMAIL: \_\_\_\_\_

*If you have printed this bid from the City of Quincy Website or through an email, it is your responsibility to check for addenda at [www.quincyma.gov](http://www.quincyma.gov) before you turn in your proposal.*

*“Please send an acknowledgment that you printed out this bid, to: [ktrillcott@quincyma.gov](mailto:ktrillcott@quincyma.gov)”*

*The City of Quincy will not be responsible any bids received omitting addenda acknowledgement.*

*Thank you*



CITY OF QUINCY, MASSACHUSETTS  
PURCHASING DEPARTMENT, CITY HALL

INFORMATION AND INSTRUCTIONS TO BIDDERS

1. I. INVITING BIDS

2. (a) Sealed bids are invited for furnishing to the City of Quincy, Massachusetts, the described materials,  
3. commodities or services all in accordance with the specifications and conditions attached hereto and made a part  
4. thereof.

5. (b) Form of proposal to be used and copies of specifications and conditions are available at the Purchasing  
6. Agent's office, 1305 Hancock Street.

7. (c) All bids must be filed with the Purchasing Agent of the City of Quincy, Massachusetts, at or before the  
8. hour of time set forth in the legal and published advertisement, a copy of which is here attached, also at the definite  
9. place so stated, and on the forms furnished by the Purchasing Agent. Each bid shall be accompanied by bid bond  
10. or a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable  
11. to the City of Quincy, Massachusetts. The amount of such cash or check shall be not less than five percent (5%) of  
12. the value of the proposed work, as estimated by the awarding authority, but in no event less than one hundred  
13. dollars nor more than fifty thousand dollars. This deposit above mentioned shall be as a guarantee that the bidder  
14. will enter into the proposed contract, if awarded to him. This requirement shall become effective unless stated to  
15. the contrary or deleted under "Detailed Specifications and Requirements." This certified check will be returned  
16. after the awarded contracts have been completely signed and proper delivery made, together with any performance  
17. bond if required in the bid form.

18. (d) This proposal is genuine and not collusive or made in the interest of or in behalf of any person not  
19. herein named, and that the bidder has not directly, or indirectly, induced or solicited any other bidder to put in a  
20. sham bid or any other person, firm or corporation to refrain from bidding, and that the bidder has not in any  
21. manner sought by collusion to secure for himself an advantage over any other bidder. Any bid made in violation  
22. thereof, shall not be considered. This agreement in detail shall be found under paragraph XVIII (18) entitled  
23. "Affidavit and/or Agreement."

24. (e) The successful bidder shall, within ten (10) days after the award, enter into a written contract with  
25. said City in accordance with the draft of contract furnished by the City Solicitor for furnishing the described  
26. materials, commodities or services and execute as a part of said contract, a satisfactory performance bond in the  
27. amount of (100%) one hundred percent of the aggregate amount of the contract unless otherwise stated in the  
28. "Detailed Specifications and Requirements," and shall be continued for the faithful performance of the contract  
29. and executed by the Contractor and a responsible surety company.

30. (f) The right is reserved to reject any and all bids or to accept any bid or to accept any part of a bid or the  
31. one deemed best for the City.

32. II. FORM OF PROPOSAL AND SIGNATURE

33. The proposal must be made on this form provided for that purpose, unless otherwise stated, enclosed in a  
34. sealed envelope and plainly marked: "Bid Enclosed - Date: and Time of bid opening, (envelope provided,) and  
35. addressed to the Purchasing Agent, 1305 Hancock Street, Quincy, Massachusetts. If the bid is made by an  
36. individual it must be signed by the full name of the bidder, whose address must be given; if it is made by a firm -  
37. (partnership) - it must be signed with the co-partnership name and by a member of the firm, and the name and  
38. residential address of each member of the firm must be given. If made by a corporation it must be signed by the  
39. proper officer in the corporate name, and the corporate seal must be attached to such signature. A certificate under  
40. oath authorizing the proposal or contract signature as legal and binding upon the corporation must be submitted  
41. with the proposal, especially before a contract is issued. No telegraphic or telephonic proposal will be considered  
42. or accepted.

43. III. PROPOSALS

44. Blank spaces in the proposal must be properly filled in, using ink, indelible pencil or typewriter. Alterations  
45. by erasure or interlineation must be explained or noted in the proposal over the signature of the bidder. Unless  
46. otherwise stated bids will be received on one or more or all items, and the bidder may name a lump sum conditional  
47. on two or more items being awarded to him. Bidders are invited to be present at the opening of proposals. Bidders  
48. must specifically quote on units as shown on specification sheet. In case of error in extension of prices, the unit  
49. price will govern.

50. IV. QUANTITIES

51. The quantities given are approximate, meaning more or less and are herein given and attached and are a  
52. Part of the bid and/or proposal.

1. V. QUOTATION OFFERED:

2. (a) Firm price bids will be given first consideration. The city desires to have the advantage of any general  
3. price decrease effective during the life of the contract, Will you, if the successful bidder, so grant?

4. (b) All quotations must be properly and correctly extended against each unit price offered.

5. (c) Every quotation sheet must be labeled at the bottom right hand section with the bidder's firm name, This  
6. identification shall not be considered as a signature.

7. (d) Upon signing and offering his or their bid to the City, it shall be considered that he has seen, read and  
8. had in his possession a full and complete bid call, all forms and information pertaining thereto.

9. VI. SAMPLES

10. Whenever samples are required, and so stated in specifications, all samples will be received at sender's risk  
11. and expense. However, if samples are used by or retained as City Property, other than those considered as gift or  
12. free or so stated in proposal, they will be paid for at the quoted unit price as offered in the proposal. Otherwise, all  
13. samples will be returned with postage paid by the City. All samples must be properly marked or tagged with  
14. complete identification and to also include: (1) firm name, (2) firm address, (3) catalogue number, and (4) quoted  
15. price.

16. VII. PRODUCT

17. (a) The product shall meet the requirements and satisfaction of the City of Quincy and the using and/or  
18. ordering department, Bidders must state and identify the product offered, such as manufacturer's name, trade  
19. name, brand name and quality under each item on which they bid. If brand names are not given under each item, it  
20. shall be considered "NO BID." WE MUST KNOW WHAT HAS BEEN OFFERED.

21. (b) Unless otherwise stated in writing under "Detailed Specifications" all products, material,  
22. commodities, supplies or articles herein called for must be brand new, unused and the latest product manufactured  
23. in the current year of any name and nature, whenever offered. Used or rebuilt or shopworn materials will not be  
24. acceptable, unless otherwise stated in writing by the City.

25. VIII. BRAND NAMES

26. Wherever brand names are given or their particular specifications are mentioned or referred to, it is not the  
27. City's intent to limit competition, but merely to indicate to the bidder the general type of commodity to be supplied.  
28. The City invites bids on comparable commodities in all cases. All specifications and its basis are: "Or Equal."

29. IX. TERMS

30. The cash discount period shall not be less than twenty (20) days. All prices quoted or offered shall be net  
31. and delivered F.O.B. using or ordering department. The cash discount will not be considered for a deciding factor  
32. when determining the low bidder.

33. X. DELIVERY

34. All deliveries shall be as required and requested according to the using and/or ordering department. All  
35. goods must be delivered in first class condition, if otherwise, they are subject to rejection. All deliveries shall con-  
36. form in every respect with all laws applicable to the Federal Government and/or the Commonwealth of  
37. Massachusetts and/or the City of Quincy.

38. The contractor shall be responsible for the delivery of the full net weight or count at the point of delivery for  
39. which payment is made. Check weighing may be made by the City or any authorized representative at the point of  
40. delivery or at any other point the City may elect. All original sworn certificates of weights at origin shall be attached  
41. to the contractor's certificate of weight at time and place of delivery. The same shall be surrendered to the City of  
42. Quincy.

43. Should the successful bidder fail to make delivery within a reasonable time after receipt of order, the City  
44. Reserves the right to make the purchase on such orders at the open market and charge any excess over contract price  
45. to the account of the successful bidder, who shall pay the same.

46. XI. TAXES

47. A tax exemption certificate will be issued in lieu of any refundable tax. It is desired that all prices be  
48. quoted, exclusive of any tax applicable to this transaction. Such tax or taxes should be itemized and shown as a  
49. separate rare item, preferably in dollars and cents, in both the proposal and on the invoices covering deliveries on a  
50. contract. If the tax is applicable to this transaction, and is not definitely shown in the bidder's quotation, then such  
51. quotation will be considered to be exclusive of such tax.

1. XII. INVOICING

2. Every commodity invoiced must be identified with the item number opposite such commodity shown and  
3. Given on our bid form. All unit prices must be shown against each commodity invoiced; if not, invoice will be  
4. returned for such information. This information will expedite the payment of all invoices. Invoices which do not  
5. carry a cash discount period shall be rendered once a month. All invoices shall be rendered in triplicate to the  
6. Purchasing Department, 1305 Hancock Street, Quincy, Massachusetts 02169.

7. XIII. PAYMENTS

8. Complete or partial payment on the contract will be made in approximately thirty days from date of  
9. delivery or completion and acceptance, unless otherwise provided for in bidder's proposal or under "Detailed  
10. Specifications."

11. XIV. FORCE MAJEURE CLAUSE

12. (a) The contractor will be excused from the performance of the contract in whole or in part, only by reason  
13. of the following causes:

14. 1. When such performance is prevented by operation of law.

15. 2. When such performance is prevented by an irresistible super human cause.

16. 3. When such performance is prevented by an act of the public enemies of the Commonwealth of  
17. Massachusetts, or of the United States of America, or by strike, mob violence, fire, delay in transportation beyond  
18. the control of the contractor, or unavoidable casualty.

19. 4. When such performance is prevented by the inability of the contractor to secure necessary materials,  
20. supplies or equipment by reason of:

21. (a) Appropriation or use thereof by the Federal Government; or

22. (b) Regulations imposed by the Federal Government.

23. (b) No other Force Majeure Clause or conditions may pertain to or become a part of this bid; and any  
24. changes in the conditions stated herein will cause the bid to be rejected.

25. XV. ERRORS AND OMISSIONS

26. The contractor shall not be allowed to take advantage of any errors and/or omissions in these specifications  
27. or in the contractor's specifications submitted with his proposal. Full instructions will always be given when such  
28. errors or omissions are discovered.

29. XVI. PATENT RIGHTS

30. The contractor agrees to save, keep, bear harmless and fully indemnify the City and any of its officers or  
31. agents from all damages, costs, or expenses in law or equity that may at any time arise or to be set up for any  
32. infringement of the patent rights of any person or persons in consequence of the use of the City, or by any of its  
33. officers or agents, of articles supplied under this contract, and of which the contractor is not the patentee or  
34. assignee, or which the contractor is not lawfully entitled to sell.

35. XVII. DEFINITIONS

36. The following meanings are attached to the defined words when used in these specifications and the  
37. contract:

38. (a) The word "City" means The City of Quincy, Massachusetts.

39. (b) The word "Bidder" means the person, firm or corporation submitting a bid on these specifications or  
40. any part thereof.

41. (c) The word "Contractor" means the person, firm or corporation with whom the contract is made by  
42. carrying out the provisions of these specifications and the contract.

43. (d) The words "Firm Price" shall mean a guarantee against price increase.

44. (e) Additional definitions may appear hereinafter under "Detailed Specifications."

45. XVIII. AFFIDAVIT and/or AGREEMENT

46. In all instances, the Affidavit terms and agreement contained herein shall become a part of the bid, and/or  
47. proposal and/or contract in fact and without any reservation or secret evasion whatsoever.

48. The bidder named in the proposal and who has signed the same and who submits herewith to THE CITY  
49. OF QUINCY, MASSACHUSETTS, the attached proposal states and agrees:

50. That he, she or they is (are) the person(s) whose name(s) is (are) signed to there hereto attached proposal; that  
51. said proposal is genuine; that the same is not sham or collusive; that all statements of fact therein are true; that  
52. such proposal was not made in the interest of behalf of any person, partnership, company, association, organization  
53. or corporation not therein named or disclosed.

1. Affiant further deposes and says: That the bidder has not directly or indirectly by agreement,  
2. communication or conference with anyone attempted to induce action prejudicial to the interest of the public body  
3. which is to award the contract, or of any other bidder, or anyone else interested in the proposed contract; that the  
4. bidder has not in any manner sought by collusion to secure for himself, itself, themselves, an advantage over any  
5. other bidder.

6. Affiant further deposes and says that prior to the public opening and reading of bids the said bidder:

7. (a) did not, directly or indirectly, induce or solicit anyone else to submit a false or sham bid;

8. (b) did not, directly or indirectly, collude, conspire, connive or agree with anyone else that said bidder or  
9. anyone else would submit a false or sham bid, or that anyone should refrain from bidding or withdraw his bid;

10. (c) did not, in any manner, directly or indirectly, seek by agreement, communication or conference with  
11. anyone to raise or fix the bid price of said bidder or of anyone else, or to raise or fix any overhead, profit or cost  
12. element of his, its, their price or that of anyone else;

13. (d) did not, directly or indirectly, submit his, its, their bid price or any breakdown thereof, or the  
14. contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company,  
15. association, organization, bid, depository, or to any member or agent thereof, or to any individual or group of  
16. individuals, except to the awarding authority or to any person or persons who have a partnership or other financial  
17. interest with said bidder in his, its, their business.

18. Bidder shall strike out words not appropriate to his bid and initial same.

#### 19. XIX. INSURANCE

20. An approved and satisfactory bona fide certificate of insurance in effect, to protect the insured, the con-  
21. tractor and the City of Quincy resulting from this agreement, must be submitted to the City of Quincy through the  
22. Purchasing Agent before any work of any name or nature can be started. This insurance must cover workmen's  
23. compensation, public liability and property damage. The certificate of insurance must clearly state thereon that it  
24. is a Certificate of Insurance, name of the insured and his or their address, kind of policies in effect, number of the  
25. policy in effect for identification purposes, expiration date of said policy, limits of liability expressed in dollar value  
26. for one person, for one accident, also the aggregate for each person and each accident, description of operations or  
27. work covered and in what State or Commonwealth. There must also be a statement under signature to the effect  
28. that, "in the event of cancellation of the said policies the company will mail notice thereof to the City of Quincy  
29. Purchasing Agent, at 1305 Hancock Street, Quincy, Massachusetts at whose request this certificate is issued." This  
30. certificate must be properly dated and legally signed by an authorized agent for the insurance company. This  
31. certificate must state the name of the insurance company as underwriter and its home office address. All insurance  
32. must satisfy all legal requirements as set forth in the laws, rules and regulations of the Commonwealth of  
33. Massachusetts.

#### 34. XX. CONTRACT

35. (a) The bidder to whom the award is made will be required to enter into a written contract with the City of  
36. Quincy, in the form approved by the City Attorney. All materials or services given or supplied by the Contractor  
37. shall conform to the applicable requirements of the City Charter, City Ordinances, or Commonwealth of  
38. Massachusetts laws covering Labor, Wages, Insurance, Safety and all other legal requirements of any name or  
39. Nature, as well as conforming to the specifications contained herein. In case of default by the Contractor, the City  
40. reserves the right to procure the articles or services from other sources and to hold the Contractor responsible for  
41. any and all excess costs occasioned by the City thereby.

42. (b) The period to be covered by the contract will be found under "Detailed Specifications."

43. (c) The City makes no guarantee as to the quantities to be delivered under the terms of the contract.

44. (d) The City reserves the right to order small quantities at the quoted prices prior to the execution of the  
45. contract, as samples, testing, trial orders otherwise without any liability or commitment on the part of the City  
46. whatsoever.

47. (e) Any qualifications or special information can be listed on a separate sheet and attached hereto with  
48. signature.

49. (f) Any and all city purchases made as samples, testing, trial orders or of similar nature shall not be  
50. considered a breach of contract or give cause for any legal action or litigation.

51. (g) Specifications, conditions, and Information and Instructions to Bidders are here attached and are a  
52. part of the bid and/or proposal.

PROPOSAL TO CITY OF QUINCY, MASSACHUSETTS

1. To the Purchasing Agent  
2. City of Quincy, Massachusetts

3. Date offered: \_\_\_\_\_ 20\_\_\_\_

4. Gentlemen:

5. The undersigned hereby proposes to furnish the City of Quincy, complete or any part thereof, the listed services,  
6. articles, commodities and materials, all in accordance with the attached list, conditions, specifications and the Information  
7. and Instructions to Bidders made a part hereof.

8. The undersigned furthermore agrees that he will execute the necessary and satisfactory bond together with  
9. necessary contract in sextuplicate within ten (10) days from the date when he shall have been notified that his proposal  
10. has been accepted in whole or in part by the City of Quincy.

11. The undersigned furthermore agrees that, in case of default in executing such contract, with necessary bond, that  
12. the check accompanying this bid, and the money payable thereon, shall be fortified thereby to and remain the property  
13. of the City of Quincy.

14. This offer and/or proposal has been given after having had the complete bid call to work from and considered  
15. the same.

16. This offer and bid has been made and given all in accordance with Article and Paragraph Number Eighteen  
17. (XVIII) and made a part hereof.

18. TERMS:

- 19. (a) The discount period shall not be less than twenty (20) days.
- 20. (b) The City will receive the benefit of any general price decrease effective during the life of the contract.
- 21. (c) The City will be notified of all price decreases.
- 22. (d) This is a *firm price* meaning guarantee against price increase.
- 23. (e) Delivered F.O.B. to using department, as directed.
- 24. (f) This offer to be accepted on or before \_\_\_\_\_ 20\_\_\_\_

25. Delivery Offered: \_\_\_\_\_

26. Priority Required: \_\_\_\_\_

27. Firm Name: \_\_\_\_\_

28. Signed by: \_\_\_\_\_  
Signature and Title Corporate Seal or I.S.

29. Address: \_\_\_\_\_

30. Signature of Partners: 1. \_\_\_\_\_ 2. \_\_\_\_\_

31. " " " 3. \_\_\_\_\_ 4. \_\_\_\_\_

32. Name of Corporation President: \_\_\_\_\_

33. Name of Corporation Secretary: \_\_\_\_\_

34. Corporation organized under State of: \_\_\_\_\_ Date: \_\_\_\_\_

35. Partner's Residential Address:

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

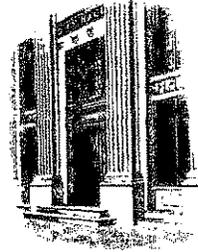
37. 2. \_\_\_\_\_

38. 3. \_\_\_\_\_

39. 4. \_\_\_\_\_



*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.

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## 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, he and 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

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

## SUMMARY OF WORK

### **HVAC-UPGRADE THE EXISTING COOLING WITHIN THE MAIN 3<sup>RD</sup> FLOOR 911 SERVER ROOM**

The City of Quincy is seeking bids from Contractors to remove existing air handler located within the 3<sup>rd</sup> floor server room and associated rooftop condensing unit in there entirely. Removal shall include all associated controls, piping, ductwork, diffusers, hangers and supports as well as condensate pump and condensate piping. All existing BMS control points shall be decommissioned through existing BMS. Contractor shall return existing equipment to the owner and shall coordinate with the owner, delivery and storage of all equipment that is to be returned to the City Building Storage building in Squantum.

#### SCOPE

Furnish and install (2) new 2-ton computer room AC units with up flow configuration, top discharge plenum. (1) Unit shall be wall mounted above the entrance ramp and the other floor mounted in the west corner of the room. Furnish and install (2) condensate pumps with piping for each with indirect drain to existing janitor's closet.

Units shall be as manufactured by Liebert.

Furnish and install associated rooftop air cooled condensing units and all associated refrigerant piping.

Furnish and install manufacturers stand alone electronic controls. Controls shall have open protocol with the ability to tie into existing BMS. Controls shall cycle existing units for equal run time and shall have the capability to send remote alarm to owner thought text and email.

#### ELECTRICAL-INFRASTRUCTURE FOR AC UNIT FEEDS

Capture additional breaker space and power to feed new AC units while maintaining room operation with minimal shutdown.

#### SCOPE

Install new 100 Amp MLO panel in the existing computer room and feed new AHU units within room and rooftop AC units with individual breakers and feeders.

Install new 60 Amp breaker within existing 3<sup>rd</sup> floor recessed panel in adjacent office.

#### ALL WORK SHALL BE PHASED TO MINIMIZE ANY ROOM DISPRUTION OR SHUTDOWN

Contractor shall install (1) of the (2) new AC units within the room while maintaining operation of the existing AC unit and then switchover and remove the existing unit and install the second AC unit. Electrical work shall be done as early as possible.

**PRICE PROPOSAL PAGE**

**Price to Furnish and Install:**

**Two (2) New "Liebert" 2-ton AC units, one (1) floor mounted, one (1) wall mount, AC units with upflow configuration & top discharge plenum and Furnish and Install Two (2) condensate pumps with piping for in with indirect drain to existing janitor's closet.**

Floor unit \$ \_\_\_\_\_ Wall mount unit \$ \_\_\_\_\_

Total for both \$ \_\_\_\_\_

\_\_\_\_\_  
Amount written in words

The City of Quincy shall award a contract based on the lowest responsible and eligible general bidder.

Receipt of Addendum No. \_\_\_\_\_ acknowledged by: \_\_\_\_\_

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

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

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

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

Bid Signed By: \_\_\_\_\_

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

All questions regarding this bid should be directed to Kathryn R. Hobin, Purchasing Agent through fax: 617-376-1074 and email: [khobin@quincyma.gov](mailto:khobin@quincyma.gov) and cc: to [ktrillcott@quincyma.gov](mailto:ktrillcott@quincyma.gov) Questions will be accepted until April 13, 2012 at 4:00 p.m.

**REFERENCE LIST**

All vendors are to fill out the following reference form, and submit it with the bid package.

Reference #1 Name: \_\_\_\_\_

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

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

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

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

Reference #2 Name: \_\_\_\_\_

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

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

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

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

Reference #3 Name: \_\_\_\_\_

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

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

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

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

Reference #4 Name: \_\_\_\_\_

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

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

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

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



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

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

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

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>	12/01/2011	\$30.95	\$8.56	\$7.27	0.00	\$46.78
	06/01/2012	\$31.25	\$8.56	\$7.27	0.00	\$47.08
	08/01/2012	\$31.25	\$8.91	\$7.27	0.00	\$47.43
	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>	12/01/2011	\$31.02	\$8.56	\$7.27	0.00	\$46.85
	06/01/2012	\$31.32	\$8.56	\$7.27	0.00	\$47.15
	08/01/2012	\$31.32	\$8.91	\$7.27	0.00	\$47.50
	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>	12/01/2011	\$31.14	\$8.56	\$7.27	0.00	\$46.97
	06/01/2012	\$31.44	\$8.56	\$7.27	0.00	\$47.27
	08/01/2012	\$31.44	\$8.91	\$7.27	0.00	\$47.62
	12/01/2012	\$31.74	\$8.91	\$8.00	0.00	\$48.65
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 36 (ZONE 1)</i>	08/01/2011	\$80.43	\$9.80	\$17.12	0.00	\$107.35
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.55	\$7.10	\$12.45	0.00	\$52.10
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>ASBESTOS WORKERS LOCAL 6 (BOSTON)</i>	12/01/2011	\$28.40	\$9.90	\$5.95	0.00	\$44.25
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.52	\$10.00	\$12.40	0.00	\$61.92
	06/01/2012	\$40.09	\$10.00	\$12.40	0.00	\$62.49
	12/01/2012	\$40.71	\$10.00	\$12.40	0.00	\$63.11
	06/01/2013	\$41.49	\$10.00	\$12.40	0.00	\$63.89
	12/01/2013	\$42.27	\$10.00	\$12.40	0.00	\$64.67

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:



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  
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Secretary

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Director

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

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.52	\$10.00	\$12.40	0.00	\$61.92
	06/01/2012	\$40.09	\$10.00	\$12.40	0.00	\$62.49
	12/01/2012	\$40.71	\$10.00	\$12.40	0.00	\$63.11
	06/01/2013	\$41.49	\$10.00	\$12.40	0.00	\$63.89
	12/01/2013	\$42.27	\$10.00	\$12.40	0.00	\$64.67
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.55	\$7.10	\$12.45	0.00	\$52.10
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

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DEPARTMENT OF LABOR STANDARDS

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HEATHER E. ROWE  
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DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (QUINCY)</i>	03/01/2012	\$46.56	\$10.18	\$17.25	0.00	\$73.99

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

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

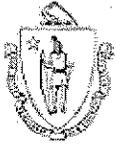
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.28	\$10.18	17.25	\$0.00	\$50.71
2	60	\$27.94	\$10.18	17.25	\$0.00	\$55.37
3	70	\$32.59	\$10.18	17.25	\$0.00	\$60.02
4	80	\$37.25	\$10.18	17.25	\$0.00	\$64.68
5	90	\$41.90	\$10.18	17.25	\$0.00	\$69.33

**Notes:**

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

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2011	\$32.80	\$7.10	\$12.60	0.00	\$52.50
CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2011	\$31.65	\$7.10	\$12.60	0.00	\$51.35
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2011	\$31.65	\$7.10	\$12.60	0.00	\$51.35

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:



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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2012	\$33.03	\$9.80	\$15.61	0.00	\$58.44

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

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.52	\$9.80	1.57	\$0.00	\$27.89
2	60	\$19.82	\$9.80	1.57	\$0.00	\$31.19
3	70	\$23.12	\$9.80	10.90	\$0.00	\$43.82
4	75	\$24.77	\$9.80	10.90	\$0.00	\$45.47
5	80	\$26.42	\$9.80	12.47	\$0.00	\$48.69
6	80	\$26.42	\$9.80	12.47	\$0.00	\$48.69
7	90	\$29.73	\$9.80	14.04	\$0.00	\$53.57
8	90	\$29.73	\$9.80	14.04	\$0.00	\$53.57

**Notes:**

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

CEMENT MASONRY/PLASTERING <i>BRICKLAYERS LOCAL 3 (QUINCY)</i>	02/01/2012	\$45.10	\$9.93	\$16.51	0.00	\$71.54
CHAIN SAW OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60

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**Awarding Authority:** City of Quincy

**Contract Number:** **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$40.52	\$10.00	\$12.40	0.00	\$62.92
	06/01/2012	\$41.09	\$10.00	\$12.40	0.00	\$63.49
	12/01/2012	\$41.71	\$10.00	\$12.40	0.00	\$64.11
	06/01/2013	\$42.49	\$10.00	\$12.40	0.00	\$64.89
	12/01/2013	\$43.27	\$10.00	\$12.40	0.00	\$65.67
COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$27.95	\$10.00	\$12.40	0.00	\$50.35
	06/01/2012	\$28.34	\$10.00	\$12.40	0.00	\$50.74
	12/01/2012	\$28.79	\$10.00	\$12.40	0.00	\$51.19
	06/01/2013	\$29.34	\$10.00	\$12.40	0.00	\$51.74
	12/01/2013	\$29.89	\$10.00	\$12.40	0.00	\$52.29
DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2012	\$44.01	\$7.80	\$14.60	0.00	\$66.41
	07/01/2012	\$45.01	\$7.80	\$14.60	0.00	\$67.41
	01/01/2013	\$46.01	\$7.80	\$14.60	0.00	\$68.41

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:





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 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

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

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: ADZEMAN LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35

**Apprentice - LABORER Demo (Group 1)**

**Effective Date -** 12/01/2011

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.08	\$7.10	12.45	\$0.00	\$38.63
2	70	\$22.26	\$7.10	12.45	\$0.00	\$41.81
3	80	\$25.44	\$7.10	12.45	\$0.00	\$44.99
4	90	\$28.62	\$7.10	12.45	\$0.00	\$48.17

**Notes:**

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

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.80	\$7.10	\$12.45	0.00	\$52.35
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DEVAL L. PATRICK  
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TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy  
**Contract Number:** **City/Town:** QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - LABORER Demo (Group 3)</b>						
<b>Effective Date - 12/01/2011</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.68	\$7.10	12.45	\$0.00	\$39.23
2	70	\$22.96	\$7.10	12.45	\$0.00	\$42.51
3	80	\$26.24	\$7.10	12.45	\$0.00	\$45.79
4	90	\$29.52	\$7.10	12.45	\$0.00	\$49.07
<b>Notes:</b>						
<b>Apprentice to Journeyworker Ratio:1:5</b>						
DEMO: BURNERS LABORERS - ZONE 1	12/01/2011	\$32.55	\$7.10	\$12.45	0.00	\$52.10

**Apprentice - LABORER Demo (Group 2)**

**Effective Date - 12/01/2011**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.53	\$7.10	12.45	\$0.00	\$39.08
2	70	\$22.79	\$7.10	12.45	\$0.00	\$42.34
3	80	\$26.04	\$7.10	12.45	\$0.00	\$45.59
4	90	\$29.30	\$7.10	12.45	\$0.00	\$48.85

**Notes:**

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

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TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 1	12/01/2011	\$32.80	\$7.10	\$12.45	0.00	\$52.35

**Apprentice - LABORER Demo (Group 3)**

Effective Date - 12/01/2011

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.68	\$7.10	12.45	\$0.00	\$39.23
2	70	\$22.96	\$7.10	12.45	\$0.00	\$42.51
3	80	\$26.24	\$7.10	12.45	\$0.00	\$45.79
4	90	\$29.52	\$7.10	12.45	\$0.00	\$49.07

Notes:

Apprentice to Journeyworker Ratio:1:5

DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.55	\$7.10	\$12.45	0.00	\$52.10
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Lt. Governor

**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - LABORER Demo (Group 2)</b>						
<b>Effective Date - 12/01/2011</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.53	\$7.10	12.45	\$0.00	\$39.08
2	70	\$22.79	\$7.10	12.45	\$0.00	\$42.34
3	80	\$26.04	\$7.10	12.45	\$0.00	\$45.59
4	90	\$29.30	\$7.10	12.45	\$0.00	\$48.85

Notes:

Apprentice to Journeyworker Ratio:1:5

DEMO: WRECKING LABORER	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35
LABORERS - ZONE 1						

**Apprentice - LABORER Demo (Group 1)**

**Effective Date - 12/01/2011**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.08	\$7.10	12.45	\$0.00	\$38.63
2	70	\$22.26	\$7.10	12.45	\$0.00	\$41.81
3	80	\$25.44	\$7.10	12.45	\$0.00	\$44.99
4	90	\$28.62	\$7.10	12.45	\$0.00	\$48.17

Notes:

Apprentice to Journeyworker Ratio:1:5

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Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2011	\$53.62	\$9.80	\$17.12	0.00	\$80.54
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2011	\$38.30	\$9.80	\$17.12	0.00	\$65.22
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2011	\$57.45	\$9.80	\$17.12	0.00	\$84.37
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2011	\$80.43	\$9.80	\$17.12	0.00	\$107.35
ELECTRICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2012	\$42.37	\$13.00	\$13.87	0.00	\$69.24
	09/01/2012	\$43.05	\$13.00	\$13.89	0.00	\$69.94
	03/01/2013	\$43.77	\$13.00	\$13.91	0.00	\$70.68
	09/01/2013	\$44.45	\$13.00	\$13.93	0.00	\$71.38
	03/01/2014	\$45.17	\$13.00	\$13.95	0.00	\$72.12
	09/01/2014	\$45.84	\$13.00	\$13.97	0.00	\$72.81
	03/01/2015	\$46.55	\$13.00	\$14.00	0.00	\$73.55
	09/01/2015	\$47.51	\$13.00	\$14.03	0.00	\$74.54
	03/01/2016	\$48.47	\$13.00	\$14.05	0.00	\$75.52

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Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - ELECTRICIAN - Local 103</b>						
<b>Effective Date - 03/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.95	\$13.00	7.81	\$0.00	\$37.76
2	40	\$16.95	\$13.00	7.81	\$0.00	\$37.76
3	45	\$19.07	\$13.00	10.26	\$0.00	\$42.33
4	45	\$19.07	\$13.00	10.26	\$0.00	\$42.33
5	50	\$21.19	\$13.00	10.59	\$0.00	\$44.78
6	55	\$23.30	\$13.00	10.92	\$0.00	\$47.22
7	60	\$25.42	\$13.00	11.24	\$0.00	\$49.66
8	65	\$27.54	\$13.00	11.58	\$0.00	\$52.12
9	70	\$29.66	\$13.00	11.90	\$0.00	\$54.56
10	75	\$31.78	\$13.00	12.23	\$0.00	\$57.01
<b>Effective Date - 09/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.22	\$13.00	7.82	\$0.00	\$38.04
2	40	\$17.22	\$13.00	7.82	\$0.00	\$38.04
3	45	\$19.37	\$13.00	10.27	\$0.00	\$42.64
4	45	\$19.37	\$13.00	10.27	\$0.00	\$42.64
5	50	\$21.53	\$13.00	10.60	\$0.00	\$45.13
6	55	\$23.68	\$13.00	10.93	\$0.00	\$47.61
7	60	\$25.83	\$13.00	11.25	\$0.00	\$50.08
8	65	\$27.98	\$13.00	11.59	\$0.00	\$52.57
9	70	\$30.14	\$13.00	11.91	\$0.00	\$55.05
10	75	\$32.29	\$13.00	12.25	\$0.00	\$57.54

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Lt. Governor

**Awarding Authority:** City of Quincy  
**Contract Number:** **City/Town:** QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Notes:**  
App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

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

ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2012	\$52.45	\$8.78	\$6.96	0.00	\$68.19
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**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
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FENCE & GUARD RAIL ERECTOR <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
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Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2011	\$37.49	\$10.00	\$12.20	0.00	\$59.69
	05/01/2012	\$38.10	\$10.00	\$12.20	0.00	\$60.30
	11/01/2012	\$38.71	\$10.00	\$12.20	0.00	\$60.91
	05/01/2013	\$39.32	\$10.00	\$12.20	0.00	\$61.52
	11/01/2013	\$40.08	\$10.00	\$12.20	0.00	\$62.28
	05/01/2014	\$40.85	\$10.00	\$12.20	0.00	\$63.05
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2011	\$38.88	\$10.00	\$12.20	0.00	\$61.08
	05/01/2012	\$39.49	\$10.00	\$12.20	0.00	\$61.69
	11/01/2012	\$40.11	\$10.00	\$12.20	0.00	\$62.31
	05/01/2013	\$40.73	\$10.00	\$12.20	0.00	\$62.93
	11/01/2013	\$41.50	\$10.00	\$12.20	0.00	\$63.70
	05/01/2014	\$42.27	\$10.00	\$12.20	0.00	\$64.47
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2011	\$20.91	\$10.00	\$12.20	0.00	\$43.11
	05/01/2012	\$21.27	\$10.00	\$12.20	0.00	\$43.47
	11/01/2012	\$21.63	\$10.00	\$12.20	0.00	\$43.83
	05/01/2013	\$21.99	\$10.00	\$12.20	0.00	\$44.19
	11/01/2013	\$22.45	\$10.00	\$12.20	0.00	\$44.65
	05/01/2014	\$22.90	\$10.00	\$12.20	0.00	\$45.10
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	03/01/2012	\$42.37	\$13.00	\$13.87	0.00	\$69.24
	09/01/2012	\$43.05	\$13.00	\$13.89	0.00	\$69.94
	03/01/2013	\$43.77	\$13.00	\$13.91	0.00	\$70.68
	09/01/2013	\$44.45	\$13.00	\$13.93	0.00	\$71.38
	03/01/2014	\$45.17	\$13.00	\$13.95	0.00	\$72.12
	09/01/2014	\$45.84	\$13.00	\$13.97	0.00	\$72.81
	03/01/2015	\$46.55	\$13.00	\$14.00	0.00	\$73.55
	09/01/2015	\$47.51	\$13.00	\$14.03	0.00	\$74.54
03/01/2016	\$48.47	\$13.00	\$14.05	0.00	\$75.52	

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:



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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

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

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING ELECTRICIANS LOCAL 103	03/01/2012	\$31.78	\$13.00	\$12.23	0.00	\$57.01
	09/01/2012	\$32.29	\$13.00	\$12.25	0.00	\$57.54
	03/01/2013	\$32.83	\$13.00	\$12.26	0.00	\$58.09
	09/01/2013	\$33.34	\$13.00	\$12.28	0.00	\$58.62
	03/01/2014	\$33.88	\$13.00	\$12.30	0.00	\$59.18
	09/01/2014	\$34.38	\$13.00	\$12.31	0.00	\$59.69
	03/01/2015	\$34.91	\$13.00	\$12.33	0.00	\$60.24
	09/01/2015	\$35.63	\$13.00	\$12.35	0.00	\$60.98
FIREMAN (ASST. ENGINEER) OPERATING ENGINEERS LOCAL 4	03/01/2016	\$36.35	\$13.00	\$12.37	0.00	\$61.72
	12/01/2011	\$33.23	\$10.00	\$12.40	0.00	\$55.63
	06/01/2012	\$33.70	\$10.00	\$12.40	0.00	\$56.10
	12/01/2012	\$34.23	\$10.00	\$12.40	0.00	\$56.63
	06/01/2013	\$34.88	\$10.00	\$12.40	0.00	\$57.28
FLAGGER & SIGNALER LABORERS - ZONE 1	12/01/2013	\$35.54	\$10.00	\$12.40	0.00	\$57.94
	12/01/2011	\$20.50	\$7.10	\$12.45	0.00	\$40.05
FLOORCOVERER FLOORCOVERERS LOCAL 2168 ZONE 1	03/01/2012	\$37.20	\$9.80	\$16.61	0.00	\$63.61

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DEVAL L. PATRICK  
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TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - FLOORCOVERER - Local 2168 Zone 1</b>						
<b>Effective Date - 03/01/2012</b>						
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 OPERATING ENGINEERS LOCAL 4	12/01/2011	\$39.52	\$10.00	\$12.40	0.00	\$61.92
	06/01/2012	\$40.09	\$10.00	\$12.40	0.00	\$62.49
	12/01/2012	\$40.71	\$10.00	\$12.40	0.00	\$63.11
	06/01/2013	\$41.49	\$10.00	\$12.40	0.00	\$63.89
	12/01/2013	\$42.27	\$10.00	\$12.40	0.00	\$64.67
GENERATOR/LIGHTING PLANT/HEATERS OPERATING ENGINEERS LOCAL 4	12/01/2011	\$27.95	\$10.00	\$12.40	0.00	\$50.35
	06/01/2012	\$28.34	\$10.00	\$12.40	0.00	\$50.74
	12/01/2012	\$28.79	\$10.00	\$12.40	0.00	\$51.19
	06/01/2013	\$29.34	\$10.00	\$12.40	0.00	\$51.74
	12/01/2013	\$29.89	\$10.00	\$12.40	0.00	\$52.29

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JOANNE F. GOLDSTEIN  
Secretary

HEATHER E. ROWE  
Director

**Awarding Authority:** City of Quincy

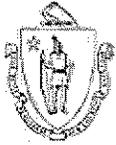
**Contract Number:** **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)	01/01/2012	\$33.51	\$7.80	\$14.60	0.00	\$55.91
GLAZIERS LOCAL 35 (ZONE 2)	07/01/2012	\$34.51	\$7.80	\$14.60	0.00	\$56.91
	01/01/2013	\$35.51	\$7.80	\$14.60	0.00	\$57.91

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JOANNE F. GOLDSTEIN  
Secretary  
HEATHER E. ROWE  
Director

**Awarding Authority:** City of Quincy

**Contract Number:** **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

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

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.76	\$7.80	0.00	\$0.00	\$24.56
2	55	\$18.43	\$7.80	3.25	\$0.00	\$29.48
3	60	\$20.11	\$7.80	3.54	\$0.00	\$31.45
4	65	\$21.78	\$7.80	3.84	\$0.00	\$33.42
5	70	\$23.46	\$7.80	12.83	\$0.00	\$44.09
6	75	\$25.13	\$7.80	13.13	\$0.00	\$46.06
7	80	\$26.81	\$7.80	13.42	\$0.00	\$48.03
8	90	\$30.16	\$7.80	14.01	\$0.00	\$51.97

**Effective Date - 07/01/2012**

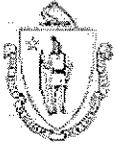
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.26	\$7.80	0.00	\$0.00	\$25.06
2	55	\$18.98	\$7.80	3.25	\$0.00	\$30.03
3	60	\$20.71	\$7.80	3.54	\$0.00	\$32.05
4	65	\$22.43	\$7.80	3.84	\$0.00	\$34.07
5	70	\$24.16	\$7.80	12.83	\$0.00	\$44.79
6	75	\$25.88	\$7.80	13.13	\$0.00	\$46.81
7	80	\$27.61	\$7.80	13.42	\$0.00	\$48.83
8	90	\$31.06	\$7.80	14.01	\$0.00	\$52.87

**Notes:**

Steps are 750 hrs.

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

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 Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.52	\$10.00	\$12.40	0.00	\$61.92
	06/01/2012	\$40.09	\$10.00	\$12.40	0.00	\$62.49
	12/01/2012	\$40.71	\$10.00	\$12.40	0.00	\$63.11
	06/01/2013	\$41.49	\$10.00	\$12.40	0.00	\$63.89
	12/01/2013	\$42.27	\$10.00	\$12.40	0.00	\$64.67

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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - HOIST/PORT. ENG.- Local 4</b>						
<b>Effective Date - 12/01/2011</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$21.74	\$10.00	0.00	\$0.00	\$31.74
2	60	\$23.71	\$10.00	12.40	\$0.00	\$46.11
3	65	\$25.69	\$10.00	12.40	\$0.00	\$48.09
4	70	\$27.66	\$10.00	12.40	\$0.00	\$50.06
5	75	\$29.64	\$10.00	12.40	\$0.00	\$52.04
6	80	\$31.62	\$10.00	12.40	\$0.00	\$54.02
7	85	\$33.59	\$10.00	12.40	\$0.00	\$55.99
8	90	\$35.57	\$10.00	12.40	\$0.00	\$57.97
<b>Effective Date - 06/01/2012</b>						
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	12.40	\$0.00	\$46.45
3	65	\$26.06	\$10.00	12.40	\$0.00	\$48.46
4	70	\$28.06	\$10.00	12.40	\$0.00	\$50.46
5	75	\$30.07	\$10.00	12.40	\$0.00	\$52.47
6	80	\$32.07	\$10.00	12.40	\$0.00	\$54.47
7	85	\$34.08	\$10.00	12.40	\$0.00	\$56.48
8	90	\$36.08	\$10.00	12.40	\$0.00	\$58.48

**Notes:**

Apprentice to Journeyworker Ratio:1:6

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Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2012	\$40.79	\$9.82	\$17.34	2.04	\$69.99
	08/01/2012	\$42.04	\$9.82	\$17.34	2.08	\$71.28
	02/01/2013	\$43.29	\$9.82	\$17.34	2.11	\$72.56
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 103</i>	03/01/2012	\$42.37	\$13.00	\$13.87	0.00	\$69.24
	09/01/2012	\$43.05	\$13.00	\$13.89	0.00	\$69.94
	03/01/2013	\$43.77	\$13.00	\$13.91	0.00	\$70.68
	09/01/2013	\$44.45	\$13.00	\$13.93	0.00	\$71.38
	03/01/2014	\$45.17	\$13.00	\$13.95	0.00	\$72.12
	09/01/2014	\$45.84	\$13.00	\$13.97	0.00	\$72.81
	03/01/2015	\$46.55	\$13.00	\$14.00	0.00	\$73.55
	09/01/2015	\$47.51	\$13.00	\$14.03	0.00	\$74.54
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2012	\$40.79	\$9.82	\$17.34	2.04	\$69.99
	08/01/2012	\$42.04	\$9.82	\$17.34	2.08	\$71.28
	02/01/2013	\$43.29	\$9.82	\$17.34	2.11	\$72.56
HVAC (TESTING AND BALANCING - WATER) <i>PIPEFITTERS LOCAL 537</i>	03/01/2012	\$46.84	\$8.75	\$14.39	0.00	\$69.98
	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
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	03/01/2012	\$46.84	\$8.75	\$14.39	0.00	\$69.98
	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
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.55	\$7.10	\$12.45	0.00	\$52.10
INSULATOR (PIPES & TANKS) <i>ASBESTOS WORKERS LOCAL 6 (BOSTON)</i>	09/01/2011	\$40.66	\$10.40	\$11.20	0.00	\$62.26
	09/01/2012	\$42.06	\$10.40	\$11.20	0.00	\$63.66
	09/01/2013	\$43.66	\$10.40	\$11.20	0.00	\$65.26
	09/01/2014	\$45.66	\$10.40	\$11.20	0.00	\$67.26

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TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy  
**Contract Number:** **City/Town:** QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

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

**Effective Date - 09/01/2011**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.33	\$10.40	8.30	\$0.00	\$39.03
2	60	\$24.40	\$10.40	8.88	\$0.00	\$43.68
3	70	\$28.46	\$10.40	9.46	\$0.00	\$48.32
4	80	\$32.53	\$10.40	10.04	\$0.00	\$52.97

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.03	\$10.40	8.30	\$0.00	\$39.73
2	60	\$25.24	\$10.40	8.88	\$0.00	\$44.52
3	70	\$29.44	\$10.40	9.46	\$0.00	\$49.30
4	80	\$33.65	\$10.40	10.04	\$0.00	\$54.09

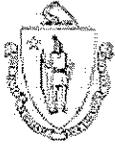
**Notes:**

Steps are 1 year

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

IRONWORKER/WELDER	03/16/2012	\$38.28	\$7.70	\$17.95	0.00	\$63.93
IRONWORKERS LOCAL 7	09/16/2012	\$39.28	\$7.70	\$17.95	0.00	\$64.93
	03/16/2013	\$40.53	\$7.70	\$17.95	0.00	\$66.18

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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

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

**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - IRONWORKER - Local 7 Boston**

**Effective Date - 03/16/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.97	\$7.70	17.95	\$0.00	\$48.62
2	70	\$26.80	\$7.70	17.95	\$0.00	\$52.45
3	75	\$28.71	\$7.70	17.95	\$0.00	\$54.36
4	80	\$30.62	\$7.70	17.95	\$0.00	\$56.27
5	85	\$32.54	\$7.70	17.95	\$0.00	\$58.19
6	90	\$34.45	\$7.70	17.95	\$0.00	\$60.10

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.57	\$7.70	17.95	\$0.00	\$49.22
2	70	\$27.50	\$7.70	17.95	\$0.00	\$53.15
3	75	\$29.46	\$7.70	17.95	\$0.00	\$55.11
4	80	\$31.42	\$7.70	17.95	\$0.00	\$57.07
5	85	\$33.39	\$7.70	17.95	\$0.00	\$59.04
6	90	\$35.35	\$7.70	17.95	\$0.00	\$61.00

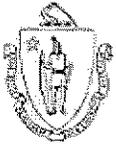
**Notes:**

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

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

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
LABORER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35

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JOANNE F. GOLDSTEIN  
Secretary

HEATHER E. ROWE  
Director

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

**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

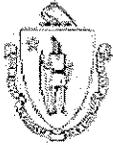
Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - LABORER - Zone 1</b>						
<b>Effective Date - 12/01/2011</b>						
Step percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate	
1 60	\$19.08	\$7.10	12.45	\$0.00	\$38.63	
2 70	\$22.26	\$7.10	12.45	\$0.00	\$41.81	
3 80	\$25.44	\$7.10	12.45	\$0.00	\$44.99	
4 90	\$28.62	\$7.10	12.45	\$0.00	\$48.17	

**Notes:**

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

LABORER: CARPENTER TENDER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35
LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35
LABORER: MASON TENDER LABORERS - ZONE 1	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
LABORER: MULTI-TRADE TENDER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35
LABORER: TREE REMOVER LABORERS - ZONE 1	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35
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.						
LASER BEAM OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60

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DEVAL L. PATRICK  
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TIMOTHY P. MURRAY  
 Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	03/01/2012	\$35.52	\$10.18	\$16.04	0.00	\$61.74

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

Effective Date - 03/01/2012

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.76	\$10.18	16.04	\$0.00	\$43.98
2	60	\$21.31	\$10.18	16.04	\$0.00	\$47.53
3	70	\$24.86	\$10.18	16.04	\$0.00	\$51.08
4	80	\$28.42	\$10.18	16.04	\$0.00	\$54.64
5	90	\$31.97	\$10.18	16.04	\$0.00	\$58.19

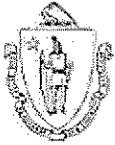
**Notes:**

Steps are 800 hrs.

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

MARBLE MASONS, TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	03/01/2012	\$46.60	\$10.18	\$17.25	0.00	\$74.03
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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

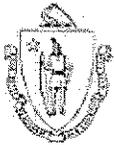
Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble &amp; Tile</b>						
<b>Effective Date - 03/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.30	\$10.18	17.25	\$0.00	\$50.73
2	60	\$27.96	\$10.18	17.25	\$0.00	\$55.39
3	70	\$32.62	\$10.18	17.25	\$0.00	\$60.05
4	80	\$37.28	\$10.18	17.25	\$0.00	\$64.71
5	90	\$41.94	\$10.18	17.25	\$0.00	\$69.37

**Notes:**

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

MECH. SWEEPER OPERATOR (ON CONST. SITES) OPERATING ENGINEERS LOCAL 4	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
MECHANICS MAINTENANCE OPERATING ENGINEERS LOCAL 4	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
MILLWRIGHT (Zone 1) MILLWRIGHTS LOCAL 1121 - Zone 1	04/01/2011	\$33.57	\$8.67	\$15.61	0.00	\$57.85

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Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - MILLWRIGHT - Local 1121 Zone 1</b>						
<b>Effective Date - 04/01/2011</b>						
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	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2011	\$21.28	\$10.00	\$12.40	0.00	\$43.68
	06/01/2012	\$21.56	\$10.00	\$12.40	0.00	\$43.96
	12/01/2012	\$21.90	\$10.00	\$12.40	0.00	\$44.30
	06/01/2013	\$22.32	\$10.00	\$12.40	0.00	\$44.72
	12/01/2013	\$22.74	\$10.00	\$12.40	0.00	\$45.14

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TIMOTHY P. MURRAY  
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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** I Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$24.51	\$10.00	\$12.40	0.00	\$46.91
	06/01/2012	\$24.85	\$10.00	\$12.40	0.00	\$47.25
	12/01/2012	\$25.24	\$10.00	\$12.40	0.00	\$47.64
	06/01/2013	\$25.72	\$10.00	\$12.40	0.00	\$48.12
	12/01/2013	\$26.21	\$10.00	\$12.40	0.00	\$48.61
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2012	\$44.01	\$7.80	\$14.60	0.00	\$66.41
	07/01/2012	\$45.01	\$7.80	\$14.60	0.00	\$67.41
	01/01/2013	\$46.01	\$7.80	\$14.60	0.00	\$68.41

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 Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - PAINTER Local 35 - BRIDGESTANKS</b>						
<b>Effective Date - 01/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.01	\$7.80	0.00	\$0.00	\$29.81
2	55	\$24.21	\$7.80	3.25	\$0.00	\$35.26
3	60	\$26.41	\$7.80	3.54	\$0.00	\$37.75
4	65	\$28.61	\$7.80	3.84	\$0.00	\$40.25
5	70	\$30.81	\$7.80	12.83	\$0.00	\$51.44
6	75	\$33.01	\$7.80	13.13	\$0.00	\$53.94
7	80	\$35.21	\$7.80	13.42	\$0.00	\$56.43
8	90	\$39.61	\$7.80	14.01	\$0.00	\$61.42
<b>Effective Date - 07/01/2012</b>						
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	3.25	\$0.00	\$35.81
3	60	\$27.01	\$7.80	3.54	\$0.00	\$38.35
4	65	\$29.26	\$7.80	3.84	\$0.00	\$40.90
5	70	\$31.51	\$7.80	12.83	\$0.00	\$52.14
6	75	\$33.76	\$7.80	13.13	\$0.00	\$54.69
7	80	\$36.01	\$7.80	13.42	\$0.00	\$57.23
8	90	\$40.51	\$7.80	14.01	\$0.00	\$62.32

**Notes:**

Steps are 750 hrs.

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

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**Awarding Authority:** City of Quincy

**Contract Number:** \_\_\_\_\_ **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Painter (Spray or Sandblast, New) *	01/01/2012	\$34.91	\$7.80	\$14.60	0.00	\$57.31
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2012	\$35.91	\$7.80	\$14.60	0.00	\$58.31
	01/01/2013	\$36.91	\$7.80	\$14.60	0.00	\$59.31

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 Lt. Governor

**Awarding Authority:** City of Quincy

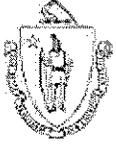
**Contract Number:** **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (SPRAY OR SANDBLAST, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2012	\$32.97	\$7.80	\$14.60	0.00	\$55.37
	07/01/2012	\$33.97	\$7.80	\$14.60	0.00	\$56.37
	01/01/2013	\$34.97	\$7.80	\$14.60	0.00	\$57.37

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:



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

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.49	\$7.80	0.00	\$0.00	\$24.29
2	55	\$18.13	\$7.80	3.25	\$0.00	\$29.18
3	60	\$19.78	\$7.80	3.54	\$0.00	\$31.12
4	65	\$21.43	\$7.80	3.84	\$0.00	\$33.07
5	70	\$23.08	\$7.80	12.83	\$0.00	\$43.71
6	75	\$24.73	\$7.80	13.13	\$0.00	\$45.66
7	80	\$26.38	\$7.80	13.42	\$0.00	\$47.60
8	90	\$29.67	\$7.80	14.01	\$0.00	\$51.48

**Effective Date - 07/01/2012**

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	3.25	\$0.00	\$29.73
3	60	\$20.38	\$7.80	3.54	\$0.00	\$31.72
4	65	\$22.08	\$7.80	3.84	\$0.00	\$33.72
5	70	\$23.78	\$7.80	12.83	\$0.00	\$44.41
6	75	\$25.48	\$7.80	13.13	\$0.00	\$46.41
7	80	\$27.18	\$7.80	13.42	\$0.00	\$48.40
8	90	\$30.57	\$7.80	14.01	\$0.00	\$52.38

**Notes:**

Apprentice to Journeyworker Ratio:1:1

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HEATHER E. ROWE  
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DEVAL L. PATRICK  
Governor  
TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (TRAFFIC MARKINGS) <i>LABORERS - ZONE 1</i>	12/01/2011	\$31.80	\$7.10	\$12.45	0.00	\$51.35
PAINTER / TAPER (BRUSH, NEW) *	01/01/2012	\$33.51	\$7.80	\$14.60	0.00	\$55.91
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2012	\$34.51	\$7.80	\$14.60	0.00	\$56.91
	01/01/2013	\$35.51	\$7.80	\$14.60	0.00	\$57.91

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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

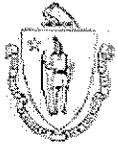
Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW</b>						
<b>Effective Date - 01/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$16.76	\$7.80	0.00	\$0.00	\$24.56
2	55	\$18.43	\$7.80	3.25	\$0.00	\$29.48
3	60	\$20.11	\$7.80	3.54	\$0.00	\$31.45
4	65	\$21.78	\$7.80	3.84	\$0.00	\$33.42
5	70	\$23.46	\$7.80	12.83	\$0.00	\$44.09
6	75	\$25.13	\$7.80	13.13	\$0.00	\$46.06
7	80	\$26.81	\$7.80	13.42	\$0.00	\$48.03
8	90	\$30.16	\$7.80	14.01	\$0.00	\$51.97
<b>Effective Date - 07/01/2012</b>						
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	3.25	\$0.00	\$30.03
3	60	\$20.71	\$7.80	3.54	\$0.00	\$32.05
4	65	\$22.43	\$7.80	3.84	\$0.00	\$34.07
5	70	\$24.16	\$7.80	12.83	\$0.00	\$44.79
6	75	\$25.88	\$7.80	13.13	\$0.00	\$46.81
7	80	\$27.61	\$7.80	13.42	\$0.00	\$48.83
8	90	\$31.06	\$7.80	14.01	\$0.00	\$52.87

**Notes:**

Steps are 750 hrs.

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

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TIMOTHY P. MURRAY  
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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER / TAPER (BRUSH, REPAINT) <i>PAINTERS LOCAL 33 - ZONE 2</i>	01/01/2012	\$31.57	\$7.80	\$14.60	0.00	\$53.97
	07/01/2012	\$32.57	\$7.80	\$14.60	0.00	\$54.97
	01/01/2013	\$33.57	\$7.80	\$14.60	0.00	\$55.97

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**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT</b>						
<b>Effective Date - 01/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$15.79	\$7.80	0.00	\$0.00	\$23.59
2	55	\$17.36	\$7.80	3.25	\$0.00	\$28.41
3	60	\$18.94	\$7.80	3.54	\$0.00	\$30.28
4	65	\$20.52	\$7.80	3.84	\$0.00	\$32.16
5	70	\$22.10	\$7.80	12.83	\$0.00	\$42.73
6	75	\$23.68	\$7.80	13.13	\$0.00	\$44.61
7	80	\$25.26	\$7.80	13.42	\$0.00	\$46.48
8	90	\$28.41	\$7.80	14.01	\$0.00	\$50.22
<b>Effective Date - 07/01/2012</b>						
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	3.25	\$0.00	\$28.96
3	60	\$19.54	\$7.80	3.54	\$0.00	\$30.88
4	65	\$21.17	\$7.80	3.84	\$0.00	\$32.81
5	70	\$22.80	\$7.80	12.83	\$0.00	\$43.43
6	75	\$24.43	\$7.80	13.13	\$0.00	\$45.36
7	80	\$26.06	\$7.80	13.42	\$0.00	\$47.28
8	90	\$29.31	\$7.80	14.01	\$0.00	\$51.12

**Notes:**  
 Steps are 750 hrs.

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

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**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2011	\$30.78	\$8.56	\$7.27	0.00	\$46.61
	06/01/2012	\$31.08	\$8.56	\$7.27	0.00	\$46.91
	08/01/2012	\$31.08	\$8.91	\$7.27	0.00	\$47.26
	12/01/2012	\$31.38	\$8.91	\$8.00	0.00	\$48.29
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2011	\$38.30	\$9.80	\$17.12	0.00	\$65.22
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2011	\$38.30	\$9.80	\$17.12	0.00	\$65.22

**Apprentice - PILE DRIVER - Local 56 Zone 1**

**Effective Date - 08/01/2011**

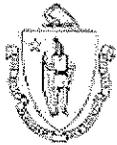
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.98	\$8.08	17.12	\$0.00	\$48.18
2	65	\$24.90	\$8.08	17.12	\$0.00	\$50.10
3	70	\$26.81	\$8.08	17.12	\$0.00	\$52.01
4	75	\$28.73	\$8.08	17.12	\$0.00	\$53.93
5	80	\$30.64	\$8.08	17.12	\$0.00	\$55.84
6	85	\$32.56	\$8.08	17.12	\$0.00	\$57.76
7	90	\$34.47	\$8.08	17.12	\$0.00	\$59.67
8	95	\$36.39	\$8.08	17.12	\$0.00	\$61.59

Notes:

Apprentice to Journeyworker Ratio:1:3

PIPEFITTER & STEAMFITTER <i>PIPEFITTERS LOCAL 537</i>	03/01/2012	\$46.84	\$8.75	\$14.39	0.00	\$69.98
	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

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**Awarding Authority:** City of Quincy

**Contract Number:** \_\_\_\_\_ **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - PIPEFITTER - Local 537</b>						
<b>Effective Date - 03/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.74	\$8.75	6.50	\$0.00	\$33.99
2	45	\$21.08	\$8.75	14.39	\$0.00	\$44.22
3	60	\$28.10	\$8.75	14.39	\$0.00	\$51.24
4	70	\$32.79	\$8.75	14.39	\$0.00	\$55.93
5	80	\$37.47	\$8.75	14.39	\$0.00	\$60.61
<b>Effective Date - 09/01/2012</b>						
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

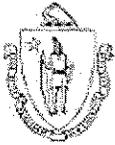
**Notes:**

\*\* 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 LABORERS - ZONE 1	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
PLUMBERS & GASFITTERS PLUMBERS & GASFITTERS LOCAL 12	03/01/2012	\$46.81	\$9.32	\$13.29	0.00	\$69.42
	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

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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - PLUMBER - Local 12</b>						
<b>Effective Date - 03/01/2012</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$16.38	\$9.32	4.97	\$0.00	\$30.67
2	40	\$18.72	\$9.32	5.61	\$0.00	\$33.65
3	55	\$25.75	\$9.32	7.53	\$0.00	\$42.60
4	65	\$30.43	\$9.32	8.81	\$0.00	\$48.56
5	75	\$35.11	\$9.32	10.09	\$0.00	\$54.52
<b>Effective Date - 09/01/2012</b>						
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

**Notes:**

\*\* 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr  
Step4 with lic\$51.54 Step5 with lic\$57.49

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

PNEUMATIC CONTROLS (TEMP.) PIPEFITTERS LOCAL 537	03/01/2012	\$46.84	\$8.75	\$14.39	0.00	\$69.98
	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
PNEUMATIC DRILL/TOOL OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
POWDERMAN & BLASTER LABORERS - ZONE 1	12/01/2011	\$32.80	\$7.10	\$12.45	0.00	\$52.35

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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

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

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.52	\$10.00	\$12.40	0.00	\$61.92
	06/01/2012	\$40.09	\$10.00	\$12.40	0.00	\$62.49
	12/01/2012	\$40.71	\$10.00	\$12.40	0.00	\$63.11
	06/01/2013	\$41.49	\$10.00	\$12.40	0.00	\$63.89
	12/01/2013	\$42.27	\$10.00	\$12.40	0.00	\$64.67
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.52	\$10.00	\$12.40	0.00	\$61.92
	06/01/2012	\$40.09	\$10.00	\$12.40	0.00	\$62.49
	12/01/2012	\$40.71	\$10.00	\$12.40	0.00	\$63.11
	06/01/2013	\$41.49	\$10.00	\$12.40	0.00	\$63.89
	12/01/2013	\$42.27	\$10.00	\$12.40	0.00	\$64.67
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$27.95	\$10.00	\$12.40	0.00	\$50.35
	06/01/2012	\$28.34	\$10.00	\$12.40	0.00	\$50.74
	12/01/2012	\$28.79	\$10.00	\$12.40	0.00	\$51.19
	06/01/2013	\$29.34	\$10.00	\$12.40	0.00	\$51.74
	12/01/2013	\$29.89	\$10.00	\$12.40	0.00	\$52.29
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>	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
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 **	05/01/2011	\$24.24	\$6.34	\$6.23	0.00	\$36.81

\*\* 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. *CARPENTERS -ZONE 2 (Residential Wood)*

As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:



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TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - CARPENTER (Residential Wood Frame) - Zone 2</b>						
<b>Effective Date - 05/01/2011</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.54	\$6.34	0.00	\$0.00	\$20.88
2	60	\$14.54	\$6.34	6.23	\$0.00	\$27.11
3	65	\$15.76	\$6.34	6.23	\$0.00	\$28.33
4	70	\$16.97	\$6.34	6.23	\$0.00	\$29.54
5	75	\$18.18	\$6.34	6.23	\$0.00	\$30.75
6	80	\$19.39	\$6.34	6.23	\$0.00	\$31.96
7	85	\$20.60	\$6.34	6.23	\$0.00	\$33.17
8	90	\$21.82	\$6.34	6.23	\$0.00	\$34.39

**Notes:**

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

RIDE-ON MOTORIZED BUGGY OPERATOR LABORERS - ZONE 1	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
ROLLER/SPREADER/MULCHING MACHINE OPERATING ENGINEERS LOCAL 4	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
ROOFER (Inc.Roofers Waterproofing &Roofers Damproofg) ROOFERS LOCAL 33	02/01/2012	\$35.56	\$10.50	\$10.70	0.00	\$56.76
	08/01/2012	\$36.56	\$10.50	\$10.70	0.00	\$57.76
	02/01/2013	\$37.56	\$10.50	\$10.70	0.00	\$58.76

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TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - ROOFER (Slate/Tile/Precast Concrete) - Local 33**

**Effective Date - 02/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.91	\$10.50	3.38	\$0.00	\$31.79
2	60	\$21.49	\$10.50	10.70	\$0.00	\$42.69
3	65	\$23.28	\$10.50	10.70	\$0.00	\$44.48
4	75	\$26.86	\$10.50	10.70	\$0.00	\$48.06
5	85	\$30.44	\$10.50	10.70	\$0.00	\$51.64

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.41	\$10.50	3.38	\$0.00	\$32.29
2	60	\$22.09	\$10.50	10.70	\$0.00	\$43.29
3	65	\$23.93	\$10.50	10.70	\$0.00	\$45.13
4	75	\$27.61	\$10.50	10.70	\$0.00	\$48.81
5	85	\$31.29	\$10.50	10.70	\$0.00	\$52.49

**Notes:**

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

SHEETMETAL WORKER	02/01/2012	\$40.79	\$9.82	\$17.34	2.04	\$69.99
SHEETMETAL WORKERS LOCAL 17 - A	08/01/2012	\$42.04	\$9.82	\$17.34	2.08	\$71.28
	02/01/2013	\$43.29	\$9.82	\$17.34	2.11	\$72.56

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Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - SHEET METAL WORKER - Local 17-A**

**Effective Date - 02/01/2012**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.32	\$9.82	3.74	\$0.00	\$29.88
2	45	\$18.36	\$9.82	7.45	\$1.07	\$36.70
3	50	\$20.40	\$9.82	8.42	\$1.16	\$39.80
4	60	\$24.47	\$9.82	9.60	\$1.32	\$45.21
5	65	\$26.51	\$9.82	10.32	\$1.40	\$48.05
6	75	\$30.59	\$9.82	11.76	\$1.57	\$53.74
7	85	\$34.67	\$9.82	12.69	\$1.72	\$58.90

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.82	\$9.82	3.74	\$0.00	\$30.38
2	45	\$18.92	\$9.82	7.45	\$1.09	\$37.28
3	50	\$21.02	\$9.82	8.42	\$1.18	\$40.44
4	60	\$25.22	\$9.82	9.60	\$1.34	\$45.98
5	65	\$27.33	\$9.82	10.32	\$1.42	\$48.89
6	75	\$31.53	\$9.82	11.76	\$1.59	\$54.70
7	85	\$35.73	\$9.82	12.69	\$1.75	\$59.99

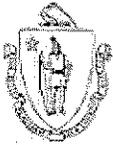
**Notes:**

Steps 1-3 are 1 year; Steps 4-7 are 6 mos.

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

SIGN ERECTOR PAINTERS LOCAL 35 - ZONE 2	06/01/2009	\$24.81	\$7.07	\$5.90	0.00	\$37.78
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Lt. Governor

**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - SIGN ERECTOR - Local 35 Zone 2</b>						
<b>Effective Date - 06/01/2009</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.41	\$7.07	0.00	\$0.00	\$19.48
2	55	\$13.65	\$7.07	2.40	\$0.00	\$23.12
3	60	\$14.89	\$7.07	2.40	\$0.00	\$24.36
4	65	\$16.13	\$7.07	2.40	\$0.00	\$25.60
5	70	\$17.37	\$7.07	5.90	\$0.00	\$30.34
6	75	\$18.61	\$7.07	5.90	\$0.00	\$31.58
7	80	\$19.85	\$7.07	5.90	\$0.00	\$32.82
8	85	\$21.09	\$7.07	5.90	\$0.00	\$34.06
9	90	\$22.33	\$7.07	5.90	\$0.00	\$35.30

**Notes:**  
Steps are 4 mos.

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

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE A	12/01/2011	\$31.24	\$8.56	\$7.27	0.00	\$47.07
	06/01/2012	\$31.54	\$8.56	\$7.27	0.00	\$47.37
	08/01/2012	\$31.54	\$8.91	\$7.27	0.00	\$47.72
	12/01/2012	\$31.84	\$8.91	\$8.00	0.00	\$48.75
SPECIALIZED EARTH MOVING EQUIP > 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE A	12/01/2011	\$31.53	\$8.56	\$7.27	0.00	\$47.36
	06/01/2012	\$31.83	\$8.56	\$7.27	0.00	\$47.66
	08/01/2012	\$31.83	\$8.91	\$7.27	0.00	\$48.01
	12/01/2012	\$32.13	\$8.91	\$8.00	0.00	\$49.04

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**Awarding Authority:** City of Quincy

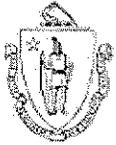
**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPRINKLER FITTER	03/01/2012	\$51.58	\$8.42	\$11.60	0.00	\$71.60
<i>SPRINKLER FITTERS LOCAL 550</i>	09/01/2012	\$52.58	\$8.42	\$11.60	0.00	\$72.60
	03/01/2013	\$53.58	\$8.42	\$11.60	0.00	\$73.60

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**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - SPRINKLER FITTER - Local 550**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.05	\$8.42	7.85	\$0.00	\$34.32
2	40	\$20.63	\$8.42	7.85	\$0.00	\$36.90
3	45	\$23.21	\$8.42	7.85	\$0.00	\$39.48
4	50	\$25.79	\$8.42	7.85	\$0.00	\$42.06
5	55	\$28.37	\$8.42	7.85	\$0.00	\$44.64
6	60	\$30.95	\$8.42	7.85	\$0.00	\$47.22
7	65	\$33.53	\$8.42	7.85	\$0.00	\$49.80
8	70	\$36.11	\$8.42	7.85	\$0.00	\$52.38
9	75	\$38.69	\$8.42	7.85	\$0.00	\$54.96
10	80	\$41.26	\$8.42	7.85	\$0.00	\$57.53

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$18.40	\$8.42	7.85	\$0.00	\$34.67
2	40	\$21.03	\$8.42	7.85	\$0.00	\$37.30
3	45	\$23.66	\$8.42	7.85	\$0.00	\$39.93
4	50	\$26.29	\$8.42	7.85	\$0.00	\$42.56
5	55	\$28.92	\$8.42	7.85	\$0.00	\$45.19
6	60	\$31.55	\$8.42	7.85	\$0.00	\$47.82
7	65	\$34.18	\$8.42	7.85	\$0.00	\$50.45
8	70	\$36.81	\$8.42	7.85	\$0.00	\$53.08
9	75	\$39.44	\$8.42	7.85	\$0.00	\$55.71
10	80	\$42.06	\$8.42	7.85	\$0.00	\$58.33

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:



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Director

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

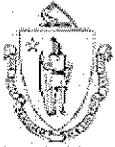
Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Notes:**

Apprentice to Journeyworker Ratio:1:1

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2012	\$31.78	\$13.00	\$12.23	0.00	\$57.01
	09/01/2012	\$32.29	\$13.00	\$12.25	0.00	\$57.54
	03/01/2013	\$32.83	\$13.00	\$12.26	0.00	\$58.09
	09/01/2013	\$33.34	\$13.00	\$12.28	0.00	\$58.62
	03/01/2014	\$33.88	\$13.00	\$12.30	0.00	\$59.18
	09/01/2014	\$34.38	\$13.00	\$12.31	0.00	\$59.69
	03/01/2015	\$34.91	\$13.00	\$12.33	0.00	\$60.24
	09/01/2015	\$35.63	\$13.00	\$12.35	0.00	\$60.98
03/01/2016	\$36.35	\$13.00	\$12.37	0.00	\$61.72	

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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

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lt. Governor

**Awarding Authority:** City of Quincy

**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$12.71	\$13.00	9.27	\$0.00	\$34.98
2	40	\$12.71	\$13.00	9.27	\$0.00	\$34.98
3	45	\$14.30	\$13.00	9.51	\$0.00	\$36.81
4	45	\$14.30	\$13.00	9.51	\$0.00	\$36.81
5	50	\$15.89	\$13.00	9.76	\$0.00	\$38.65
6	55	\$17.48	\$13.00	10.01	\$0.00	\$40.49
7	60	\$19.07	\$13.00	10.26	\$0.00	\$42.33
8	65	\$20.66	\$13.00	10.50	\$0.00	\$44.16
9	70	\$22.25	\$13.00	10.75	\$0.00	\$46.00
10	75	\$23.84	\$13.00	11.00	\$0.00	\$47.84

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$12.92	\$13.00	9.28	\$0.00	\$35.20
2	40	\$12.92	\$13.00	9.28	\$0.00	\$35.20
3	45	\$14.53	\$13.00	9.53	\$0.00	\$37.06
4	45	\$14.53	\$13.00	9.53	\$0.00	\$37.06
5	50	\$16.15	\$13.00	9.77	\$0.00	\$38.92
6	55	\$17.76	\$13.00	10.02	\$0.00	\$40.78
7	60	\$19.37	\$13.00	10.27	\$0.00	\$42.64
8	65	\$20.99	\$13.00	10.52	\$0.00	\$44.51
9	70	\$22.60	\$13.00	10.77	\$0.00	\$46.37
10	75	\$24.22	\$13.00	11.02	\$0.00	\$48.24

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:



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HEATHER E. ROWE  
Director

**Awarding Authority:** City of Quincy  
**Contract Number:** **City/Town:** QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Notes:**

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

TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	03/01/2012	\$45.50	\$10.18	\$17.25	0.00	\$72.93
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**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.75	\$10.18	17.25	\$0.00	\$50.18
2	60	\$27.30	\$10.18	17.25	\$0.00	\$54.73
3	70	\$31.85	\$10.18	17.25	\$0.00	\$59.28
4	80	\$36.40	\$10.18	17.25	\$0.00	\$63.83
5	90	\$40.95	\$10.18	17.25	\$0.00	\$68.38

**Notes:**  
Steps are 800 hrs.

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

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2011	\$33.05	\$7.10	\$12.60	0.00	\$52.75
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**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

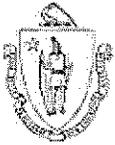
Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - TEST BORING DRILLER (Laborers Foundation &amp; Marine)</b>						
<b>Effective Date - 12/01/2011</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$19.83	\$7.10	12.60	\$0.00	\$39.53
2	70	\$23.14	\$7.10	12.60	\$0.00	\$42.84
3	80	\$26.44	\$7.10	12.60	\$0.00	\$46.14
4	90	\$29.75	\$7.10	12.60	\$0.00	\$49.45

**Notes:**

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

TEST BORING DRILLER HELPER LABORERS - FOUNDATION AND MARINE	12/01/2011	\$31.77	\$7.10	\$12.60	0.00	\$51.47
TEST BORING LABORER LABORERS - FOUNDATION AND MARINE	12/01/2011	\$31.65	\$7.10	\$12.60	0.00	\$51.35

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**Awarding Authority:** City of Quincy  
**Contract Number:** City/Town: QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

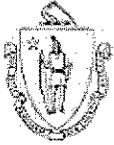
Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - TEST BORING LABORER (Laborers Foundation &amp; Marine)</b>						
<b>Effective Date - 12/01/2011</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$18.99	\$7.10	12.60	\$0.00	\$38.69
2	70	\$22.16	\$7.10	12.60	\$0.00	\$41.86
3	80	\$25.32	\$7.10	12.60	\$0.00	\$45.02
4	90	\$28.49	\$7.10	12.60	\$0.00	\$48.19

**Notes:**

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

TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.16	\$10.00	\$12.40	0.00	\$61.56
	06/01/2012	\$39.72	\$10.00	\$12.40	0.00	\$62.12
	12/01/2012	\$40.34	\$10.00	\$12.40	0.00	\$62.74
	06/01/2013	\$41.11	\$10.00	\$12.40	0.00	\$63.51
	12/01/2013	\$41.89	\$10.00	\$12.40	0.00	\$64.29
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2011	\$31.82	\$8.56	\$7.27	0.00	\$47.65
	06/01/2012	\$32.12	\$8.56	\$7.27	0.00	\$47.95
	08/01/2012	\$32.12	\$8.91	\$7.27	0.00	\$48.30
	12/01/2012	\$32.42	\$9.07	\$8.00	0.00	\$49.49
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2011	\$44.08	\$7.10	\$13.00	0.00	\$64.18
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2011	\$46.08	\$7.10	\$13.00	0.00	\$66.18
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2011	\$36.15	\$7.10	\$13.00	0.00	\$56.25

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**Awarding Authority:** City of Quincy

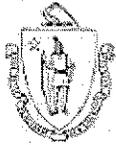
**Contract Number:** City/Town: QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2011	\$38.15	\$7.10	\$13.00	0.00	\$58.25
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2011	\$31.24	\$8.56	\$7.27	0.00	\$47.07
	06/01/2012	\$31.54	\$8.56	\$7.27	0.00	\$47.37
	08/01/2012	\$31.54	\$8.91	\$7.27	0.00	\$47.72
	12/01/2012	\$31.84	\$8.91	\$8.00	0.00	\$48.75
WAGON DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2011	\$32.05	\$7.10	\$12.45	0.00	\$51.60
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2011	\$39.52	\$10.00	\$12.40	0.00	\$61.92
	06/01/2012	\$40.09	\$10.00	\$12.40	0.00	\$62.49
	12/01/2012	\$40.71	\$10.00	\$12.40	0.00	\$63.11
	06/01/2013	\$41.49	\$10.00	\$12.40	0.00	\$63.89
	12/01/2013	\$42.27	\$10.00	\$12.40	0.00	\$64.67
WATER METER INSTALLER <i>PLUMBERS &amp; GASFITTERS LOCAL 12</i>	03/01/2012	\$46.81	\$9.32	\$13.29	0.00	\$69.42
	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
<b>Outside Electrical - East</b>						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$27.11	\$6.70	\$1.50	0.00	\$35.31
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$38.41	\$6.70	\$1.00	0.00	\$46.11
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$31.63	\$6.70	\$2.50	0.00	\$40.83
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$24.85	\$6.70	\$1.50	0.00	\$33.05
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$38.41	\$6.70	\$5.00	0.00	\$50.11
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$33.89	\$6.70	\$2.75	0.00	\$43.34

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**Awarding Authority:** City of Quincy  
**Contract Number:** \_\_\_\_\_ **City/Town:** QUINCY  
**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.  
**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$24.85	\$6.70	\$1.00	0.00	\$32.55
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$20.34	\$6.70	\$0.75	0.00	\$27.79
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/29/2011	\$45.19	\$6.70	\$7.86	0.00	\$59.75

**Apprentice - LINEMAN (Outside Electrical) - East Local 104**

**Effective Date -** 08/29/2011

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$27.11	\$6.70	2.11	\$0.00	\$35.92
2	65	\$29.37	\$6.70	2.36	\$0.00	\$38.43
3	70	\$31.63	\$6.70	2.86	\$0.00	\$41.19
4	75	\$33.89	\$6.70	3.36	\$0.00	\$43.95
5	80	\$36.15	\$6.70	3.86	\$0.00	\$46.71
6	85	\$38.41	\$6.70	4.36	\$0.00	\$49.47
7	90	\$40.67	\$6.70	5.36	\$0.00	\$52.73

**Notes:**

**Apprentice to Journeyworker Ratio:1:2**

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	07/18/2011	\$25.94	\$4.18	\$2.78	0.00	\$32.90
	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>	07/18/2011	\$24.42	\$4.18	\$2.73	0.00	\$31.33
	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>	07/18/2011	\$24.42	\$4.18	\$2.73	0.00	\$31.33
	07/16/2012	\$24.78	\$4.18	\$2.74	0.00	\$31.70

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**Awarding Authority:** City of Quincy

**Contract Number:** **City/Town:** QUINCY

**Description of Work:** Remove existing air handler located within the server room rooftop condensing unit completely. Shall include all controls, piping, ductwork, diffusers, hangers supports as well as condensate piping.

**Job Location:** 1 Sea St., QPD 911 Server Room, Quincy MA

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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 Apprentice 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. Apprentice 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.

This wage schedule must be posted by the contractor at the work site in accordance with M.G.L. ch. 149, sec. 27. Failure of the employer to pay "prevailing wage rates," which are the "total rates" listed above, on public works projects is a violation of M.G.L. ch. 149, sec. 27. Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at [www.mass.gov/dols](http://www.mass.gov/dols) or at 617-626-6952. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:

### ABBREVIATIONS

(NOT ALL ABBREV. ARE NECESSARILY USED ON THIS PROJECT)

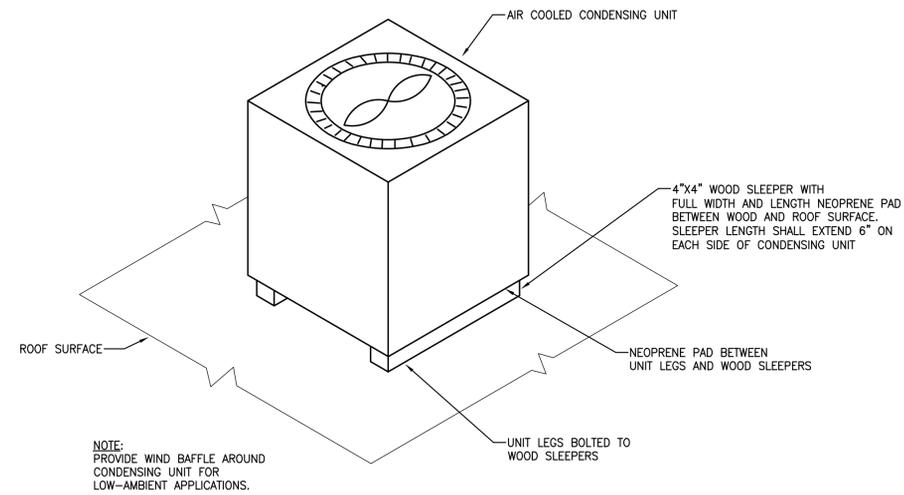
A	AMPERES	HV	HEATING AND VENTILATING
AAV	AUTOMATIC AIR VENT	HX	HEAT EXCHANGER
AC	AIR CONDITIONING	IN	INCH OR INCHES
ACCU	AIR COOLED CONDENSING UNIT	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	L	LENGTH
BHP	BRAKE HORSEPOWER	LAT	LEAVING AIR TEMPERATURE
BMS	BUILDING MANAGEMENT SYSTEM	LBS	POUNDS
BTU	BRITISH THERMAL UNIT	LDB	LEAVING DRY BULB TEMPERATURE
BTUH	BTU PER HOUR	LF, LIN.FT.	LINEAR FEET
CFM	CUBIC FEET PER MINUTE	LRA	LOCKED ROTOR AMPS
C.O.	CLEANOUT	LWB	LEAVING WET BULB TEMPERATURE
COND	CONDENSATE	MAX	MAXIMUM
CP	CONDENSATE PUMP	MBH	THOUSAND BTU PER HOUR
CU IN	CUBIC INCHES	MHP	MOTOR HORSEPOWER
DB	DRY BULB	MIN	MINIMUM
DX	DIRECT EXPANSION	NIC	NOT IN CONTRACT
DIAM	DIAMETER	NO.	NUMBER
DN	DOWN	NTS	NOT TO SCALE
EA	EACH	OA	OUTSIDE AIR
EAT	ENTERING AIR TEMPERATURE	P	PUMP
EDB	ENTERING DRY BULB TEMPERATURE	PD	PRESSURE DROP
ELEC	ELECTRIC	RH	RELATIVE HUMIDITY
EWB	ENTERING WET BULB	RPM	REVOLUTIONS PER MINUTE
EXIST	EXISTING	SA	SUPPLY AIR
F	DEGREES FAHRENHEIT	SP	STATIC PRESSURE
FA	FREE AREA (SQ.FT.)	TEMP	TEMPERATURE
FC	FLEXIBLE CONNECTION	TYP	TYPICAL
FD	FIRE DAMPER	UON	UNLESS OTHERWISE NOTED
FLA	FULL LOAD AMPERES	V	VOLTS
FPM	FEET PER MINUTE	W	WIDTH
FPS	FEET PER SECOND	W/	WITH
FT	FEET	W/O	WITHOUT
FV	FACE VELOCITY	WB	WET BULB
GPM	GALLONS PER MINUTE		
H	HUMIDIFIER		
HC	HEATING COIL		
HD	HEAD		
HR	HOUR		
HT	HEIGHT		

### GENERAL NOTES

- GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
  - DRAWINGS ARE DIAGRAMMATIC. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.
  - WORK IN THIS SECTION IS SPECIFIED ON DRAWINGS M-3.0, M-3.1 AND M3.2.
  - COORDINATE THIS WORK WITH THAT OF OTHER TRADES.
  - DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT IN WAY OF STRUCTURAL STEEL. DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
  - NEITHER ACCURACY NOR COMPLETION OF SERVICES AND UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED. DETERMINE EXACT LOCATIONS OF EXISTING SERVICES AND UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
  - MANUFACTURERS MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
  - PRODUCT INSTALLATION SHALL ADHERE TO ALL MANUFACTURERS RECOMMENDATIONS.
  - PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.
  - PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.
  - SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.
  - COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. MECHANICAL CONTRACTOR TO NOTIFY OWNER PRIOR TO STARTING WORK TO VERIFY COMPLIANCE WITH BOND AND WARRANTY OF EXISTING ROOF.
  - RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS.
  - INSTALL THERMOSTATS 4"-6" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.
  - STRUCTURAL WELDING SHALL BE CONTINUOUS 1/4" FILLET UNLESS REQUIRED OTHERWISE.
- AIR SYSTEMS**
- AIR SYSTEMS REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
  - INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
  - USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
  - DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
  - PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.
  - DUCTWORK DOWNSTREAM OF ALL VAV AND FAN POWERED VAV BOXES SHALL BE ACOUSTICALLY LINED WITH 1" ACOUSTICAL LINING FOR A MINIMUM OF 15 FEET.
  - PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.
  - PROVIDE DUCT TRANSITIONS FROM VAV BOX INLET/OUTLET DUCT WORK AT SIZES INDICATED TO VAV BOX INLET/OUTLET UNIT CONNECTIONS.
  - VAV DUCT INLET SIZE SHALL BE AS SCHEDULED OR AS INDICATED ON THE FLOOR PLANS. PROVIDE TRANSITION FROM DUCT SIZE INDICATED ON THE FLOOR PLANS TO SCHEDULED SIZE MINIMUM 2'-0" FROM VAV BOX INLETS.
- PIPING SYSTEMS**
- PITCH PIPING 1" IN 20' IN DIRECTION OF FLOW.
  - PROVIDE TRAPS IN CONDENSATE LINES THAT EXTEND OVER 2".

### DEMOLITION NOTES

- GENERAL
  - THIS CONTRACTOR SHALL VISIT THE SITE AND ADJOINING AREAS AND EXAMINE THE EXISTING CONDITIONS TO BECOME FAMILIAR WITH THEM AND TO DETERMINE THE DIFFICULTIES WHICH WILL AFFECT THE EXECUTION OF THE WORK OF THIS CONTRACT. THIS CONTRACTOR SHALL PERFORM THIS PRIOR TO THE SUBMISSION OF HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
  - THE DEMOLITION WORK SHALL INCLUDE, PROVIDING ALL MATERIALS, ALL NECESSARY EXTENSIONS, CONNECTIONS, CUTTING, REPAIRING, ADAPTING AND OTHER MECHANICAL WORK REQUIRED, TOGETHER WITH ANY REQUIRED TEMPORARY CONNECTIONS TO MAINTAIN SERVICE PENDING THE COMPLETION OF THE PERMANENT WORK. NOTES AND GRAPHIC REPRESENTATION SHALL NOT LIMIT THE EXTENT OF DEMOLITION REQUIRED. EXTENT OF DEMOLITION WORK SHALL BE COORDINATED WITH THE ARCHITECT AND BUILDING MANAGEMENT.
- SCOPE OF WORK
  - EXISTING WORK INTERFERING WITH NEW.
    - ALL EXISTING WORK REQUIRED TO REMAIN BUT INTERFERING WITH PROPOSED NEW MECHANICAL (AS WELL AS ELECTRICAL AND GENERAL CONSTRUCTION WORK) SHALL BE RELOCATED AND RECONNECTED USING MATERIALS CONFORMING TO STANDARDS OF THIS CONTRACT.
  - REMOVAL OF MECHANICAL EQUIPMENT DUCTWORK AND PIPING.
    - REMOVE EXISTING FLOOR MOUNTED AIR CONDITIONING UNIT AND ASSOCIATED OUTDOOR HEAT REJECTION DEVICE WITH ALL ASSOCIATED DUCTWORK, PIPING, DIFFUSERS, GRILLES, HANGERS AND ACCESSORIES.
- REMOVAL OF DUCTWORK AND ACCESSORIES
  - REMOVE ALL SUPPLY AIR AND RETURN AIR DUCTWORK WITH ALL ASSOCIATED DIFFUSERS, CONTROLS, COLLARS, DAMPERS, RETURN GRILLES AND CONTROLS AS NOTED ON DRAWINGS.
  - CONTRACTOR TO CONTACT BUILDING MANAGEMENT REGARDING DUCTWORK REMOVAL SCOPE OF WORK TO ENSURE THAT OTHER AREAS THAT ARE TO STAY OPERATIONAL ARE NOT AFFECTED BY REMOVAL OF THE DUCTWORK.
- CONTRACTOR TO REPLACE/PATCH WALLS, FLOORS AND ROOF TO MATCH EXISTING. CONTRACTOR SHALL COORDINATE WITH ROOF MEMBRANE MANUFACTURER TO ENSURE ALL WARRANTIES ARE MAINTAINED.
- PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING DUCTS AND PIPING TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILING AND PARTITIONS.
- EQUIPMENT REQUIRED TO BE TURNED OVER TO THE OWNER SHALL BE DELIVERED BY THE CONTRACTOR TO THE CITY OF QUINCY STORAGE BUILDING OFF OF EAST SQUANTUM STREET, QUINCY, MA.
- ALL MATERIALS AND EQUIPMENT REMOVED AS A RESULT OF DEMOLITION SHALL BE TAKEN FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS.
- CONTRACTOR SHALL IDENTIFY ALL EXISTING WORK TO REMAIN BY ACCEPTABLE IDENTIFICATION MEANS TO CONFIRM PROPER SCOPE PRIOR TO COMMENCEMENT OF DEMOLITION.



1 ROOFTOP CONDENSING UNIT MOUNTING DETAIL  
M-1

### AIR COOLED CONDENSING UNIT SCHEDULE

UNIT No.	LOCATION	SERVICE	COMPRESSOR DATA				HEAT REJECTION		CONDENSER FAN		PHYSICAL CHARACTERISTICS						ELECTRICAL DATA				MANUF. MODEL #	REMARKS
			No.	TYPE	FLA (EA)	REFRIGERANT	OUTSIDE AIR (°F)	NOM. CAP. (MBH)	NO. OF FANS	RPM	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	APPROX. OPERATING WT. (LBS)	VOLTS	PHASE	HZ	FLA	MCA	MOCP		
ACCU-1	ROOF	CRAC-1	1	SCROLL	10.4	407C	105	24	1	3000	40	18	24	200	208	1	60	13.4	16.4	25	LIEBERT PFH027A	1, 2, 3
ACCU-2	ROOF	CRAC-2	1	SCROLL	10.4	407C	105	24	1	3000	40	18	24	200	208	1	60	13.4	16.4	25	LIEBERT PFH027A	1, 2, 3

- UNIT SHALL BE PROVIDED WITH HERMETIC SCROLL COMPRESSOR, COMPRESSOR ANTI-SHORT CYCLE TIMER, CRANKCASE HEATER HOT GAS BYPASS AND LOW AMBIENT CONTROL KIT
- UNIT TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS FOR CLEARANCE AND SERVICE ACCESS.
- MOUNT UNIT ON 4" X 4" PRESSURE TREATED WOOD SLEEPERS WITH ISOLATION PADS. SLEEPERS SHALL EXTEND 6" ON EACH SIDE OF CONDENSING UNIT

### COMPUTER ROOM AIR CONDITIONING UNIT SCHEDULE

UNIT No.	LOCATION	CONFIGURATION	SUPPLY FAN DATA			EVAPORATOR COIL DATA		REHEAT DATA		HUMIDIFIER DATA		UNIT DIMENSIONS			APPROX. OPERATING WT. (LBS)	ELECTRICAL DATA				MANUF. MODEL #	REMARKS			
			CFM	EXT. SP (IN. W.G.)	MHP	SENSIBLE	TOTAL	TYPE	CAPACITY (MBH)	MAX. CAPACITY (KW)	TYPE	MAX. CAPACITY (LBS/HR)	LENGTH (IN)	WIDTH (IN)		HEIGHT (IN)	VOLTS	PHASE	HZ			FLA	MCA	MOCP
CRAC-1	ROOM	UPFLOW	1230	0.5	0.2	20.6	21.7	ELEC.	18.1	5.3	STEAM	3	64 1/2"	11 1/2"	32	350	208	1	60	29.3	36.6	40	LIEBERT DATAMATE DME027E	1, 2, 3, 4, 5, 6
CRAC-2	ROOM	UPFLOW	1230	0.5	0.2	20.6	21.7	ELEC.	18.1	5.3	STEAM	3	64 1/2"	11 1/2"	32	350	208	1	60	29.3	36.6	40	LIEBERT DATAMATE DME027E	1, 2, 3, 4, 5, 6

- SUPPORT UNIT FROM EXISTING WALL USING KEYHOLE SLOTS. FIELD COORDINATE HEIGHT WITH OWNER. FIELD COORDINATE BRACING TO SUPPORT UNIT AS REQUIRED.
- UNIT SHALL BE PROVIDED WITH THE FOLLOWING ACCESSORIES: HOT GAS BYPASS WITH REMOTE CONDENSING UNIT, UNIT MOUNTED CONDENSATE PUMP, REFRIGERANT LINE SWEAT ADAPTOR KIT AND 7-DAY PROGRAMMABLE THERMOSTAT.
- PROVIDE WITH MANUFACTURER'S CONTROLS WITH INTERFACE TO COMMUNICATE WITH NIAGRA AX FRAMEWORK
- PROVIDE UNIT WITH AUTO CHANGE OVER PANEL TO ALTERNATE UNIT RUN TIME AND SWITCH OVER UPON AN ALARM CONDITION.
- PROVIDE ITEMIZED ALTERNATE PRICING TO PROVIDE NEW BMS SYSTEM TO SEND REMOTE EMAIL/TEXT ALARM TO FACILITIES PERSONNEL.



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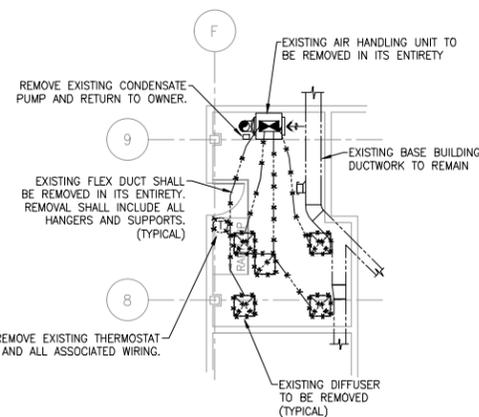
Arlington, VA • Boston, MA • Columbus, OH • Minneapolis, MN  
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3	3/6/2012	ISSUED FOR PRICING
2	7/15/2011	ISSUED FOR PRICING
1	7/6/2011	ISSUED FOR PRICING

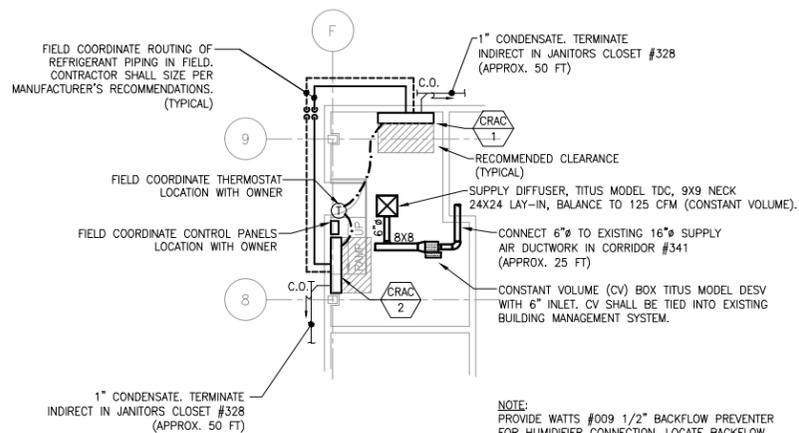
PROJECT  
**CITY OF QUINCY  
POLICE HEADQUARTERS  
SERVER ROOM  
COOLING**

DRAWING TITLE  
**MECHANICAL  
LEGEND, NOTES,  
DETAILS AND SCHEDULES**

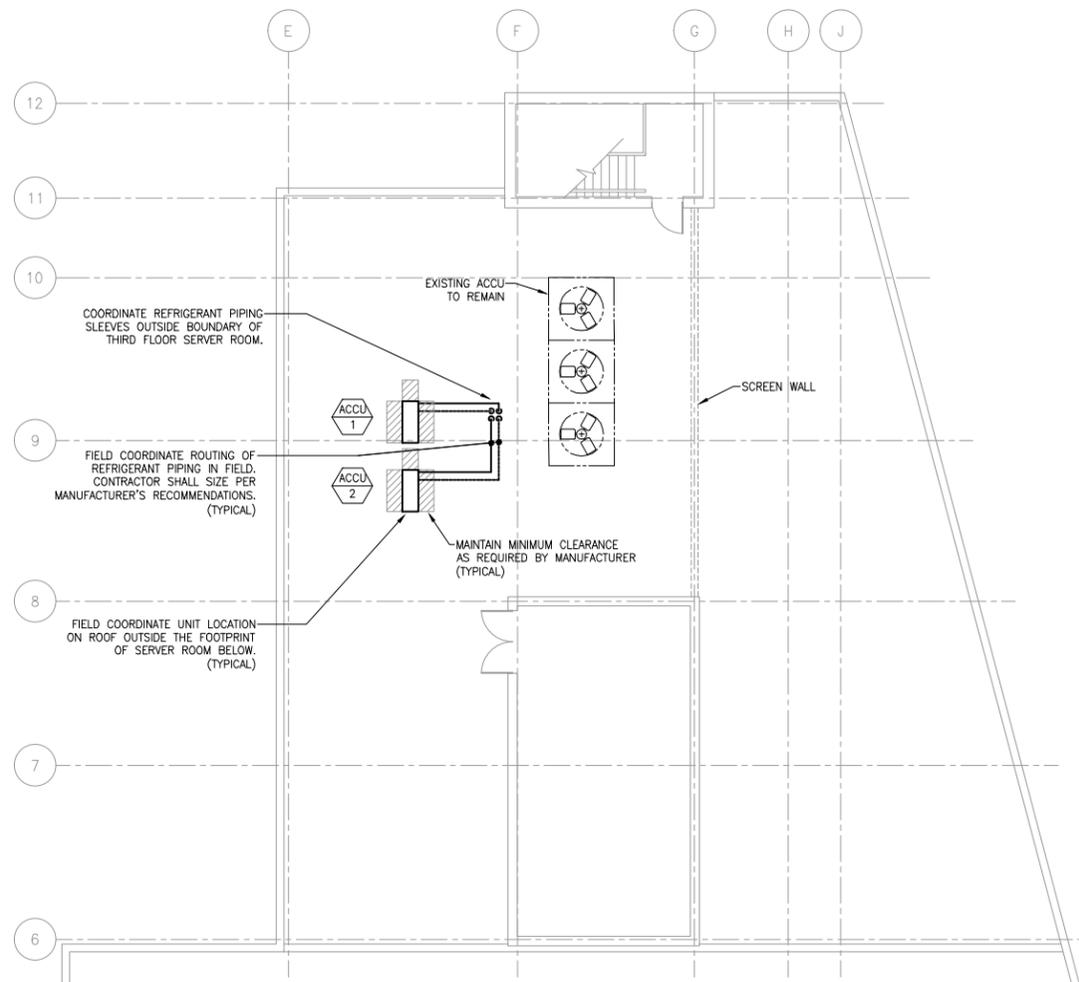
Drawn By	JCL	Drawing No.	<b>M-1.0</b>
Checked By	JCL		
Date	07/01/2011		
Scale	N.T.S.		
Project No.	B110078-000		



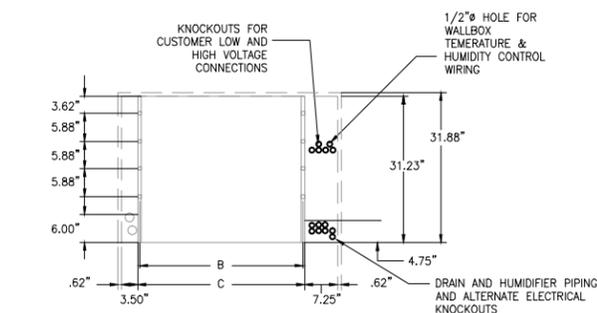
**1 THIRD FLOOR DEMOLITION PART PLAN**  
 SCALE: 1/8"=1'-0"



**2 THIRD FLOOR NEW WORK PART PLAN**  
 SCALE: 1/8"=1'-0"



**3 ROOF PART PLAN**  
 SCALE: 1/8"=1'-0"



MODEL	DIMENSIONAL DATA IN.			SHIPPED WEIGHT (LBS)
	A	B	C	
DME027E	64 1/8"	51 1/2"	52 3/16"	330

**4 LAYOUT FOR KEYHOLE SLOTS (LIEBERT DATAMATE)**  
 SCALE: N.T.S.

- NOTES:**
- EXISTING AHU AND ASSOCIATED CONDENSING UNIT SHALL BE REMOVED IN THEIR ENTIRETY. REMOVAL SHALL INCLUDE ALL ASSOCIATED DUCTWORK, DIFFUSERS, PIPING, CONTROLS, HANGERS AND SUPPORTS. ALL OPENINGS CREATED BY REMOVAL OF PIPING SHALL BE PATCHED AND FILLED.
  - EXISTING AHU AND ASSOCIATED CONDENSING UNIT SHALL BE RETURNED TO THE OWNER. CONTRACTOR SHALL COORDINATE DIRECTLY WITH OWNER AND INCLUDE RELOCATION TO THE CITY OF QUINCY STORAGE BUILDING OFF OF EAST SQUANTUM ST. QUINCY.
  - UPON REMOVAL OF EXISTING CONDENSING UNIT, ROOF MEMBRANE SHALL BE PATCHED AND REPAIRED AS REQUIRED. COORDINATE REPAIR WITH ROOF MEMBRANE MANUFACTURER TO MAINTAIN ALL WARRANTIES.
  - ALL DEMOLITION AND NEW WORK SHALL BE PHASED BY THE CONTRACTOR TO MAINTAIN COOLING WITHIN SERVER ROOM AT ALL TIMES. PROVIDE TEMPORARY AC EQUIPMENT AS REQUIRED. COORDINATE ALL WORK WITH OWNER.
  - DEMOLITION WORK WITHIN EXISTING SERVER ROOM SHALL BE DONE IN A MANNER WHICH WILL NOT CREATE DUST AND DEBRIS.
  - THIS CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL EXISTING SERVER EQUIPMENT WHICH IS TO REMAIN OPERATIONAL DURING CONSTRUCTION.
  - THIS CONTRACTOR SHALL PROVIDE ALL REQUIRED BLOCKING TO SUPPORT UNITS FROM EXISTING WALL.
  - THIS CONTRACTOR SHALL PROVIDE NIAGRA AX FRAMEWORK WHICH SHALL BE CAPABLE OF PROVIDING ACCESS TO THE CONTROL SYSTEM VIA ANY STANDARD WEB BROWSER

**PHASING SCHEDULE**

- COORDINATE WITH THE GENERAL CONTRACTOR FOR THE CONSTRUCTION PHASING AND INSTALLATION OF THE ROOM AC UNITS TO AVOID HAVING A SHUTDOWN OF THE ROOM.

**EQUIPMENT REMOVAL NOTE:**  
 ALL EXISTING EQUIPMENT REMOVED SHALL BE RELOCATED AND STORED IN THE CITY OF QUINCY STORAGE BUILDING OFF OF EAST SQUANTUM ST. QUINCY. COORDINATE WITH GENERAL CONTRACTOR AND FOR ADDITIONAL INFORMATION.

No.	Date	Description
3	3/6/2012	ISSUED FOR PRICING
2	7/15/2011	ISSUED FOR PRICING
1	7/6/2011	ISSUED FOR PRICING

PROJECT  
**CITY OF QUINCY  
 POLICE HEADQUARTERS  
 SERVER ROOM  
 COOLING**

DRAWING TITLE  
**MECHANICAL  
 PART PLANS**

Drawn By	JCL	Drawn No.
Checked By	JCL	
Date	07/01/2011	
Scale	AS NOTED	
Project No.	B110078-000	

**M-2.0**



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 Stamford, CT • Worcester, MA

MECHANICAL SPECIFICATIONS  
 (COORDINATE FILED SUB-BID REQUIREMENTS WITH OWNER)

REQUIREMENTS FOR SUBMITTING SUB-BIDS

- A. SUB-BID SHALL BE SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF GENERAL LAW, CHAPTER 149, SECTION 44A TO 44I, INCLUSIVE AS AMENDED.
- B. SUB-BIDS FOR WORK UNDER THIS SECTION SHALL BE RECEIVED AT THE OFFICE OF THE CITY MANAGER, AT WHICH TIME ALL FILED SUB-BIDS SHALL BE OPENED, READ ALOUD, AND DULY RECORDED.
- C. ALL SUB-BIDS SHALL BE SUBMITTED ON THE FORM FOR FILED SUB-BID FURNISHED BY THE AWARDING AUTHORITY AS REQUIRED BY SECTION 44C OF CHAPTER 149 OF THE GENERAL LAWS, AS AMENDED. SUB-BIDS WHICH ARE INCOMPLETE, CONDITIONAL, OBSCURE, OR WHICH CONTAIN ADDITIONS NOT CALLED FOR WILL BE REJECTED.
- D. SUB-BIDS FILED WITH THE AWARDING AUTHORITY SHALL BE ACCOMPANIED BY A BID DEPOSIT IN THE FORM OF A CERTIFIED CHECK OR A TREASURER'S OR CASHIER'S CHECK ISSUED BY A RESPONSIBLE BANK OR TRUST COMPANY, PAYABLE TO THE CITY OF BOSTON, A BID BOND SHALL BE:
  - 1) ON A FORM SATISFACTORY TO THE AWARDING AUTHORITY.
  - 2) WITH A SURETY COMPANY QUALIFIED TO DO BUSINESS IN THE COMMONWEALTH OF MASSACHUSETTS, AND SATISFACTORY TO THE AWARDING AUTHORITY.
  - 3) CONDITIONED UPON THE FAITHFUL PERFORMANCE BY THE PRINCIPAL OF THE AGREEMENTS CONTAINED IN THE BID. THE AMOUNT OF THE BID DEPOSIT SHALL BE FIVE PERCENT (5%) OF THE VALUE OF THE BID.
- E. SUB-BIDS FOR WORK UNDER THIS SECTION SHALL BE FOR THE COMPLETE WORK REQUIRED AS SPECIFIED AND AS SHOWN ON THE DRAWINGS.
- F. SUB-BIDDERS ARE DIRECTED TO THE INSTRUCTION TO BIDDERS, AND TO THE REQUIREMENTS THAT ALL BIDDERS VISIT THE SITE TO DETERMINE THE SCOPE OF WORK REQUIRED UNDER THIS SECTION.
- G. THE FILED SUB-BIDDER FOR THE WORK OF THE SECTION SHALL LIST, ON THE FORM FOR SUB-BID, THE NAME OF EACH PERSON, FIRM OR CORPORATION, WHOM HE PROPOSES TO USE TO PERFORM WORK OR PART THEREOF, AT THE BID PRICE. IF THE SUB-BIDDER INTENDS TO PERFORM WORK WITH PERSONNEL OF HIS OWN STAFF, HE MUST NEVERTHELESS LIST HIS OWN NAME THEREFOR, ON THE FORM FOR SUB-BID.

1. GENERAL

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- C. INVESTIGATE EACH SPACE THROUGH WITH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.
- E. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNE FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY, WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
- F. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- G. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- H. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME.
- I. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.
- J. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.
- K. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- L. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- M. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- N. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
- O. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

- P. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC.) AND CONDITIONS.
- Q. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
- R. GUARANTEE:
  - 1) ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE MECHANICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNERS PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE SYSTEM.
  - 2) THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL INCLUDE RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THIS CONTRACTOR.
  - 3) THIS CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF ALL SYSTEMS UNTIL THE FINAL ACCEPTANCE OF THE WORK.
  - 4) ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION COMPONENTS SHALL HAVE A 5-YEAR WARRANTY.
- S. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES, WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
- 2. SCOPE OF WORK
  - A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCE NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.
  - B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
  - C. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROL SYSTEMS INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
  - D. WITHIN 15 DAYS AFTER AWARD OF CONTRACT, SUBMIT FOR REVIEW, A LIST OF ALL MATERIAL AND EQUIPMENT MANUFACTURER'S PRODUCTS THAT ARE PROPOSED, AS WELL AS NAMES OF ALL SUBCONTRACTORS WHOM THIS TRADE PROPOSES TO UTILIZE ON THIS PROJECT.
- 3. SHOP DRAWINGS
  - A. INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION, ARCHITECT AND ENGINEER, ITEM IDENTIFICATION AND APPROVAL STAMP OF PRIME CONTRACTOR, SUBCONTRACTOR NAMES AND PHONE NUMBERS, REFERENCE TO THE APPLICABLE DESIGN DRAWING OR SPECIFICATION ARTICLE, DATE AND SCALE.
  - B. THE WORK DESCRIBED IN ALL SHOP DRAWING SUBMISSION SHALL BE CAREFULLY CHECKED FOR ALL CLEARANCES (INCLUDING THOSE REQUIRED FOR MAINTENANCE AND SERVICING), FIELD CONDITIONS, MAINTENANCE OF ARCHITECTURAL CONDITIONS AND PROPER COORDINATION WITH ALL TRADES ON THE JOB.
  - C. ALL SHOP DRAWINGS ARE TO BE SUBMITTED TO ALLOW AMPLE TIME (10 WORKING DAYS) FOR CHECKING IN ADVANCE OF FIELD REQUIREMENTS. ALL SUBMITTALS TO BE COMPLETE AND CONTAIN ALL REQUIRED AND DETAILED INFORMATION. SHOP DRAWINGS WITH MULTIPLE PARTS SHALL BE SUBMITTED AS A PACKAGE.
  - D. IF SUBMITTALS DIFFER FROM THE CONTRACT DOCUMENT REQUIREMENTS, MAKE SPECIFIC MENTION OF SUCH DIFFERENCES IN A LETTER OF TRANSMITTAL, WITH REQUEST FOR SUBSTITUTION, TOGETHER WITH REASONS FOR SAME.
- E. SUBMISSIONS:
  - 1) PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP DRAWINGS IN AUTOCAD FORMAT, VERSION COMPATIBLE WITH OWNER. ALL CATALOG CUTS AND SUBMITTALS TO BE PROVIDED IN ELECTRONIC ?PDF? FORMAT THE ARCHITECT WILL FORWARD ALL SUBMISSIONS TO THE ENGINEER.
- F. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
  - 1) DUCTWORK LAYOUT AND SHEET METAL DESIGNS.
    - A. SHEETMETAL SHOP STANDARDS SHALL BE COMPILED DIRECTLY FROM THE ?SMACNA DUCT CONSTRUCTION STANDARDS- METAL AND FLEXIBLE? MANUAL. MODIFICATIONS FOR A SPECIFIC PROJECT, IF ANY, SHALL BE INDICATED DIRECTLY ON THE SMACNA TEMPLATES. MODIFIED SHOP STANDARDS NOT TAKEN DIRECTLY FROM THE SMACNA TEMPLATES WILL NOT BE ACCEPTED. ANY DEVIATIONS FROM SMACNA SHALL BE NOTED.
  - 2) AIR OUTLETS.
  - 3) AIR AND WATER BALANCE REPORT.
  - 4) CRAC AND ACCU UNITS.
  - 5) TERMINAL BOXES
  - 6) PIPING SHOP STANDARDS
  - 7) VALVES

- 8) PIPING LAYOUT: DETAIL, AT 3/8 INCH SCALE PIPING LAYOUT WITH FITTINGS, VALVES AND EQUIPMENT; USE SINGLE LINE FOR PIPE SIZES 3 INCHES AND SMALLER, AND DOUBLE LINE FOR PIPE SIZES 4 INCHES AND GREATER. FABRICATION OF PIPE ANCHORS, HANGERS, SUPPORTS FOR MULTIPLE PIPES, ALIGNMENT GUIDES, EXPANSION JOINTS AND LOOPS, AND ATTACHMENTS OF THE SAME TO THE BUILDING STRUCTURE. DETAIL LOCATION OF ANCHORS, ALIGNMENT GUIDES, AND EXPANSION JOINTS AND LOOPS SUBMIT ALL WELDING CERTIFICATES.
- 9) DAMPER AND VALVE ACTUATORS.
- 10) AUTOMATIC CONTROL SYSTEMS AND DEVICES.
- 11) SEQUENCE OF OPERATIONS
- G. COORDINATION DRAWINGS: PLANS, DRAWN TO SCALE INDICATING COORDINATION BETWEEN THE TRADES USING INPUT FROM INSTALLERS OF THE ITEMS INVOLVED:
  - 1) DUCT AND PIPING INSTALLATION INDICATING COORDINATION WITH GENERAL CONSTRUCTION, BUILDING COMPONENTS, AND OTHER BUILDING SERVICES. INDICATE LOCATIONS AND SIZES OF ALL OPENINGS IN FLOOR, WALLS AND ROOF THAT MAY BE REQUIRED.
  - 2) COORDINATION WITH SUSPENDED CEILING COMPONENTS, STRUCTURAL MEMBERS TO WHICH DUCT WILL BE ATTACHED, SIZE AND LOCATION OF INITIAL ACCESS MODULES FOR ACOUSTICAL TILE, PENETRATIONS OF SMOKE BARRIERS AND FIRE-RATED CONSTRUCTION, LIGHTING FIXTURES, AIR OUTLETS AND INLETS, SPEAKERS, SPRINKLERS, ACCESS PANELS, PERIMETER MOLDINGS SHALL BE PERFORMED.
- 4. AS-BUILTS AND EQUIPMENT OPERATION INSTRUCTIONS
  - A. PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP DRAWINGS IN AUTOCAD FORMAT, VERSION COMPATIBLE WITH OWNER. ALL CATALOG CUTS AND SUBMITTALS TO BE PROVIDED IN ELECTRONIC "PDF" FORMAT THE ARCHITECT WILL FORWARD ALL SUBMISSIONS TO THE ENGINEER.
  - B. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS, EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
  - C. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 INCH X 11 INCH FORMAT. THE CONTRACTOR SHALL GIVE ONE COPY OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
  - D. THE INSTRUCTIONS SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.
  - E. FINAL "AS-BUILT" DRAWINGS INDICATING AS INSTALLED CONDITIONS SHALL BE PROVIDED TO THE ARCHITECT AND ENGINEER AFTER COMPLETION OF THE INSTALLATION.
- 5. SUBSTITUTIONS
  - A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM THE SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE SUBSTITUTION. ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION WHY A SUBSTITUTION IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVIATIONS ARE TO BE IDENTIFIED ON A LINE BY LINE BASIS. IF THE SUBSTITUTE IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.
  - B. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS. CONTRACTOR SHALL REPLACE ANY EQUIPMENT THAT DOES NOT MEET THESE REQUIREMENTS AT HIS OWN EXPENSE. ANY MODIFICATIONS TO ASSOCIATED SYSTEMS OR ADDITIONAL COSTS ATTRIBUTED TO THIS SUBSTITUTION SHALL BE AT THIS CONTRACTOR'S EXPENSE.
  - C. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND SHALL SUPPLY AS AN ALTERNATE PRICE ANY SUBSTITUTIONS.
- 6. ACCESS DOORS IN GENERAL CONSTRUCTION
  - A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE (MINIMUM 18 INCH X 18 INCH) AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES, DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID.
- 7. SHEET METAL WORK
  - A. DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESSES, SEAM AND JOINT CONSTRUCTION, REINFORCEMENTS, AND HANGERS AND SUPPORTS, SHALL COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, LATEST EDITION" AND PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.
  - B. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE GALVANIZED SHEET STEEL.
  - C. DESCRIPTION OF DUCTWORK PRESSURE CLASS AND EQUIPMENT:
    - 1) 4 INCH AND GREATER DUCT CLASS: ALL SUPPLY DUCTWORK FROM DISCHARGE OF FANS, AIR HANDLING UNITS OR AC UNITS TO INLETS OF TERMINAL BOXES ON FLOOR, ALL OUTDOOR DUCTWORK AND ALL DUCTWORK RUNNING THROUGH UNCONDITIONED SPACES. SEAL CLASS "A", LEAKAGE CLASS 6 (RECTANGULAR METAL) OR CLASS 3 (ROUND).
    - 2) 4 INCH AND GREATER DUCT CLASS: ALL RETURN AIR DUCTWORK FROM SUCTION OF FANS, AIR HANDLING UNITS OR AC UNITS TO INLETS OF TERMINAL BOXES ON FLOOR. SEAL CLASS "A", LEAKAGE CLASS 6 (RECTANGULAR METAL) OR CLASS 3 (ROUND).
    - 3) 3 INCH DUCT CLASS: ALL SUCTION AND DISCHARGE OF KITCHEN EXHAUST AND OTHER EXHAUST DUCTWORK. SEAL CLASS "B", LEAKAGE CLASS 12 \*RECTANGULAR METAL OR CLASS 6 (ROUND).
    - 4) 2 INCH DUCT CLASS AND LESS: ALL OTHER LOW PRESSURE DUCTWORK. SEAL CLASS "C", LEAKAGE CLASS 24 (RECTANGULAR) OR CLASS 12 (ROUND).

- D. GENERAL FABRICATION REQUIREMENTS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE", LATEST EDITION, BASED ON INDICATED STATIC-PRESSURE CLASS UNLESS OTHERWISE INDICATED.
  - 1) THE FOLLOWING FITTING CONNECTIONS AND DUCT CONSTRUCTION GAUGES ARE NOT ACCEPTABLE
    - A. DRIVE SLIP [T-1, T-2] FITTING CONNECTIONS
    - B. 26 GAUGE DUCTWORK.
  - 2) TRANSVERSE JOINTS: SELECT JOINT TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, TRANSVERSE (GIRTH) JOINTS" FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT-SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE." FITTINGS AND/OR JOINTS OF TWO DIFFERENT GAUGES, CONNECTED JOINT RATING SHALL MEET MORE STRINGENT CONDITIONS.
  - 3) USE THE FOLLOWING SMACNA TRANSVERSE (GIRTH) JOINTS
    - A. DUCT CONSTRUCTION AS FOLLOWS FOR 2 INCH W.G. CLASS:
      - (1) UP TO 12 INCH WIDE USE T-6 OR T-7
      - (2) 13 INCH TO 28 INCH WIDE USE T-11 OR T12
      - (3) 29 INCH WIDE AND UP USE TDC OR TDF
    - B. DUCT CONSTRUCTION AS FOLLOWS FOR 3 INCH W.G. CLASS:
      - (1) UP TO 20 INCH WIDE USE T-6 OR T-7
      - (2) 21 INCH TO 24 INCH WIDE USE T-11 OR T12
      - (3) 25 INCH WIDE AND UP USE TDC OR TDF
    - C. DUCT CONSTRUCTION AS FOLLOWS FOR 4? W.G. CLASS:
      - (1) UP TO 12 INCH WIDE USE T-6 OR T-7
      - (2) 13 INCH TO 18 INCH WIDE USE T-11 OR T12
      - (3) 19 INCH WIDE AND UP USE TDC OR TDF
  - E. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL," EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.
    - 1) PROVIDE MANUAL VOLUME DAMPERS TO PROPERLY PROVIDE MANUAL BALANCING VOLUME DAMPERS AS REQUIRED TO PROPERLY BALANCE THE AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF BALANCING DAMPERS ARE NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUM STANDARDS SHALL GOVERN:
      - A. LOW PRESSURE: ALL SUPPLY AIR MAIN BRANCHES FROM TRUNK, EACH SPLIT, AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.
      - B. LOW PRESSURE: ALL EXHAUST AND RETURN BRANCHES FROM TRUNK, EACH SPLIT AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.
      - C. AS NOTED ON PLANS
  - F. FLEXIBLE DUCTS
    - 1) FLEXIBLE DUCT SHALL BE USED ONLY FOR FINAL CONNECTIONS TO OUTLETS, FIVE FOOT LENGTH MAXIMUM WITH GRADUAL BENDS OR OFFSETS. ELBOWS SHALL BE SUPPORTED BY A MANUFACTURER'S PACKAGED ELBOW SUPPORT (FLEXFLOW )
    - 2) TEAR RESISTANT, RUGGED FLEXIBLE DUCT DESIGNED FOR HIGH PRESSURE ENGINEERED HVAC SYSTEMS. UL181 CLASS 1 INSULATED AND NON-INSULATED AIR DUCT FABRICATED WITH A UNIQUE AND EXTREMELY TOUGH HEAVY COATED FIBERGLASS FABRIC. SOLID MECHANICAL UNION OF FABRIC AND CORROSION RESISTANT GALVANIZED STEEL. CREATE AN EXTRAORDINARY DURABLE SEAM. THERMALLY INSULATED TO AN R VALUE OF 4.2 AND OFFERED WITH A CHOICE OF FIRE RETARDANT POLYETHYLENE OR REINFORCED METALIZED PROTECTIVE VAPOR BARRIERS SUITABLE FOR UP TO 10 INCHES FOR SIZES UP TO 12 INCH DIAMETER, 6 INCHES FOR SIZES 14 TO 16 INCH DIAMETER, AND 4 INCHES FOR 18 TO 20 INCH DIAMETERS.
    - 3) FLEXIBLE DUCT CONNECTORS, CLAMPS SHALL BE STAINLESS STEEL BANDS WITH CADMIUM PLATED HEX SCREW TO TIGHTEN BAND WITH A WORM GEAR ACTION TO SUIT DUCT SIZE.
    - 4) MANUFACTURED BY FLEXMASTER NI 45, THERMAFLEX MODEL MK-E
  - G. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT.
    - 1) PROVIDE MINIMUM 20 INCH X 14 INCH ON MAIN DUCTS, AND 12 INCH X 6 INCH ON BRANCH DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS HUMIDIFIERS, DUCT SMOKE DETECTORS, AUTO DAMPERS, AND LOUVERS.
    - 2) ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO VENTLOCK NO. 100.
  - H. FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OZ PER SQUARE YD WITH SEWED AND CEWED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE WITH METAL COLLARS. ALLOW MINIMUM MOVEMENT OF 1 INCH.

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No.	Date	Description
ISSUE		
PROJECT		
<b>CITY OF QUINCY          POLICE HEADQUARTERS          SERVER ROOM          COOLING</b>		
DRAWING TITLE		
<b>MECHANICAL          SPECIFICATIONS          SHEET 1 OF 3</b>		
Drawn By	JCL	Drawing No.
Checked By	JCL	
Date	07/01/2011	
Scale	SHEET 1 OF 3	
Project No.	B110078-000	

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- I. TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS VANES WITH 2 INCH INSIDE RADIUS.
- J. FIRE DAMPERS: DYNAMIC; RATED AND LABELED ACCORDING TO UL 555 BY AN NRTL GALVANIZED STEEL CONSTRUCTION, CURTAIN TYPE WITH BLADES OUT OF THE AIRSTREAM (TYPE B), SPRING LOADED, EQUIPPED WITH FUSIBLE LINK, CONFORMING TO NFPA STANDARD 90A AND, SIMILAR TO POTOROFF OR RUSKIN, RATED AS REQUIRED. PROVIDE FIRE DAMPERS AS NOTED ON THE PLANS AND IN DUCTS AND OPENINGS IN SHAFTS, FLOORS, FIRE WALLS, FIRE-RESISTANCE PARTITIONS, FIRE RATED CEILINGS, EXIT CORRIDOR WALLS. PROVIDE ACCESS DOOR IN DUCT ADJACENT TO EACH FIRE DAMPER. SEE INSTALLATION ON DRAWING.
- K. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR DIMENSIONS.
- L. AUTOMATIC DAMPERS: COMPLETE WITH LINKAGE AND ELECTRIC OPERATOR. OPPOSED BLADE DAMPER OR GALVANIZED STEEL MIN. 4 INCH, MAX. 8 INCH WIDE WITH COMPRESSIBLE EDGE SEALS TO PREVENT LEAKAGE. FACTORY-ASSEMBLE STEEL LINKAGE AND SHAFT WITH NYLON OR OIL-IMPREGNATED BRONZE BEARINGS. MOTOR WITH SUFFICIENT POWER TO LIMIT LEAKAGE TO 10 CFM PER SQUARE FEET. LINKAGE TO WITHSTAND LOAD EQUAL TO TWICE MAXIMUM OPERATING FORCE WITHOUT DEFLECTION. DAMPER MOUNTED IN WELDED STEEL CHANNEL FRAME.
- M. WIRE MESH SCREEN (WMS): NO. 16 USSG, 3/4 SQUARE MESH, IN 1 INCH WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME.
- N. EXISTING DUCTWORK TO BE REUSED:
  - 1) THIS CONTRACTOR SHALL INSPECT, SEAL PER SMACNA REQUIREMENTS, LEAK TEST, AND INSULATE ALL EXISTING DUCTWORK TO BE REUSED. EXISTING DUCTWORK TO BE REUSED SHALL CONFORM TO SPECIFICATIONS FOR NEW DUCTWORK LISTED HEREIN. ALL REQUIRED WORK SHALL BE PART OF BID.
- O. EXPOSED DUCTWORK:
  - 1) WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS, INCLUDING PITTINGS, SEAM MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS. PROVIDE FINISHES WHICH WILL ALLOW PAINTING. PROVIDE FLAT TYPE SEAMS AND JOINTS FOR ALL EXPOSED DUCT CONSTRUCTION.
- 8. AIR OUTLETS
  - A. GENERAL:
    - 1) MARGIN TYPES, COLORS, FINISH AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING AND WALL DETAILS AND SPECIFICATIONS. FINISH SHALL MATCH COLOR SAMPLE AS APPROVED.
    - 2) FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL CONSTRUCTION AS INDICATED ON ARCHITECTURAL PLANS.
    - 3) EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL PLANS.
    - 4) PROVIDE MOUNTING AND BLOCKING
    - 5) MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS THROUGHOUT OPERATING RANGE.
    - 6) ALL REGISTERS AND DIFFUSERS SHALL BE PROVIDED WITH OPPOSED BLADE VOLUME DAMPERS. DAMPER OPERATING LEVERS SHALL BE ACCESSIBLE AT THE FACE OF AIR OUTLETS.
    - 7) PROVIDE SHEETMETAL BLANK OFF AS REQUIRED FOR 1 WAY, 2 WAY OR 3 WAY DIFFUSERS, OR DIFFUSERS WITH PATTERNS IDENTIFIED ON DRAWINGS.
    - 8) PROVIDE BLANKING FOR PROPER COVERAGE AND BLOW WITHOUT PRODUCING OBJECTIONABLE NOISE OR AIR MOTION AT OCCUPIED LEVEL.
    - 9) MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      - A. TITUS.
      - B. TUTTLE AND BAILEY
      - C. PRICE
  - B. SQUARE DIFFUSERS: DIFFUSERS SHALL BE STEEL CONSTRUCTION PAINTED WHITE SUITABLE FOR THE TYPE OF CEILING.
- 9. NOISE CONTROL
  - A. ALL ROOM NC LEVELS SHALL BE 35 OR LESS.
  - B. PROVIDE SOUNDLINING FOR THE FOLLOWING DUCTWORK:
    - 1) ALL DUCTWORK WITHIN MECHANICAL ROOMS AND NOT LESS THAN 25 FEET ON EACH SIDE OF ALL FANS AND AC UNITS.
    - 2) DOWNSTREAM OF ALL TERMINAL BOXES (CV, VAV FOR A MINIMUM OF 15 FEET).
    - 3) ALSO WHERE NOTED ON A DRAWING.
  - C. SOUNDLINING IN DUCTWORK: FIBROUS GLASS, MINIMUM 3 LB DENSITY, 1 INCH THICKNESS, MAXIMUM 0.25 K FACTOR AT 75 DEG F MEAN TEMPERATURE WITH ACRYLIC COATED FINISH FACTORY APPLIED EDGE COATING AND STENCILED IN ACCORDANCE WITH NFPA 90. FLAMESPREAD SHALL BE A MAXIMUM OF 25. LINING SHALL NOT SUPPORT MICROBIAL GROWTH AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1071 AND ASTM G21/G22. SIMILAR TO MANVILLE PERMACOTE LINACOUSTIC.
  - D. ALL SOUNDLINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.
- 10. TESTING AND BALANCING
  - A. ALL AIR AND WATER BALANCING SHALL BE BY AN INDEPENDENT CONTRACTOR NOT AFFILIATED WITH THE MECHANICAL CONTRACTOR AND IN ACCORDANCE WITH LOCAL STANDARDS. CONTRACTOR SHALL UTILIZE BASE BUILDING BALANCING CONTRACTOR OR APPROVED EQUAL, CONTACT BUILDING MANAGEMENT.
  - B. CONTRACTOR TO BALANCE ENTIRE SYSTEM TO AIR AND/OR WATER QUANTITIES AS SHOWN ON ALL RELATED DRAWINGS FOR THIS JOB, AND AS DESCRIBED HEREIN. BALANCING MUST BE DONE IN THE PRESENCE OF A BUILDING ENGINEER.
  - C. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS AND BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. AIR SUPPLY OUTLETS TO BE BALANCED TO A UNIFORM SUPPLY ACROSS ENTIRE FACE. ADJUSTMENT OF TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR ADJUSTMENT ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE GENERATION IN THE TERMINAL AREAS AND UTILIZE MINIMUM FAN ENERGY.
  - D. WATER BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF BALANCING VALVES AT PUMPS FOR PROPER FLOW. ADJUST FLOW THROUGH COILS AS REQUIRED.
  - E. FANS, AIR HANDLING UNITS, PUMPS, CHILLERS, HEAT EXCHANGERS AND COILS SHALL BE BALANCED TO WITHIN +5% OF THEIR DESIGN CAPACITIES. ALL OTHER AIR AND WATER QUANTITIES SHALL BE BALANCED TO WITHIN +10% OF THEIR DESIGN QUANTITIES.

- F. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL REBALANCE ANY EXISTING PORTIONS OF AIR DISTRIBUTION SYSTEM AND WATER DISTRIBUTION SYSTEM AFFECTED BY THE RENOVATION AND ALSO BALANCE ALL NEW WORK.
- G. IF DISCREPANCIES EXIST IN THE REPORT THAT REQUIRE FIELD VERIFICATION, THE TESTING AND BALANCING COMPANY IN THE PRESENCE OF THE ENGINEER SHALL VISIT THE JOBSITE FOR FIELD VERIFICATION OF THE REPORT.
- H. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES, FLOW METERS, SHEAVES, AND BELTS REQUIRED TO BALANCE SYSTEMS.
- I. BALANCING REPORT SHALL BE PROVIDED ON NEBB OR AABC-TYPE FORMS.
- J. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY A CERTIFIED NEBB OR AABC TECHNICIAN.
- K. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY ONE OF THE FOLLOWING INDEPENDENT FIRMS SPECIALIZING IN TESTING AND BALANCING:
  - 1) LEONHARDT
  - 2) E.L. BARRETT
  - 3) J.F. COFFEY
- L. THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO BE DEMONSTRATED BY THE CONTRACTOR.
- 11. INSULATION - GENERAL REQUIREMENTS
  - A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.
  - B. DEFINITIONS:
    - 1) EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.
    - 2) CONCEALED: INDOOR DUCTS, PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.
    - 3) OUTDOOR: DUCTS, PIPING OR EQUIPMENT WHICH IS EXPOSED TO THE WEATHER.
- 12. DUCTWORK INSULATION
  - A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.
 

INSULATION SCHEDULE - DUCTWORK					
SERVICE	LOCATION	THICKNESS	MATERIAL	FINISH	
SUPPLY	CONCEALED	1-1/2 INCH	D-1	VAPORSEAL	
  - B. REINSULATE ALL DUCTWORK AND PIPING WHICH IS EXISTING AND DAMAGED DURING CONSTRUCTION OR SHOWN OR REQUIRED TO BE RELOCATED. INSULATE WITH SAME MATERIAL AND THICKNESS.
  - C. NON-INSULATED DUCTWORK:
    - 1) WHERE SOUNDLINING IS OF MINIMUM THICKNESS SPECIFIED FOR INSULATION.
    - 2) AIR CONDITIONING RETURN AIR DUCTWORK EXPOSED IN AIR CONDITIONED SPACES AND INSTALLED IN HUNG CEILINGS WHERE SPACE IMMEDIATELY ABOVE AND BELOW ARE BOTH AIR CONDITIONED.
  - D. MATERIAL:
    - 1) TYPE D-1: MINIMUM 1-LB DENSITY FIBERGLASS BLANKET, MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FOIL-SKRIM-KRAFT FACING SIMILAR TO MANVILLE MICROLITE.
  - E. INSTALLATION:
    - 1) FIBERGLASS BLANKET: 2 INCH LAP STRIPS AT ALL SEAMS. SECURE BOTTOM OF ALL DUCTS OVER 24 INCH WIDE WITH MIN. 2 ROWS OF WELD PINS 12 INCH ON CENTER. SECURE ALL SEAMS WITH FOIL VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE.
- 13. PIPING INSULATION
  - A. INSULATE ALL PIPING IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.
 

INSULATION SCHEDULE - PIPING					
SERVICE	SIZE	THICKNESS	MATERIAL	FINISH	
REFRIGERANT LIQUID & SUCTION LINES	ALL	1 INCH	P-6	VAPORSEAL	
COLD WATER MAKEUP, COLD CONDENSATE	ALL	1 INCH	P-1	VAPORSEAL	
  - B. MATERIAL:
    - 1) TYPE P-1: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING. ALL SERVICE JACKET. SIMILAR TO OWENS-CORNING 650 ASJ.
  - C. FINISH:
    - 1) TYPE F-1: FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE ZESTRON.
  - D. INSTALLATION:
    - 1) BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.
    - 2) ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 INCH LAP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED. STAPLES NOT PERMITTED.
    - 3) ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION.
    - 4) INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.
  - E. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL FANS AND DUCTWORK (REFER TO DUCTWORK SECTION FOR SPECIFICATIONS).
- 14. PIPING - GENERAL REQUIREMENTS
  - A. COMPLETE WITH: PIPE, FITTINGS, VALVES, STRAINERS, MOTORIZED VALVE OPERATORS, STRAINERS, HANGERS, SUPPORTS, GUIDE, SLEEVES, AND ACCESSORIES.
  - B. STEEL GROOVE PIPING MAY BE USED IN LIEU OF COPPER PIPING. MANUFACTURES MUST BE VICTAULIC OR GRINNELL.

- C. COPPER TUBE BRAZING
  - 1) ALL BRAZING SHALL BE DONE IN ACCORDANCE WITH ALL CODES APPLICABLE TO THE PARTICULAR SERVICE. BRAZING FILLER METALS: AWS A5.8, BCUF SERIES, COPPER-PHOSPHORUS ALLOYS FOR JOINING COPPER WITH COPPER; OR BAG-1, SILVER ALLOY FOR JOINING COPPER WITH BRONZE OR STEEL.
  - 2) QUALIFY PROCESS AND OPERATORS IN ACCORDANCE WITH ASME BOILER AND PRESSURE VESSEL CODE, SECTION IX, WELDING AND BRAZING QUALIFICATIONS?
  - 3) BRAZERS SHALL BE QUALIFIED FOR ALL REQUIRED TUBE SIZES, MATERIAL, WALL THICKNESS, AND POSITION IN ACCORDANCE WITH THE AMERICAN SOCIETY OF MECHANICAL ENGINEERING (ASME), SECTION IX, BOILER AND PRESSURE VESSEL CODE.
    - A. COPIES OF THE CERTIFIED BRAZER QUALIFICATION REPORTS SHALL BE MAINTAINED BY THE RESPONSIBLE BRAZING AGENCY AND THE COMPANY PERFORMING THE BRAZING, AND SHALL BE SUBMITTED TO THE OWNER AND/OR ENGINEER UPON REQUEST.
    - B. ALL DEFECTIVE BRAZEMENTS SHALL BE CHIPPED OUT AND REPAIRED AT NO COST TO THE OWNER, BASED ON PROCEDURE TO BE SPECIFIED AT THE TIME.
- D. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.
  - 1) REFRIGERANT PIPING
    - A. TEST REFRIGERANT PIPING FOR TIGHTNESS AND LEAKS UNDER PRESSURE OR VACUUM. THE DURATION OF EACH TEST SHALL BE TWENTY-FOUR (24) HOURS.
    - B. TEST JOINTS IN ACCORDANCE WITH ASHRAE 15-LATEST EDITION. THERE SHALL BE NO OBSERVABLE LEAKS OR CHANGES IN PRESSURE. IF EITHER IS OBSERVED, SEAL LEAKS, AND REPEAT TEST PROCEDURES.
- E. EXPANSION COMPENSATION:
  - 1) ALL PIPING SHALL BE INSTALLED TO COMPENSATE FOR EXPANSION TO PROTECT THE BUILDING, EQUIPMENT AND PIPING SYSTEMS. PROVIDE ALL GUIDES, ANCHORS, EXPANSION LOOPS, SUPPLEMENTAL STEEL AND APPROVED TYPE EXPANSION JOINTS AS INDICATED OR REQUIRED FOR CONTROL OF EXPANSION.
- F. FLUSHING AND CLEANING AND TREATMENT:
  - 1) AFTER COMPLETION OF HYDROSTATIC TESTS AND EMPTYING, PROVIDE LABOR FOR INITIAL FLUSHING, CLEANING, AND PASSIVATING IN ACCORDANCE WITH THE OWNER'S WATER TREATMENT SPECIFICATION. THE HVAC CONTRACTOR SHALL HIRE THE SERVICES OF THE BASE BUILDING WATER TREATMENT CONTRACTOR AND PROVIDE ALL LABOR. COORDINATE WITH THE OWNER'S WATER TREATMENT COMPANY AND PROVIDE ALL SPECIFICATION REQUIREMENTS AND REQUIRED LABOR. COORDINATE ALL REQUIREMENTS WITH BASE BUILDING MANAGEMENT FOR BASE BUILDING VENDOR.
    - A. CLOSED SYSTEM TREATMENT: COORDINATE WITH BUILDING OWNER AS TO THE REQUIREMENTS FOR TYING INTO THE BASE BUILDING SYSTEMS PRIOR TO SUBMITTING BID.
- G. PROVIDE DIELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE TO BE JOINED.
- H. PIPE SUPPORTS:
  - 1) PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
  - 2) HORIZONTAL PIPING TO BE SUPPORTED BY FORGED STEEL ADJUSTABLE CLEVIS TYPE HANGER. MAXIMUM SPACING AS FOLLOWS:
    - A. COPPER 1 INCH AND SMALLER: 5 FEET.
    - B. COPPER 1-1/2 IN TO 2-1/2 INCH: 8 FEET.
    - C. COPPER 3 INCH: 10 FEET.
    - D. PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION, BRANCH PIPING AND RUNOUTS OVER 5 FEET AND CONCENTRATE LOADS DUE TO VALVES, STRAINERS AND OTHER SIMILAR ITEMS.
  - 3) ROD SIZE
    - A. PIPE 2 IN AND SMALLER: 3/8 IN
    - B. PIPE 2-1/2 IN TO 3 IN: 1/2 IN
    - C. PIPE 4 TO 8 IN: 3/4 IN
    - D. PIPE 10 IN TO 12 IN: 7/8 IN
- I. CONDENSATE DRAIN PIPING
  - 1) PIPE: ASTM B88, HARD DRAWN COPPER TUBING TYPE "L".
  - 2) FITTINGS: SOLDERED JOINT FITTINGS, 95/5 SOLDER.
- 15. REFRIGERANT SYSTEMS
  - A. PROVIDE ALL REFRIGERANT PIPING REQUIRED FOR A COMPLETE REFRIGERATION SYSTEM, WITH ALL VALVES, FITTINGS AND SPECIALTIES NECESSARY FOR SATISFACTORY OPERATION IN ACCORDANCE WITH ASHRAE STANDARD 15-LATEST EDITION AND ALL AUTHORITIES HAVING JURISDICTION. REFRIGERATION SYSTEM SHALL INCLUDE ALL REQUIRED ITEMS FOR CHARGING, DRAINING AND PURGING THE SYSTEM.
  - B. REFRIGERANT PIPING SHALL BE HARD COOPER, TYPE L OR ACR, ASTM B88 OR ASTM B 280, BRAZED.
  - C. JOINTS IN REFRIGERATION PIPING SHALL BE BRAZED.
  - D. REFRIGERANT PIPING SHALL BE OF THE SIZE AND NUMBER OF PIPES RECOMMENDED BY THE MANUFACTURER AND AS APPROVED BY THE ENGINEER.
  - E. HORIZONTAL PIPING OF THE COMPRESSOR SUCTION AND DISCHARGE LINES AND THE CONDENSER DISCHARGE LINES SHALL BE PITCHED A MINIMUM OF 1/4 INCH IN 10 FEET, IN THE DIRECTION OF REFRIGERANT FLOW. EACH SUCTION GAS VERTICAL RISER SHALL BE TRAPPED AT ITS EVAPORATOR WITH A TRAP AS RECOMMENDED BY THE COMPRESSOR MANUFACTURER.
  - F. INSTALL REFRIGERANT PIPING TO PREVENT EXCESSIVE OIL FROM BEING TRAPPED IN THE SYSTEM. ANY ADDITIONAL RISERS OR EQUALIZER LINES REQUIRED BY THE MANUFACTURER OF EQUIPMENT FOR THE PROPER SYSTEM OPERATION SHALL BE INSTALLED AS PART OF THIS CONTRACT. PROVIDE A FULLY PIPED OIL SEPARATOR FOR EACH REFRIGERANT SYSTEM AS PER MANUFACTURER'S RECOMMENDATIONS.
  - G. VALVES SHALL BE DESIGNED FOR REFRIGERANT SERVICE. SHUTOFF VALVES SHALL BE BRASS PACKLESS TYPE. UNIONS, FLANGED VALVES OR ETC. FOR MAKING REPAIRS: PIPING SHALL BE RUN IN A SINGLE LAYER, WITH EACH LINE ISOLATED FROM ANOTHER TO PREVENT RUBBING. PROVISION SHALL BE MADE FOR EXPANSION AND CONTRACTION OF PIPING. ALL PIPING PASSING THROUGH WALLS, PARTITIONS, ETC., SHALL BE FURNISHED WITH SLEEVES AS REQUIRED.
  - H. REFRIGERANT PIPING PASSING THROUGH RATED FLOORS OR DEMISING WALLS SHALL BE ENCLOSED IN A RIGID AND GAS-TIGHT CONTINUOUS FIRE-RESISTING PIPE DUCT OR SHAFT VENTED TO THE OUTSIDE, IN ACCORDANCE WITH ASHRAE STANDARD 15-LATEST EDITION. PIPE CONDUIT SHALL BE COPPER TUBE TYPE L WITH SOLDERED FITTINGS.

**AKF**

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3	3/6/2012	ISSUED FOR PRICING
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No.	Date	Description

PROJECT

**CITY OF QUINCY  
POLICE HEADQUARTERS  
SERVER ROOM  
COOLING**

DRAWING TITLE

**MECHANICAL  
SPECIFICATIONS  
SHEET 2 OF 3**

Drawn By	JCL	Drawing No.	<b>M-3.1</b>
Checked By	JCL		
Date	07/01/2011		
Scale	SHEET 1 OF 3		
Project No.	B110078-000		

16. ELECTRICAL WORK

A. GENERAL:

- 1) ELECTRICAL POWER WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING SHALL BE PROVIDED BY THE HVAC CONTRACTOR. CONTROL WIRING SHALL BE DEFINED AS ANY WIRING 120V AND BELOW INSTALLED FOR PURPOSES OTHER THAN PROVIDING PRIMARY ELECTRICAL POWER TO EQUIPMENT.
- 2) MOTOR STARTERS SHALL BE FURNISHED BY THE HVAC CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- 3) DUCT MOUNTED SMOKE DETECTORS, WHERE REQUIRED, SHALL BE PROVIDED BY AND WIRED BY THE ELECTRICAL CONTRACTOR, AND MOUNTED BY THE HVAC CONTRACTOR.
  - A. THIS CONTRACTOR SHALL INSTALL THE SMOKE DETECTOR SAMPLING TUBES IN THE DUCT AS COORDINATED IN THE FIELD.
  - B. THIS CONTRACTOR SHALL ASSIST THE ELECTRICAL CONTRACTOR IN TESTING THE DUCT-MOUNTED SMOKE DETECTION SYSTEM.
- 4) ALL ELECTRICAL CONTROL WIRING SHALL COMPLY WITH LOCAL ELECTRICAL CODE, ALL AUTHORITIES HAVING JURISDICTION AND THE PROJECT ELECTRICAL SPECIFICATIONS.
- 5) MECHANICAL CONTRACTOR TO OBTAIN QUANTITY OF CONTROLLERS REQUIRED AND COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL OPERATING REQUIREMENTS, INTERLOCKS AND CONNECTIONS FOR STARTERS.
- 6) THE MECHANICAL CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL POINT-TO-POINT COMPLETELY COORDINATED WIRING DIAGRAMS AND INDICATE ALL SOURCE POWER REQUIREMENTS AND ALL FIELD WIRING TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR.
- 7) WHERE EXISTING STARTERS ARE TO BE REUSED, THIS CONTRACTOR SHALL MAINTAIN ALL EXISTING CONTROL CONNECTIONS. WHERE NEW STARTERS ARE TO BE PROVIDED TO REPLACE EXISTING, THIS CONTRACTOR SHALL SURVEY THE EXISTING CONTROL CONNECTIONS AND PREPARE AN EXISTING CONTROL WIRING DIAGRAM PRIOR TO DEMOLITION FOR SUBMITTAL TO THE ENGINEER. THE NEW STARTERS SHALL BE PROVIDED WITH THE NECESSARY CONTACTS AND RELAYS REQUIRED TO RECONNECT THE EXISTING CONTROLS. PROVIDE ALL REQUIRED CONTACTS FOR START/STOP AND FIRE ALARM.

17. EQUIPMENT, DUCT, AND PIPING TAGS AND LABELS

A. METAL LABELS FOR EQUIPMENT:

- 1) INSTALL LABELS ON EACH MAJOR ITEM OF MECHANICAL EQUIPMENT. MATERIAL AND THICKNESS: BRASS, 0.032-INCH (0.8-MM) MINIMUM THICKNESS, AND HAVING PREDRILLED OR STAMPED HOLES FOR ATTACHMENT HARDWARE.
- 2) MINIMUM LABEL SIZE: LENGTH AND WIDTH VARY FOR REQUIRED LABEL CONTENT, BUT NOT LESS THAN 2-1/2 BY 3/4 INCH (64 BY 19 MM).
- 3) MINIMUM LETTER SIZE: 1/4 INCH (6.4 MM) FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 24 INCHES (600 MM), 1/2 INCH (13 MM) FOR VIEWING DISTANCES UP TO 72 INCHES (1830 MM), AND PROPORTIONATELY LARGER LETTERING FOR GREATER VIEWING DISTANCES. INCLUDE SECONDARY LETTERING TWO-THIRDS TO THREE-FOURTHS THE SIZE OF PRINCIPAL LETTERING.
- 4) FASTENERS: STAINLESS-STEEL RIVETS OR SELF-TAPPING SCREWS.
- 5) ADHESIVE: CONTACT-TYPE PERMANENT ADHESIVE, COMPATIBLE WITH LABEL AND WITH SUBSTRATE.

B. LABEL CONTENT: INCLUDE EQUIPMENT'S DRAWING DESIGNATION OR UNIQUE EQUIPMENT NUMBER, DRAWING NUMBERS WHERE EQUIPMENT IS INDICATED (PLANS, DETAILS, AND SCHEDULES), PLUS THE SPECIFICATION SECTION NUMBER AND TITLE WHERE EQUIPMENT IS SPECIFIED.

C. PIPE AND DUCT LABELS

- 1) PIPE AND DUCT LABELS SHALL BE INSTALLED AT MAXIMUM INTERVALS OF 50 FEET ON STRAIGHT RUNS AND 25 FEET IN AREAS OF CONGESTED PIPING AND EQUIPMENT.
- 2) GENERAL REQUIREMENTS FOR MANUFACTURED PIPE LABELS: PREPRINTED, COLOR-CODED, WITH LETTERING INDICATING SERVICE, AND SHOWING FLOW DIRECTION.
- 3) SELF-ADHESIVE PIPE AND DUCT LABELS: PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT-ADHESIVE BACKING.
- 4) PIPE AND DUCT LABEL CONTENTS: INCLUDE IDENTIFICATION OF PIPING SERVICE USING SAME DESIGNATIONS OR ABBREVIATIONS AS USED ON DRAWINGS, PIPE SIZE, AND AN ARROW INDICATING FLOW DIRECTION.
  - A. FLOW-DIRECTION ARROWS: INTEGRAL WITH PIPING OR DUCT SYSTEM SERVICE LETTERING TO ACCOMMODATE BOTH DIRECTIONS, OR AS SEPARATE UNIT ON EACH PIPE OR DUCT LABEL TO INDICATE FLOW DIRECTION.
  - B. LETTERING SIZE: AT LEAST 1-1/2 INCHES (38 MM) HIGH.

D. VALVE TAGS

- 1) INSTALL TAGS ON VALVES AND CONTROL DEVICES IN PIPING SYSTEMS, EXCEPT CHECK VALVES; VALVES WITHIN FACTORY-FABRICATED EQUIPMENT UNITS; SHUTOFF VALVES; SAUCETS; CONVENIENCE VALVES; WATERING HOSE CONNECTIONS; AND HVAC TERMINAL DEVICES AND SIMILAR ROUGHING-IN CONNECTIONS OF END-USE FIXTURES AND UNITS. LIST TAGGED VALVES IN A VALVE SCHEDULE.
- 2) VALVE TAGS: STAMPED OR ENGRAVED WITH 1/4-INCH (6.4-MM) LETTERS FOR PIPING SYSTEM ABBREVIATION AND 1/2-INCH (13-MM) NUMBERS.
  - A. TAG MATERIAL: BRASS, 0.032-INCH (0.8-MM) MINIMUM THICKNESS, AND HAVING PREDRILLED OR STAMPED HOLES FOR ATTACHMENT HARDWARE.
  - B. FASTENERS: BRASS WIRE-LINK OR BEADED CHAIN; OR S-HOOK

E. VALVE SCHEDULES

- 1) FOR EACH PIPING SYSTEM, ON 8-1/2-BY-11-INCH BOND PAPER, TABULATE VALVE NUMBER, PIPING SYSTEM, SYSTEM ABBREVIATION (AS SHOWN ON VALVE TAG), LOCATION OF VALVE (ROOM OR SPACE), NORMAL OPERATING POSITION (OPEN, CLOSED, OR MODULATING), AND VARIATIONS FOR IDENTIFICATION. MARK VALVES FOR EMERGENCY SHUTOFF AND SIMILAR SPECIAL USES. VALVE TAG SCHEDULE SHALL BE INCLUDED IN OPERATION AND MAINTENANCE DATA.

18. EQUIPMENT

- A. PROVIDE ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS.
- B. INSTALL EQUIPMENT IN ACCORDANCE WITH APPROVED SHOP DRAWINGS, MANUFACTURERS INSTRUCTIONS AND ALL CODES AND REGULATIONS WHICH APPLY.
- C. PROVIDE EQUIPMENT SUPPORTS AND/OR MOUNTINGS AS INDICATED ON THE DRAWING, IN VIBRATION SPECIFICATION AND AS FOLLOWS:
  - 1) CEILING MOUNTED EQUIPMENT - PROVIDE SUPPORTS WITH APPROVED SUITABLE ANCHORS SUSPENDED DIRECTLY FROM BUILDING STEEL STRUCTURE.
  - 2) PROVIDE SUPPLEMENTAL STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE EQUIPMENT LOAD.
- D. REUSE OF EXISTING EQUIPMENT:
  - 1) EXISTING SYSTEM SURVEY
    - A. PRIOR TO START OF CONSTRUCTION, CONTRACTOR TO PERFORM EXISTING CONDITIONS SURVEY OF SYSTEMS TO BE REUSED AND PREPARE COMPLETE REPORT INDICATING PHYSICAL CONDITION OF UNITS AND ACCESSORIES AND NOTE ANY REPAIRS REQUIRED BEYOND ITEMS INCLUDED IN DESIGN DOCUMENTS TO RESTORE EQUIPMENT TO A FULLY OPERATIONAL CONDITION. REPORT TO BE SUBMITTED TO ENGINEER

E. RIGGING

- 1) THIS CONTRACTOR SHALL PROVIDE ALL REQUIRED RIGGING, HOISTING AND BRACING TO INSTALL THE EQUIPMENT AS INDICATED ON THE PLANS. THIS WORK SHALL BE PERFORMED BY AN INSURED CERTIFIED LICENSED RIGGING COMPANY THAT IS EXPERIENCED IN RIGGING EQUIPMENT OF THE TYPE INDICATED FOR THE AREAS SHOWN ON THE CONSTRUCTION DOCUMENTS. THIS CONTRACTOR SHALL SUBMIT RIGGING PLANS FOR APPROVAL PRIOR TO PROCEEDING WITH THE WORK.
  - 2) ALL PERMITS REQUIRED FROM THE AUTHORITIES AND AGENCIES INVOLVED TO PERFORM THE RIGGING ARE THE RESPONSIBILITIES OF THIS CONTRACTOR.
  - 3) ALL STRUCTURAL SUPPORTS, MODIFICATIONS OR ADDITIONS ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO PROCEEDING WITH THE WORK. ALL SUPPLEMENTAL STRUCTURAL SUPPORTS, ELEVATOR CHARGES /MODIFICATIONS, BRACING AND PROTECTION REQUIRED FOR THE RIG IS THE RESPONSIBILITY OF THIS CONTRACTOR.
  - 4) THE RIGGING CONTRACTOR SHALL HIRE AND PAY FOR ALL CHARGES AND SERVICES OF THE BUILDING ELEVATOR CONTRACTOR FOR THE RIGGING OF THE EQUIPMENT.
- F. VARIABLE AIR VOLUME (VAV) TERMINAL UNITS:
- 1) VAV BOXES SHALL BE SINGLE DUCT, PRESSURE INDEPENDENT, ELECTRONIC DDC BOXES, BOXES SHALL BE PROVIDED WITH ALL SENSORS, CONTROLS, TRANSFORMERS, HOT WATER REHEAT COILS, DAMPERS AND ACTUATORS AS REQUIRED.
  - 2) SUBMIT DISCHARGE AND RADIATED SOUND POWER LEVELS. LEVELS NOT TO EXCEED SPECIFIED SPACE NC LEVELS.
  - 3) UNITS ARE TO HAVE NORMALLY OPEN DAMPERS (ON A NO-FLOW CONDITION) WITH A MINIMUM AIR QUANTITY SETTING OF 20% OF THE DESIGN AIR QUANTITY. MINIMUM/MAXIMUM SETTING SHALL BE USER ADJUSTABLE.
  - 4) CONTROLLER, ACTUATOR SHALL BE SHIPPED TO TERMINAL UNIT MANUFACTURER FOR MOUNTING. ALL CONTROLS SHALL BE MOUNTED IN A SINGLE ENCLOSURE. DDC CONTROLS SHALL BE FIELD CALIBRATED BY ATC CONTRACTOR. SIMILAR TO ANEMOSTAT MODEL EZTS.
  - 5) HOT WATER REHEAT COILS SHALL BE ENCLOSED IN A MINIMUM 20-GAUGE GALVANIZED STEEL CASING WITH SLIP AND DRIVE CONSTRUCTION FOR ATTACHMENT TO METAL DUCTWORK. COILS SHALL BE FACTORY INSTALLED ON THE TERMINAL DISCHARGE. FINS SHALL BE RIPPLED AND CORRUGATED HEAVY GAUGE ALUMINUM, MECHANICALLY BONDED TO TUBES. TUBES SHALL BE COPPER WITH MINIMUM WALL THICKNESS OF 0.016-INCH WITH MALE SOLDER HEADER CONNECTIONS. COILS SHALL BE LEAK TESTED TO 300 PSI WITH MINIMUM BURST PRESSURE OF 1800 PSI AT AMBIENT TEMPERATURE. NUMBER OF COIL ROWS AND CIRCUITS SHALL BE SELECTED TO PROVIDE PERFORMANCE AS REQUIRED PER THE PLANS. COIL PERFORMANCE DATA SHALL BE BASED ON TESTS RUN IN ACCORDANCE WITH ARI STANDARD 410.
  - 6) PROVIDE WITH ACCESS PANEL UPSTREAM OF REHEAT COIL. ACCESS PANEL SHALL BE GASKETED AND SHALL HAVE CAM LATCHES FOR ACCESS.
  - 7) CASING SHALL BE MINIMUM 22-GAUGE GALVANIZED STEEL. INTERNAL LINING SHALL BE UL 181 AND NFPA 90A COMPLIANT. BOXES SHALL BE LINED WITH 1 INCH FIBER FREE INSULATION WITH 1-1/2 LB DENSITY. EXPOSED FIBERGLASS IS NOT ACCEPTABLE. INSULATION SHALL BE MECHANICALLY FASTENED TO THE UNIT CASING.

G. AIR COOLED AIR CONDITIONING UNIT: (WALL HUNG)

- 1) EVAPORATOR CABINET AND FRAME CONSTRUCTION THE CABINET AND CHASSIS SHALL BE CONSTRUCTED OF HEAVY GAUGE, PAINTED FURNITURE STEEL. THE CABINET SHALL BE DESIGNED FOR EASY INSTALLATION AND SERVICE ACCESS FROM THE FRONT ONLY.
- 2) AIR DISTRIBUTION THE AIR DISTRIBUTION SYSTEM SHALL BE CONSTRUCTED WITH A QUIET, DIRECT-DRIVE FAN ASSEMBLY EQUIPPED WITH MULTIPLE DOUBLE-INLET BLOWERS, SELF-ALIGNING SLEEVE BEARINGS AND LIFETIME LUBRICATION. FAN MOTOR(S) SHALL BE PERMANENT-SPLIT CAPACITOR, HIGH EFFICIENCY TYPE, EQUIPPED WITH TWO SPEEDS FOR AIR FLOW MODULATION. DEHUMIDIFICATION SHALL UTILIZE THE LOWER FAN SPEED. AIR FILTER SHALL BE A CLEANABLE POLYPROPYLENE MONOFILAMENT TYPE OVER EXPANDED ALUMINUM WITH ALUMINUM FRAME. IT SHALL BE EASILY REMOVABLE FROM THE FRONT OF THE SYSTEM BY MEANS OF QUATER-TURN FASTENERS AND SHALL NOT REQUIRE SYSTEM SHUTDOWN FOR SERVICE.
- 3) MICROPROCESSOR CONTROL THE CONTROL SYSTEM SHALL BE MICROPROCESSOR-BASED, FACTORY-WIRED INTO THE SYSTEM AND TESTED PRIOR TO SHIPMENT. THE WALL-MOUNTED CONTROL ENCLOSURE SHALL INCLUDE A 2-LINE BY 16-CHARACTER LCD PROVIDING CONTINUOUS DISPLAY OF OPERATING STATUS AND ALARM CONDITION. AN 8-KEY MEMBRANE KEYPAD FOR SETPOINT/ PROGRAM CONTROL, FAN SPEED SELECTION AND UNIT ON/OFF SHALL BE LOCATED BELOW THE DISPLAY. THE CONTROL DISPLAY SHALL BE FIELD-WIRED TO THE CONTROL BOARD USING 4-CONDUCTOR FIELD-SUPPLIED THERMOSTAT WIRE. TEMPERATURE AND HUMIDITY SENSORS SHALL BE LOCATED IN THE WALL BOX, WHICH SHALL BE CAPABLE OF BEING LOCATED UP TO 300 FT (91.4M) FROM THE EVAPORATOR UNIT.
- 4) MONITORING THE LCD SHALL PROVIDE ON/OFF INDICATION, OPERATING MODE INDICATION (COOLING, HEATING, HUMIDIFYING, DEHUMIDIFYING), FAN SPEED INDICATION AND CURRENT DAY, TIME, TEMPERATURE AND HUMIDITY (IF APPLICABLE) INDICATION. THE MONITORING SYSTEM SHALL BE CAPABLE OF RELAYING UNIT OPERATING PARAMETERS AND ALARMS TO THE LIEBERT SITESCAN MONITORING SYSTEM.
- 5) CONTROL SETPOINT PARAMETERS
  - A) TEMPERATURE SETPOINT: 65-85°F (18 TO 29°C)
  - B) TEMPERATURE SENSITIVITY: 1 TO 9.9°F (1 TO 5°C)
  - C) HUMIDITY SETPOINT: 20-80% RH
  - D) HUMIDITY SENSITIVITY: 1 TO 30% RH
 THE MICROPROCESSOR CAN BE SET WITHIN THESE RANGES; HOWEVER, THE UNIT MAY NOT BE ABLE TO CONTROL TO EXTREME COMBINATIONS OF TEMPERATURE AND HUMIDITY.
- 6) COMPRESSOR SHORT-CYCLE CONTROL THE CONTROL SYSTEM SHALL PREVENT COMPRESSOR SHORT-CYCLING BY A 3-MINUTE TIMER FROM COMPRESSOR STOP TO THE NEXT START.
- 7) COMMON ALARM AND REMOTE ON/OFF A COMMON ALARM RELAY SHALL PROVIDE A CONTACT CLOSURE TO A REMOTE ALARM DEVICE. TWO (2) TERMINALS SHALL ALSO BE PROVIDED FOR REMOTE ON/OFF CONTROL. INDIVIDUAL ALARMS SHALL BE ?ENABLED? OR ?DISABLED? FROM REPORTING TO THE COMMON ALARM.
- 8) SETBACK CONTROL THE CONTROL SHALL BE USER-CONFIGURABLE TO USE A MANUAL SETPOINT CONTROL OR A PROGRAMMABLE, TIME-BASED SETBACK CONTROL. THE SETBACK CONTROL SHALL BE BASED ON A 5 DAY/2 DAY PROGRAMMED WEEKLY SCHEDULE WITH CAPABILITY OF ACCEPTING TWO EVENTS PER PROGRAM DAY.
- 9) TEMPERATURE CALIBRATION THE CONTROL SHALL INCLUDE THE CAPABILITIES TO CALIBRATE THE TEMPERATURE AND HUMIDITY SENSORS AND ADJUST THE SENSOR RESPONSE DELAY TIME FROM 10 TO 90 SECONDS. THE CONTROL SHALL BE CAPABLE OF DISPLAYING TEMPERATURE VALUES IN °F OR °C.
- 10) SYSTEM AUTO RESTART FOR STARTUP AFTER POWER FAILURE, THE SYSTEM SHALL PROVIDE AUTOMATIC RESTART WITH A PROGRAMMABLE (UP TO 9.9 MINUTES IN 6-SECOND INCREMENTS) TIME DELAY. PROGRAMMING CAN BE PERFORMED EITHER AT THE WALL-MOUNTED CONTROLLER OR FROM THE CENTRAL, SITE-MONITORING SYSTEM.

11) UNIT ALARM THE CONTROL SYSTEM SHALL MONITOR UNIT OPERATION AND ACTIVATE AN AUDIBLE AND VISUAL ALARM IN THE EVENT OF THE FOLLOWING FACTORY PRESET ALARM CONDITIONS:

- A) HIGH TEMPERATURE (MAX 90°F, 32.2°C)
  - B) LOW TEMPERATURE (MIN 35°F, 1.7°C)
  - C) HIGH HUMIDITY (MAX 85% RH)
  - D) LOW HUMIDITY (MIN 20% RH)
  - E) HIGH WATER ALARM - LOCKOUT UNIT OPERATION
  - F) HIGH HEAD PRESSURE
  - G) LOSS OF POWER
  - H) COMPRESSOR SHORT CYCLE
- 12) CUSTOM ALARMS (2)
- A) HUMIDIFIER PROBLEM
  - B) FILTER CLOG
  - C) WATER DETECTED
  - D) SMOKE DETECTED
  - E) CUSTOM ALARM (1)
  - F) CUSTOM ALARM (2)
- USER-CUSTOMIZED TEXT CAN BE ENTERED FOR THE TWO (2) CUSTOM ALARMS.
- 13) ALARM CONTROLS EACH ALARM (UNIT AND CUSTOM) SHALL BE INDIVIDUALLY ENABLED OR DISABLED (EXCEPT FOR HIGH HEAD PRESSURE AND HIGH WATER IN CONDENSATE PAN) AND CAN BE PROGRAMMED FOR A TIME DELAY OF 0 TO 255 SECONDS OF CONTINUOUS ALARM CONDITION TO BE RECOGNIZED AS AN ALARM. EACH ALARM SHALL ALSO BE ENABLED OR DISABLED TO ACTIVATE THE COMMON ALARM (EXCEPT HIGH HEAD PRESSURE AND HIGH WATER IN CONDENSATE PAN).
- 14) AUDIBLE ALARM THE AUDIBLE ALARM SHALL ANNUNCIATE AT THE LCD WALL BOX ANY ALARM THAT IS ENABLED BY THE OPERATOR.
- 15) COMMON ALARM A PROGRAMMABLE COMMON ALARM SHALL BE PROVIDED TO INTERFACE USER SELECTED ALARMS WITH A REMOTE ALARM DEVICE. ALARMS SHALL BE ENABLED OR DISABLED FROM REPORTING TO THE COMMON ALARM.
- 16) REMOTE MONITORING ALL ALARMS SHALL BE COMMUNICATED TO THE LIEBERT SITE MONITORING SYSTEM WITH THE FOLLOWING INFORMATION: DATE AND TIME OF OCCURRENCE, UNIT NUMBER AND PRESENT TEMPERATURE AND HUMIDITY. THIS SYSTEM SHALL BE PROVIDED WITH AN INTERFACE TO COMMUNICATE WITH NIAGRA AX FRAMEWORK.
- 17) DIRECT EXPANSION COIL THE EVAPORATOR SECTION SHALL INCLUDE AN EVAPORATOR COIL, THERMOSTATIC EXPANSION VALVE AND FILTER-DRIER. THE EVAPORATOR COIL SHALL BE CONSTRUCTED OF COPPER TUBES AND ALUMINUM FINS. AN EXTERNALLY EQUALIZED THERMOSTATIC EXPANSION VALVE SHALL CONTROL REFRIGERANT FLOW. THE EVAPORATOR COIL SHALL BE FACTORY-CHARGED WITH R-407C REFRIGERANT AND SEALED. THE COIL SHALL BE PROVIDED WITH A GALVANIZED STEEL DRAIN PAN. THE EVAPORATOR UNIT CAN BE COUPLED DIRECTLY WITH A WATER/GLYCOL CONDENSING UNIT OR MOUNTED REMOTE TO THE INDOOR OR OUTDOOR CONDENSING UNIT.
- 18) OUTDOOR AIR-COOLED PROP FAN CONDENSING UNIT CONDENSING UNIT COMPONENTS SHALL INCLUDE A CONDENSER COIL, A DIRECT-DRIVE PROPELLER-TYPE FAN, A SCROLL COMPRESSOR, HIGH-PRESSURE SWITCH, LIEBERT LEE-TEMP? RECEIVER AND HEAD PRESSURE CONTROL VALVE, HOT GAS BYPASS SYSTEM AND LIQUID LINE SOLENOID VALVE. A HOT GAS BYPASS SYSTEM SHALL BE PROVIDED TO REDUCE COMPRESSOR CYCLING AND IMPROVE OPERATION UNDER LOW LOAD CONDITIONS. ALL COMPONENTS SHALL BE FACTORY-ASSEMBLED, CHARGED WITH R-407C REFRIGERANT AND SEALED. NO INTERNAL PIPING, BRAZING, DEHYDRATION OR CHARGING SHALL BE REQUIRED. CONDENSING UNIT SHALL BE DESIGNED FOR 105°F (35°C) AMBIENT AND BE CAPABLE OF OPERATION TO -30°F (-34.4°C). THE CONDENSER COIL SHALL BE CONSTRUCTED OF COPPER TUBES AND ALUMINUM FINS. THE CONDENSING UNIT SHALL BE DESIGNED TO OPERATE AT A SOUND LEVEL LESS THAN 58DBA. THE CONDENSING UNIT SHALL BE DESIGNED FOR DESIGN AMBIENT OPERATION OF 105°F (40.6°C). THE CONDENSER COIL SHALL BE PHENOLIC-COATED FOR EXTENDED COIL LIFE IN COASTAL AREAS.
- 19) ELECTRIC REHEAT THE ELECTRIC REHEAT SHALL BE LOW-WATT DENSITY, TUBULAR ELEMENT AND SHALL INCLUDE AGENCY APPROVED SAFETY SWITCH TO PROTECT THE SYSTEM FROM OVERHEATING. THE CAPACITY OF THE REHEAT COIL SHALL BE 10,080 BTU/HR, 5.3 KW, CONTROLLED IN ONE STAGE.
- 20) STEAM GENERATING HUMIDIFIER THE ENVIRONMENTAL CONTROL SYSTEM SHALL BE EQUIPPED WITH A STEAM GENERATING HUMIDIFIER THAT IS CONTROLLED BY THE MICROPROCESSOR CONTROL SYSTEM. IT SHALL BE COMPLETE WITH DISPOSABLE CANISTER, ALL SUPPLY AND DRAIN VALVES, 1" (25.4MM) AIR GAP ON FILL LINE, INLET STRAINER, STEAM DISTRIBUTOR AND ELECTRONIC CONTROLS. THE NEED TO CHANGE CANISTER SHALL BE ANNUNCIATED ON THE MICROPROCESSOR WALL BOX CONTROL PANEL. THE HUMIDIFIER SHALL HAVE A CAPACITY OF 3 LB./HR. (1.4KG/H). AN LED LIGHT ON THE HUMIDIFIER ASSEMBLY SHALL INDICATE CYLINDER FULL, OVERCURRENT DETECTION, FILL SYSTEM FAULT AND END OF CYLINDER LIFE CONDITIONS. REMOTE SENSORS THE UNIT SHALL BE SUPPLIED WITH REMOTE TEMPERATURE AND HUMIDITY SENSORS. THE SENSORS SHALL BE CONNECTED TO THE UNIT BY A 30 FT. (9M) SHIELDED CABLE.
- 22) CONDENSATE PUMP THE CONDENSATE PUMP SHALL HAVE THE CAPACITY OF 60 GPH AT 10 FT. HEAD. IT SHALL BE COMPLETE WITH INTEGRAL FLOAT SWITCH, DISCHARGE CHECK VALVE, PUMP, MOTOR ASSEMBLY AND RESERVOIR. A SECONDARY FLOAT SWITCH SHALL BE PROVIDED TO PERMIT FIELD WIRING TO THE UNIT CONTROL TO SHUT DOWN THE EVAPORATOR UPON A HIGH WATER LEVEL CONDITION.
- 23) REFRIGERANT LINE SETS PRE-CHARGED REFRIGERANT LINE SETS SHALL BE PROVIDED BY EMERSON IN PROPER LENGTHS FOR APPLICATION. LINE SET LENGTH SHALL BE COORDINATED BY THE CONTRACTOR.
- 24) REFRIGERANT LINE SWEAT ADAPTER KIT PROVIDE A SWEAT ADAPTER KIT TO PERMIT FIELD BRAZING OF REFRIGERANT LINE CONNECTIONS FOR APPLICATION TO SPLIT SYSTEMS.
- 25) AUTOCHANGEOVER AND LEAK DETECTION PROVIDE THE FOLLOWING:
  - A) AUTO CHANGEOVER CONTROL MODEL AC4
  - B) LEAK DETECTION SYSTEM FOR EACH UNIT.
- 26) EACH UNIT SHALL BE PROVIDED WITH ALL ACCESSORIES AND OPTIONS AS SCHEDULED ON THE DRAWINGS.

19. AUTOMATIC CONTROLS - GENERAL REQUIREMENTS

A. WORK INCLUDED

- 1) FURNISH AND INSTALL AS HEREIN SPECIFIED, A COMPLETE AUTOMATIC TEMPERATURE CONTROL SYSTEM PER THE BASE BUILDING STANDARDS.
- 2) PROVIDE A SUBMITTAL THAT MEETS THE REQUIREMENTS BELOW FOR APPROVAL.
- 3) PROVIDE POWER FOR PANELS AND CONTROL DEVICES FROM A SOURCE DESIGNATED BY THE ELECTRICAL CONTRACTOR.
- 4) COORDINATE INSTALLATION SCHEDULE WITH THE MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR.
- 5) FURNISH, MOUNT, AND WIRE ALL ASSOCIATED PANELS AND DEVICES FOR THE SYSTEM TO BE COMPLETELY OPERATIONAL REGARDLESS OF FUNCTION OR VOLTAGE, UNLESS OTHERWISE STATED.

B. SUBMITTALS

- 1) PRODUCT DATA: INCLUDE MANUFACTURER'S TECHNICAL LITERATURE FOR EACH CONTROL DEVICE INDICATED, LABELED WITH SETTING OR ADJUSTABLE RANGE OF CONTROL. INDICATE DIMENSIONS, CAPACITIES, PERFORMANCE CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, FINISHES FOR MATERIALS, AND INSTALLATION AND STARTUP INSTRUCTIONS FOR EACH TYPE OF PRODUCT INDICATED.

2) SHOP DRAWINGS: DETAIL EQUIPMENT ASSEMBLIES AND INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION.

- A. SCHEMATIC FLOW DIAGRAMS SHOWING FANS, COILS, DAMPERS, VALVES, AND CONTROL DEVICES.
  - B. WIRING DIAGRAMS: POWER, SIGNAL, AND CONTROL WIRING.
  - C. DETAILS OF CONTROL PANEL FACES, INCLUDING CONTROLS, INSTRUMENTS, AND LABELING.
- C. QUALITY ASSURANCE

- 1) INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER WHO IS AN AUTHORIZED REPRESENTATIVE OF THE AUTOMATIC CONTROL SYSTEM MANUFACTURER FOR BOTH INSTALLATION AND MAINTENANCE OF UNITS REQUIRED FOR THIS PROJECT.
- 2) COMPLY WITH ALL CURRENT GOVERNING CODES, ORDINANCES, AND REGULATIONS INCLUDING UL, NFPA, THE LOCAL BUILDING CODE, NEC, ETC.
- 3) MATERIALS AND EQUIPMENT SHALL BE THE CATALOGUED PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN PRODUCTION AND INSTALLATION OF AUTOMATIC TEMPERATURE CONTROL SYSTEMS AND SHALL BE MANUFACTURER'S LATEST STANDARD DESIGN THAT COMPLIES WITH THE SPECIFICATION REQUIREMENTS.



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No.	Date	Description
3	3/6/2012	ISSUED FOR PRICING
2	7/15/2011	ISSUED FOR PRICING
1	7/6/2011	ISSUED FOR PRICING

ISSUE

PROJECT

**CITY OF QUINCY  
 POLICE HEADQUARTERS  
 SERVER ROOM  
 COOLING**

DRAWING TITLE

**MECHANICAL  
 SPECIFICATIONS  
 SHEET 3 OF 3**

Drawn By	JCL	Drawing No.	
Checked By	JCL		
Date	07/01/2011		
Scale	SHEET 1 OF 3		
Project No.	B110078-000		

M-3.2

SAVE DATE: 3/6/2012 5:45 PM  
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**ELECTRICAL SYMBOLS LIST**

(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

**DEVICE SYMBOLS**

-  DISCONNECT SWITCH - TOGGLE TYPE WITH THERMAL OVERLOAD - 277V HP RATED
-  DISCONNECT SWITCH - TOGGLE TYPE MOTOR RATED, 20A, 1P, U.O.N.
-  20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED
-  20A, 125V DUPLEX RECEPTACLE FLUSH WALL MOUNTED, GFI TYPE.
-  HOMERUN - NUMERAL WHERE USED INDICATES CIRCUIT NUMBER FOR REFERENCE ONLY.  
2#12+1#12G-3/4" FOR ONE CKT. HOMERUN, U.O.N.  
3#12+1#12G-3/4" FOR TWO CKT. HOMERUN, U.O.N.  
4#12+1#12G-3/4" FOR THREE CKT. HOMERUN, U.O.N.
-  HOMERUN - NUMERAL WHERE USED INDICATES CIRCUIT NUMBER FOR REFERENCE ONLY
-  COMBINATION MOTOR CONTROLLER AND DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED
-  UNFUSED DISCONNECT SWITCH - WP DENOTES WEATHERPROOF SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED
-  FUSED DISCONNECT SWITCH; SWITCH AMPS/FUSE AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED
-  SURFACE MOUNTED LIGHTING PANELBOARD
-  FLUSH MOUNTED LIGHTING PANELBOARD
-  SURFACE MOUNTED POWER PANELBOARD
-  FLUSH MOUNTED POWER PANELBOARD
-  SURFACE MOUNTED POWER DISTRIBUTION PANELBOARD
-  CEILING MOUNTED JUNCTION BOX WITH FLEX EQUIPMENT CONNECTION  
PS = DENOTES PROJECTOR SCREEN  
PJR = CONNECTION TO PROJECTOR  
EWC = CONNECTION TO WATER COOLER  
MP = CONNECTION TO MOVABLE PARTITION
-  FLUSH WALL MOUNTED JUNCTION BOX
-  FLUSH FLOOR MOUNTED JUNCTION BOX
-  CAPPED CONDUIT
-  MOTOR
-  GROUND CONNECTION

**ELECTRICAL DEMOLITION NOTES**

1. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF ELECTRICAL WORK AS DESCRIBED IN THE SPECIFICATIONS WITH TYPICAL ALLOWANCES INDICATED FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED, TO BE REVIEWED BY ARCHITECT.
2. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ARCHITECTURAL AND ELECTRICAL LAYOUTS IN FULL COORDINATION WITH THE ARCHITECT'S DEMOLITION PLANS. ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF POWER SUPPLY.
3. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH FUNCTIONING ELECTRICAL SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.
4. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
5. THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES AND OTHER DEVICES, COMPLETE WITH ASSOCIATED WIRING, CONDUITS, ETC., FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO PANELBOARD.
6. ALL RACEWAYS WHICH BECOME EXPOSED DURING THE ALTERATION WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
7. ALL UNUSED OUTLET BOXES OR CAPPED FLOOR OUTLETS SHALL BE PROVIDED WITH MATCHING BLANK COVERS.
8. EXISTING PANEL DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE MODIFIED TO REFLECT THE BRANCH CIRCUIT WIRING CHANGES.
9. PORTIONS OF FEEDER RUNS TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED. NEW FEEDER EXTENSIONS SHALL MATCH EXISTING ONES IN ALL RESPECTS, CABLE TYPE, CONDUCTOR AMPACITY, CONDUIT SIZES, ETC.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS. THE CONTRACTOR SHALL FOLLOW CLOSELY THE ARCHITECT'S DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE.
11. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR, AS DIRECTED BY THE OWNER.
12. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVER TIME, IF REQUIRED, TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
13. THE SHUTDOWN OF EXISTING BUILDING ELECTRICAL SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.

**DEMOLITION LEGEND**

(NOT ALL ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT)

- (E) EXISTING TO REMAIN
- (ER) EXISTING TO BE REMOVED
- (ERR) EXISTING TO BE REMOVED & RELOCATED
- (N) NEW
- (RE) RELOCATED EXISTING
- (RC) EXISTING TO BE RECIRCUITED AS SHOWN ON FLOOR PLAN

**EXAMPLE**



**ELECTRICAL GENERAL NOTES**

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS.
2. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK), NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
3. PASS RACEWAYS OVER WATER, STEAM OR OTHER PIPING WHEN PULL BOXES ARE NOT REQUIRED. NO RACEWAY WITHIN 3 INCHES OF STEAM OR HOT WATER PIPES OR APPLIANCES (EXCEPT PIPE CROSSINGS WHERE RACEWAY SHALL BE AT LEAST 1 INCH FROM PIPE COVERS).
4. CUT CONDUIT ENDS SQUARE. BEAM SMOOTH. PAINT MALE THREAD OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.
5. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS ARE NOT PERMITTED. DO NOT RUN CONDUIT IN PRECAST ROOF SLABS, IN 2 INCH SLABS OR IN TERRAZZO FLOOR FINISH.
6. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
7. SET BOXES SQUARE AND TRUE WITH BUILDING FINISH. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS.
8. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT. VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
9. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION.
10. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE.
11. PROVIDE PULLBOXES WHERE INDICATED, WHERE REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES.
12. EMPTY RACEWAY RUNS: PROVIDE PULLBOXES EVERY 100 FT AND AS INDICATED. COORDINATE LOCATIONS WITH OTHER TRADES.
13. JUNCTION AND PULLBOXES: LOCATE GENERALLY NOT EXPOSED IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT.
14. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
15. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
16. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
17. PROVIDE 2#14 INDICATING PILOT LIGHT WIRES FROM PILOT LIGHT IN CONTROLLER TO LOAD SIDE OF DISCONNECT SWITCH. RUN WIRES IN BRANCH CIRCUIT CONDUIT AND INCREASE CONDUIT SIZE AS REQUIRED.
18. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32°F (0°C). PROVIDE CABLE SUPPORTS FOR WIRE IN RISER CONDUITS AS REQUIRED BY CODE.
19. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. COMMON BOXES: PROVIDE BARRIERS BETWEEN EMERGENCY AND NORMAL WIRING.
20. HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET:
 

RECEPTACLES AND TELEPHONES: GENERALLY	1'-6"
OVER WORK BENCHES	3'-6"
WALL SWITCHES	4'-0"
WALL FIXTURES	7'-0"
MOTOR CONTROLLERS	5'-0"
GONGS AND HORNS	7'-6"
FIRE ALARM STATIONS	4'-0"
CLOCKS	7'-6"
STROBE LIGHTS	6'-8" TO LENS
- EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE REQUIREMENTS, AS NOTED OR DIRECTED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND CONFIRMING ALL MOUNTING HEIGHTS WITH ARCHITECT AND ARCHITECTURAL DRAWINGS.
21. WIRE COLOR CODING: AS PER CODE. WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
22. INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS: ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES. ALARM AND EMERGENCY SYSTEMS ARE NOT TO BE INTERRUPTED.
23. FIRESTOPPING SHALL BE INSTALLED WHENEVER WIRING OR RACEWAYS CROSS FIRE RATED CONSTRUCTION.

**ELECTRICAL DRAWING INDEX**

DRAWING NO.	DRAWING TITLE
E1.0	ELECTRICAL LEGEND AND GENERAL NOTES
E2.0	ELECTRICAL POWER PLAN
E3.0	ELECTRICAL SPECIFICATIONS SHEET 1 OF 2
E3.1	ELECTRICAL SPECIFICATIONS SHEET 2 OF 2

3	3/6/2012	ISSUED FOR PRICING
2	7/15/2011	ISSUED FOR PRICING
1	7/6/2011	ISSUED FOR PRICING
No.	Date	Description

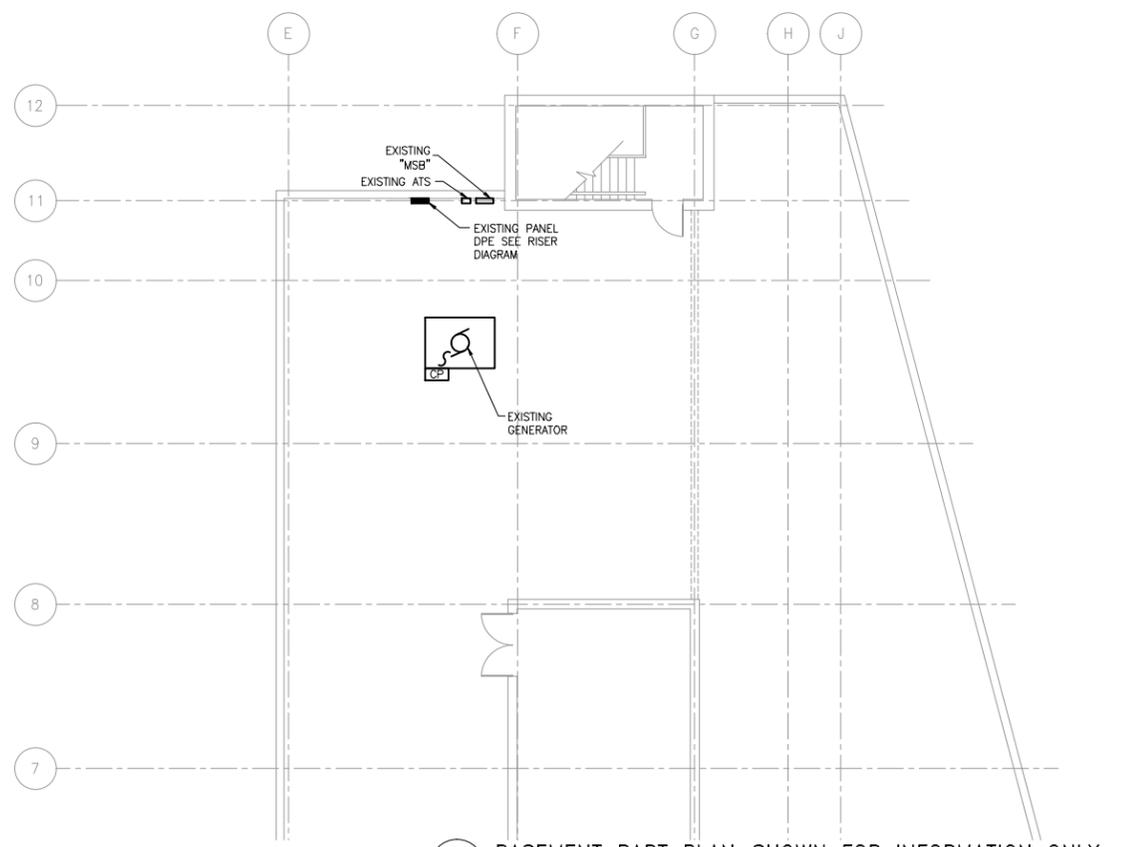
ISSUE

PROJECT  
**CITY OF QUINCY  
POLICE HEADQUARTERS  
SERVER ROOM  
COOLING**

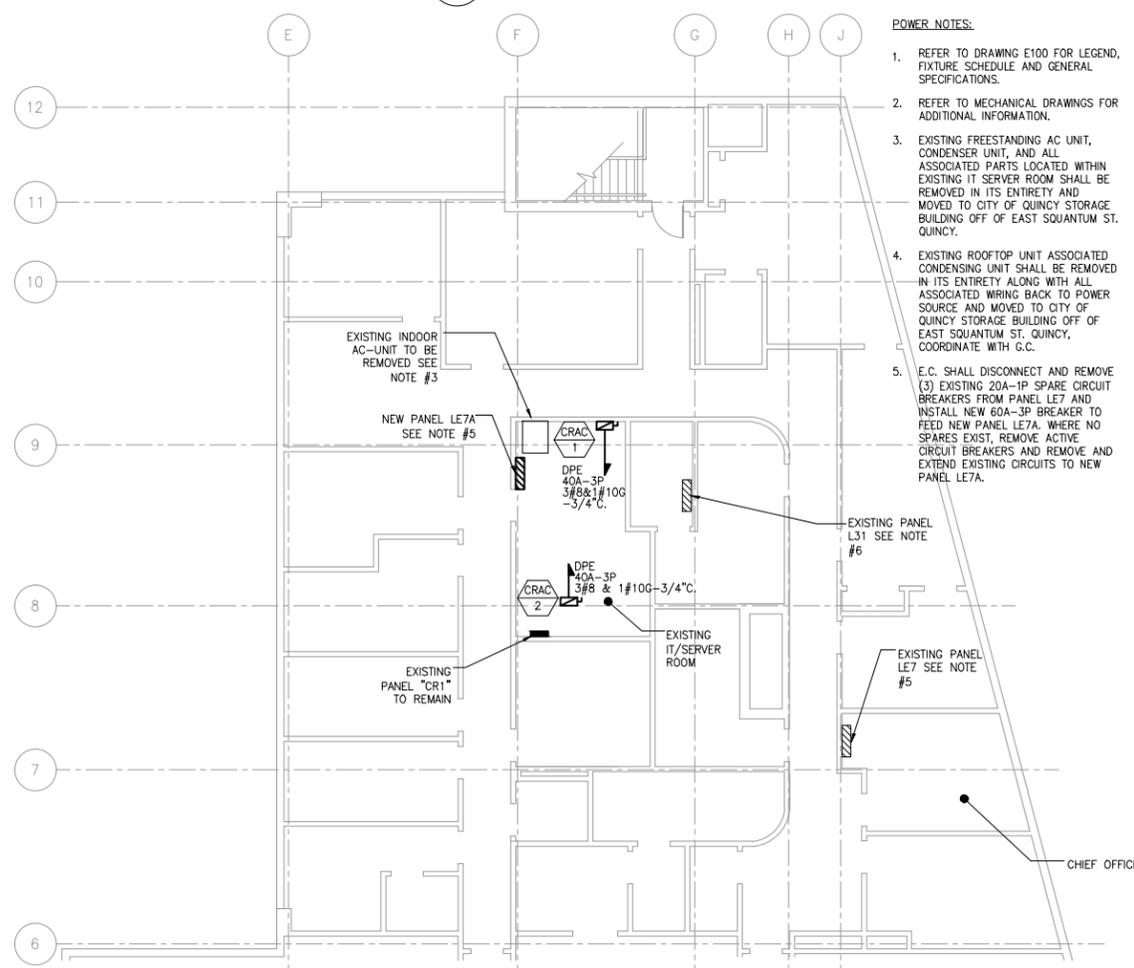
DRAWING TITLE  
**ELECTRICAL LEGEND  
AND GENERAL NOTES**

Drawn By	Drawing No.
Checked By	<b>E1.0</b>
Date	
Scale	
Project No.	

SAVE DATE: 3/14/2012 9:44 AM  
 PLOT DATE: 3/28/2012 5:02 PM  
 LOGIN: Lardisky, jhm  
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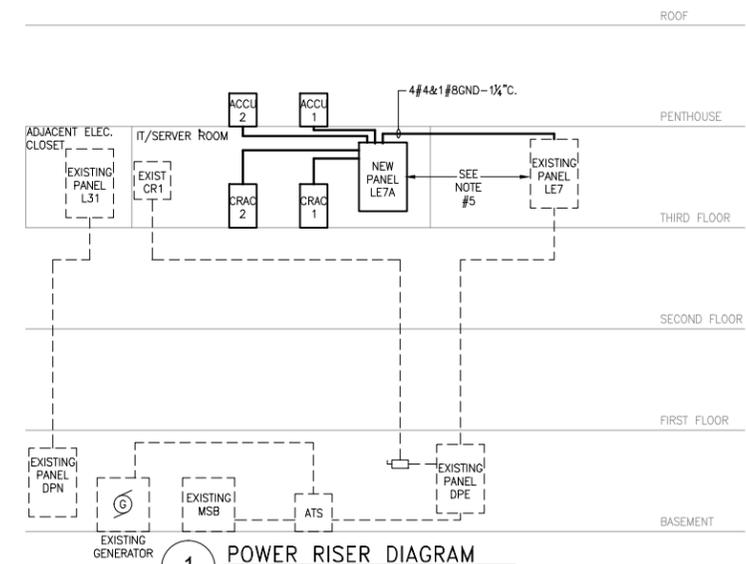


**1 BASEMENT PART PLAN—SHOWN FOR INFORMATION ONLY**  
 SCALE: 1/8" = 1'0"



**3 THIRD FLOOR PART PLAN**  
 SCALE: 1/8" = 1'0"

- POWER NOTES:**
- REFER TO DRAWING E100 FOR LEGEND, FIXTURE SCHEDULE AND GENERAL SPECIFICATIONS.
  - REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
  - EXISTING FREESTANDING AC UNIT, CONDENSER UNIT, AND ALL ASSOCIATED PARTS LOCATED WITHIN EXISTING IT SERVER ROOM SHALL BE REMOVED IN ITS ENTIRETY AND MOVED TO CITY OF QUINCY STORAGE BUILDING OFF OF EAST SQUANTUM ST. QUINCY.
  - EXISTING ROOFTOP UNIT ASSOCIATED CONDENSING UNIT SHALL BE REMOVED IN ITS ENTIRETY ALONG WITH ALL ASSOCIATED WIRING BACK TO POWER SOURCE AND MOVED TO CITY OF QUINCY STORAGE BUILDING OFF OF EAST SQUANTUM ST. QUINCY, COORDINATE WITH G.C.
  - E.C. SHALL DISCONNECT AND REMOVE (3) EXISTING 20A-1P SPARE CIRCUIT BREAKERS FROM PANEL LE7 AND INSTALL NEW 60A-3P BREAKER TO FEED NEW PANEL LE7A. WHERE NO SPARES EXIST, REMOVE ACTIVE CIRCUIT BREAKERS AND REMOVE AND EXTEND EXISTING CIRCUITS TO NEW PANEL LE7A.



**1 POWER RISER DIAGRAM**  
 SCALE: N.T.S.

**NOTES:**

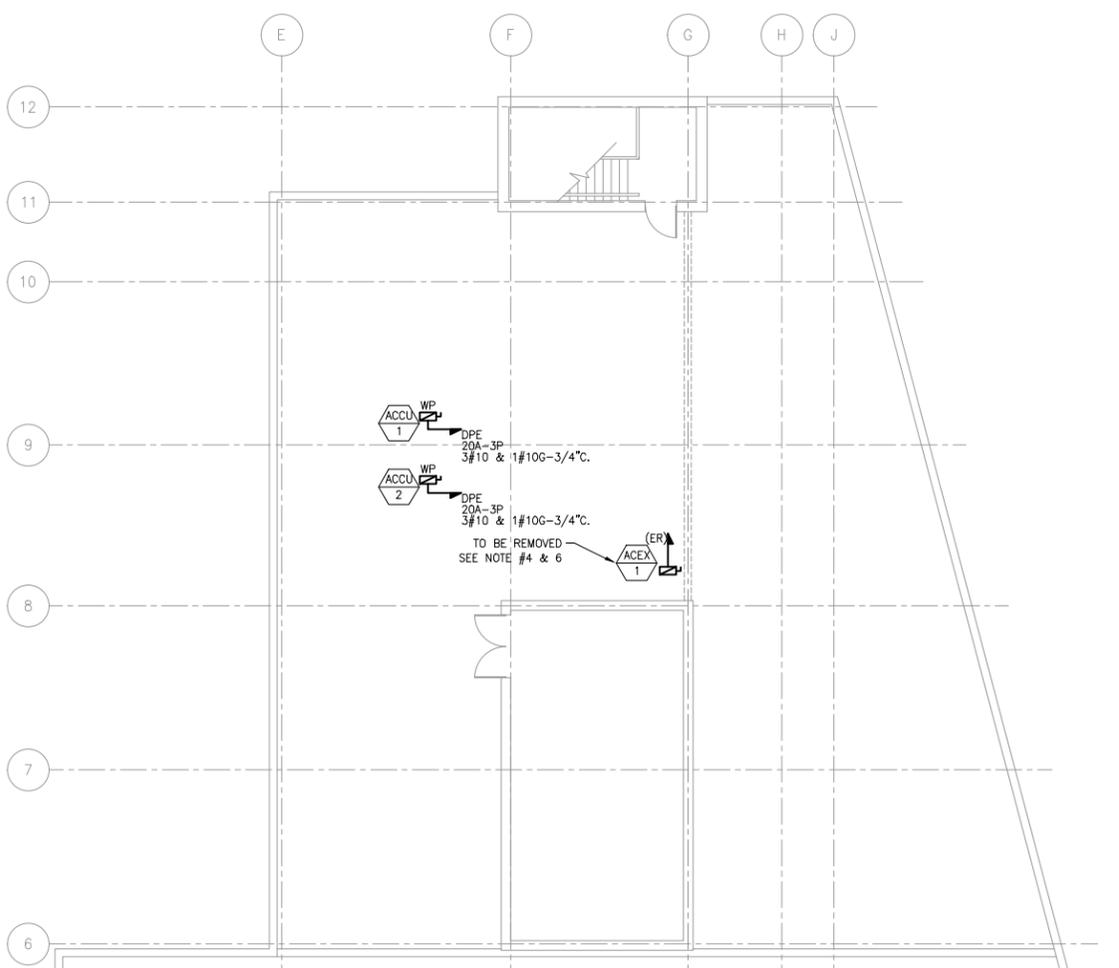
- E.C. SHALL INSTALL NEW PANEL "LE7A" WITHIN EXISTING SERVER ROOM AND PROVIDE NEW FEEDERS TO NEW SERVER ROOM AC EQUIPMENT AS SHOWN ON FLOOR PLANS, UPON COMPLETION OF WIRING TO UNITS DISCONNECT AND REMOVE EXISTING (2) 40A-2P POLE BREAKER WITHIN PANEL "L31" PREVIOUSLY FEEDING AC AND ROOFTOP CONDENSING UNIT BEING REMOVED.

**PANELBOARD SCHEDULES**

PANEL No.	LOCATION	MTG.	VOLTAGE, #, W	CIRCUIT BREAKERS										SPACES	TOTAL POLES	AIC	BUS SIZE	MAIN C.B.	NEUTRAL 200%	GND. BUS	ISO. GND. BUS	REMARKS		
				20/1	20/1 GF1	20/2	20/3	30/1	40/3	60/3	70/3	100/3	OTHERS											
LE7A	SERVER ROOM	SURF	120/208, 3ø, 4W	3	-	-	2	-	2	-	-	-	-	-	-	-	24	10k	100	MLO	N	FULL	YES	①
LE7	3RD FLOOR			-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	②

**PANELBOARD SCHEDULE NOTES:**

- ALL NEW PANELBOARDS SHALL DOOR ON DOOR WITH HINGED COVERS.
- EXISTING PANELBOARD TO REMAIN. NEW CIRCUIT BREAKERS TO MATCH EXISTING MANUFACTURER, AIC RATING AND CHARACTERISTICS.



**4 ROOF PART PLAN**  
 SCALE: 1/8" = 1'0"

No.	Date	Description
4	5/6/2012	ISSUED FOR PRICING
3	1/27/2012	ISSUED FOR ADDENDUM
2	7/15/2011	ISSUED FOR PRICING
1	7/6/2011	ISSUED FOR PRICING

**PROJECT**  
 CITY OF QUINCY  
 POLICE HEADQUARTERS  
 SERVER ROOM  
 COOLING

**DRAWING TITLE**  
 ELECTRICAL IT/SERVER ROOM  
 POWER PLAN

Drawn By	Checked By	Date	06/29/2011	Scale	1/4" = 1'-0"	Project No.	B110078-000	
							Drawing No.	<b>E2.0</b>

ELECTRICAL WORK

1. GENERAL:

- A. The "General Conditions of the Contract for Construction," AIA Document A201, latest edition, and these Specifications as applicable are part of this Contract.
- B. All applicable codes, laws and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these Specifications, and their provisions shall be carried out by the Contractor who shall inform the Building Manager, prior to submitting a Proposal, of any work or material which violates any of the above laws and regulations. Any work done by the Contractor causing such violation shall be corrected by the Contractor.
- C. Investigate each space through which equipment must be moved. Where necessary, equipment shall be shipped from manufacturer in sections of size suitable for moving through available restrictive spaces. Ascertain from building Building Manager and Tenant at what times of day equipment may be moved through all areas.
- D. Drawings are diagrammatic and indicate general arrangement of systems and work. Conduit routing is shown diagrammatically and does not show all offsets, drops and rises. The Contractor shall allow in his price for routing of conduit to avoid obstructions. Coordination with existing services, including those of other trades, is required. Maintain headroom and space conditions.
- E. Install work to be readily accessible for operation, maintenance and repair. Minor deviations from drawings may be made to accomplish this, but changes that involve extra cost shall not be made without approval.
- F. Removal and relocation of certain existing work may be necessary for the performance of the general work. Not all existing conditions can be completely detailed on the drawings. The Contractor shall survey the site and include all changes and charges in making up the work Proposal.
- G. Connections to existing work: Install new work and connect to existing work with minimum interference to existing facilities. Temporary shutdowns of existing services shall be performed at no additional charges, at times not to interfere with normal operation of existing facilities and only with written consent of Building Manager. Alarm and emergency systems shall not be interrupted. Maintain continuous operation of existing facilities as required with necessary temporary connections between new and existing work. Connect new work to existing work in neat and acceptable manner. Restore existing disturbed work to original condition, including maintenance of wiring continuity as required.
- H. Disconnect, remove and/or relocate existing material, equipment and other work as noted or required for proper installation of new work.
- I. The Contractor shall keep all equipment and materials, and all parts of the building, exterior spaces and adjacent streets, sidewalks and pavements, free from material and debris resulting from the execution of this work. Excess materials will not be permitted to accumulate either on the interior or on the exterior.
- J. Seal openings through partitions, walls and floors with mineral wool or other noncombustible material. All penetrations through new and existing rated fire and smoke partitions and/or floors shall be completely sealed using materials and methods described in subsequent "FIRE STOPPING" Specifications Section.
- K. Provide all necessary flashing and counterflashing to maintain the waterproofing integrity of the building as required by the installation or removal of conduit and equipment.
- L. Provide 4-inch high equipment pads for all floor-mounted equipment.
- M. All existing material, equipment and construction debris to be removed under this contract shall become the property of the Contractor with the exception of specific equipment and apparatus requested by the building representative, Architect or as noted to be relocated on the drawings. Removed equipment shall be properly disposed of by this Contractor.
- N. The Contractor's Proposal for all work shall be predicated on the performance of the work during regular working hours. When so directed, however, the Contractor shall install work during overtime hours and the additional cost to be charged therefore shall be only the "premium" portion of the wages paid.
- O. Unless otherwise specifically noted or specified, include all cutting and patching of existing floors, walls, partitions and other materials in the existing building. The Contractor shall restore these areas to original condition.
- P. All material and equipment shall be new unless otherwise noted and shall be in accordance with building standards.
- Q. Submission of a Proposal shall be construed as evidence that a careful examination of the portions of the existing building, equipment, etc., which affect this work, and the access to such spaces, has been made and that the Contractor is familiar with existing conditions and difficulties that will affect the execution of the work. The Contractor is responsible to indicate any discrepancies between the contract drawings and actual field conditions prior to submittal of bid. Submission of a Proposal will be construed as evidence that such an examination has been made. Later claims shall not be made for labor, equipment or materials required because of difficulties encountered which could have been foreseen during such an examination. The on-site inspection shall verify existing conduit clearances, etc) and conditions. (sizes).
- R. Insurance: In accordance with building requirements and shall include a Hold Harmless clause for Building Manager and Engineer.
- S. All work shall be done when and as directed by the Client and in a manner satisfactory to the Building Building Manager. Work shall be performed so as to cause the least possible inconvenience and disturbance to other building occupants.
- T. The final acceptance shall be made after the Contractor has adjusted his equipment, tested the various systems, demonstrated that it fulfills the requirements of the drawings and specifications and has furnished all the required certificates of inspection and approval.

2. SCOPE OF WORK:

- A. Scope of Work shall consist of providing labor, materials, equipment, services and fees necessary for complete and safe installation in conformity with the regulations of the Massachusetts Electrical Code, Local Building Department, National Electrical Safety Code, the requirements of the Local Fire Department, Local Wiring Inspector, and all legally constituted codes/authorities having jurisdiction. Where the drawings and/or specification requirements exceed the requirements of the applicable codes the requirements specified in the contract documents shall take precedence. Where the drawings and specifications are in conflict, the greater requirement shall take precedence.
- B. All drawings, plans, details, specifications and specification addenda are made part of this Contract and shall apply to all work under the Contract unless otherwise amended, modified, supplemented or specified herein.

- C. The Contractor shall furnish a written guarantee to replace or repair promptly and assume responsibility for all expenses incurred for any workmanship and equipment in which defects develop within one year from the date of final certificate for payment and/or from date of actual use of equipment or occupancy of spaces by tenant included under the various parts of the work, whichever date is earlier. This work shall be done as directed by the tenant. Guarantee shall also provide that where defects occur, Contractor will assume responsibility for all expenses incurred in repairing and replacing work of other trades affected by defects, repairs or replacements in equipment supplied by Contractor.
- D. The Contractor shall give necessary notice, file drawings and specifications with all departments having jurisdiction, obtain permits or licenses necessary to carry out this work and pay all fees therefore. The Contractor shall arrange for inspection and tests of any or all parts of the work if so required by authorities and pay all charges for the same. The Contractor shall pay all costs for, and furnish to the Building Manager before final billing, all certificates necessary as evidence that the work installed conforms with all regulations where they apply to this work.
- E. Materials and equipment shall be new and comply with the applicable standards of the following authorities, except where the contract documents prescribe more rigorous qualifications, the documents shall govern:
  - Underwriters' Laboratories, Inc. (UL)
  - National Electrical Manufacturer's Association (NEMA)
  - Institute of Electric and Electronic Engineers (IEEE)
  - American Society for Testing Materials (ASTM)
  - American National Standards Institute (ANSI)
  - National Fire Protection Association (NFPA)
  - Insulated Power Cable Engineers Association (IPCEA)
  - Occupational Safety and Health Administration (OSHA)
  - American with Disabilities Act (ADA)

3. SHOP DRAWINGS

- A. Prior to the installation of any work and procurement of equipment, Contractor shall provide complete sets of coordinated shop drawings of all new and existing equipment, indicating capacity, dimensions and sequence of operation for written approval by the Architect and Engineer.
- B. Indicate on each shop drawings submitted:
  - 1) Project name and location
  - 2) Name of Architect and Engineer
  - 3) Item identification
  - 4) Approval stamp of prime contractor
- C. Submissions:
  - 1) Submissions 11 in. x 17 in. or smaller: If the submission is a catalog cut, then the Contractor shall submit one PDF to architect for distribution. Architect will forward the original and to the Engineer. All catalog cuts shall be complete.
  - 2) Submissions larger than 11 in. x 17 in.: Submit two prints and one paper sepia to the Architect. The Architect will forward one print and the pdf to the Engineer.
- D. Submit shop drawings for the following:
  - 1) Switches
  - 2) Circuit breakers
  - 3) Panelboards (including dimensions, schedules, and catalog cuts).
  - 4) Raceways
  - 5) Wire and cable
  - 6) Test Procedures and Reports.

4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

- A. Upon completion and acceptance of work, Contractor shall furnish written instructions and equipment manuals and demonstrate to the Building Manager the proper operation and maintenance of all equipment and apparatus furnished under this contract.
- B. These instructions shall be typed on 8-1/2 in. x 11 in. paper and bound in three ring binders with clear acetate covers. Contractor shall give three copies of the instructions to the Building Manager and one copy to the Engineer.
- C. The instruction booklet shall bear the name, address and telephone number of the project, Architect and Engineer.
- D. Reproducible "As-Built" drawings shall be provided indicating the as installed conditions of the work. "As-Built" drawings shall be provided to the Architect after completion of the installation. "As-Built" drawings shall be in AutoCAD format (Release 2002 or later).
- E. Written instructions, equipment manuals, and "As-Built" drawings (in AutoCAD format) shall be given to the Building Manager on a CD when requested.

5. GENERAL PROVISIONS FOR ELECTRICAL WORK:

- A. Specifications are of simplified form and include incomplete sentences. Words or phrases such as "the Contractor shall," "shall be," "furnish," "provide," "to," "the," and "all" have been omitted for brevity.
- B. Definitions:
  - 1) "Provide": To supply, install and connect up complete and ready for safe and regular operation the particular work referred to unless specifically otherwise noted.
  - 2) "Install": To erect, mount and connect complete with related accessories.
  - 3) "Furnish" or "Supply": To purchase, procure, acquire and deliver complete with related accessories.
  - 4) "Work": Labor, materials, equipment, apparatus, controls, accessories and other items required for proper and complete installation.

- 5) "Wiring": Raceway, fittings, wire, boxes and related items.
- 6) "Concealed": Embedded in masonry or other construction, installed in furred spaces, within double partitions or hung ceilings, in trenches, in crawl spaces, or in enclosures.
- 7) "Exposed": Not installed underground or "concealed" as defined above.
- 8) "Similar" or "Equal": Equal in materials, weight, size, design and efficiency of specified product.

- C. Temporary light and power: Provide temporary light and power systems at earliest possible date within the construction areas for the requirements of all trades as herein described. Extend systems to new construction as soon as physically possible. Maintain system during working hours of all trades. Cost of energy will be paid for by Building Manager. Provide all required maintenance, including lamps and sockets.

D. Quality assurance

- 1) Quality and gauge of materials: New, best of their respective kinds, free from defects and listed by Underwriters Laboratories, Inc., or other nationally approved testing agency and bearing their label. Materials and equipment of similar application shall be of same manufacturer, except as noted.
- 2) Current characteristics:
  - a) Service: 120/208 volt, 3 phase, 4 wire, 60 hertz with grounded neutral.
- 3) Heights of outlets: Contractor shall be responsible for coordinating and confirming all mounting heights with Architect and Architectural drawings.
  - a) From finished floor to centerline of outlets for:
    - Receptacles and telephones: 1 ft-6 in.
    - Wall switches: 4 ft-0 in.
    - Wall fixtures: 7 ft-0 in.
    - Motor controllers: 5 ft-0 in.
    - Clocks: 7 ft 6 in.
    - Strobe lights: 6 ft-8 in. or 6 in. below ceiling (whichever is lower)
    - Gongs and horns: 7 ft-6 in.
    - Fire alarm pull stations: 4 ft-0 in.
  - b) Exceptions: At junction of different wall finish materials, on molding or break in wall surface, in violation of code, or as noted or directed.

E. Product delivery, storage and handling

- 1) Moving of equipment: Where necessary, ship in carted sections of size to permit passing through available spaces.
- 2) Accessibility: For operation, maintenance and repair. Minor deviations shall be permitted. Changes of magnitude or involving extra cost are not permissible without review. Group concealed electrical equipment requiring access with equipment freely accessible through access doors.

F. Materials

- 1) Nameplates: Provide black lamicoid sheet with 3/4 in. white lettering, fastened with epoxy cement for each disconnect switch, circuit breaker, panel, cabinet, transformer, enclosure, motor controller and the like. Nameplates shall describe the name and number of each component.
- 2) Cable tags: Tag each conductor passing through splice or pullbox with a white linen tag, indicating point of origin and termination of the conductor.
- 3) Inserts and supports:
  - a) Inserts: steel, slotted type, factory painted.
    - Single rod: similar to Grinnell Fig. 281.
    - Multi-rod: similar to Fee and Mason Series 9000 with end caps and closure strips.
    - Clip form nails flush with inserts.
    - Maximum loading 75 percent of rating.
  - b) Supports from building construction: Inserts, beam clamps, steel fishplates (in concrete fill only), cantilever brackets or other means. Submit for review.
  - c) Grouped lines and services: Trapeze hangers of bolted angles or channels.
  - d) Where building construction is inadequate: Provide additional framing. Submit for review.

- G. Paint shall be the best grade for its purpose. Deliver in original sealed containers and apply in accordance with manufacturer's instructions. Colors shall be as selected by Architect or Engineer. Utilize galvanized iron primer on panel and pull boxes, after fabrication. Utilize hot dipped galvanized or dipped in zinc based primer for: outlet boxes, junction boxes, conduit hangers, rods, inserts and supports. Zinc based primer with finish to match surroundings shall be used for marred surfaces of steel equipment and raceways. A field-applied zinc based prime coat shall be utilized for steel or ironwork.

- H. Brush and clean work prior to concealing, painting and acceptance. Painted exposed work soiled or damaged; clean and repair to match adjoining work before final acceptance. Remove debris from inside and outside of material and equipment.

- I. Final locations and mounting orientations of all switches, receptacles and light fixtures shall be verified with Architect.
- J. Provide access doors when concealed electrical equipment requires access. All access door locations shall be reviewed by Architect prior to installation.

6. DEMOLITION

- A. "Selective Demolition": Is hereby defined to include but is not necessarily limited to the removal of the following existing materials, items and equipment.

- 1) Refer to electrical demolition plan and related notes for extent of demolition.
- 2) Refer to existing drawings and site conditions for all removal of work necessary for completion of new work as shown. Each bidder shall carefully examine the premises and documents during the bidding period and ascertain the extent of removal of existing work. If additional work is noted by the Contractor, call it to the attention of the Architect prior to submitting bid. By submitting a bid, the Contractor will have deemed to have made such examination, to accept such conditions, and to have made allowances in preparing his bid.
- 3) Items of salvage shall be carefully removed without damage; nails and other fasteners removed that are not integral to their construction; and stored and protected at locations directed by the Building Manager. Identify and tag all salvage materials regarding location in existing building and relationship of parts.
- 4) All demolished and/or removed materials not required by Building Manager shall become the property of the Contractor and shall be removed from the premises, and shall be properly disposed of in a legal manner, off-site.
- 5) Care must be taken not to disturb existing wiring, which is not effected by demolition. Restore all circuits and equipment disrupted or disturbed by the removal of only parts of existing systems. Maintain continuous operation of existing facilities as required with necessary temporary connections between new and existing work. Alarm and emergency systems shall not be interrupted.
- 6) Plan installation of new work and connections to existing work to insure minimum interference with regular operation of existing facilities. Temporary shutdowns when required are to be made only with written consent of Building Manager at times not to interfere with normal operation and no additional charge.
- 7) Connect new work to existing in a neat and approved manner. Restore existing work disturbed while installing new work to acceptable condition as determined by building Building Manager.
- 8) All raceways to be abandoned shall be reworked as defined within the demolition notes. Where it is impractical to remove raceway back to source, disconnect wiring at load (equipment) and at line side, cut and cap, flush to surface. Remove conductors from existing raceways to be rewired. Clean raceway as required prior to rewiring.
- 9) All required work for tie-in to the existing equipment shall be accomplished after hours, the exact day and time shall be directed by Building Manager, and at no additional charge.

7. CUTTING AND PATCHING

- A. The Contractor shall be responsible for all cutting and patching of the existing and new construction work, which may be required for the proper installation of the electrical work. All patching shall be of the same materials, workmanship, and finish, and shall accurately match all surrounding work.
- B. Core boring of concrete floors and/or walls if required, shall be provided by the Electrical Contractor.

8. COORDINATION

- A. The Contractor shall verify locations of all equipment with architectural drawings. In centering outlets and locating boxes and outlets, allow for overhead pipes, ducts, and mechanical equipment, variations in fire proofing and plastering, window and door trim, paneling, hung ceilings, and the like, and correct any inaccuracy resulting from failure to do so without expenses to the Building Manager.

9. EQUIPMENT FURNISHED BY OTHERS

- A. The Contractor shall furnish and install wiring for equipment furnished by others, as shown on drawings. Coordinate with all other trades or details for installation. The term "wiring" as used here-in, includes, but is not limited to, furnishing and installing conduit, wire, junction boxes, disconnects and making connections. Contractor shall check architectural, mechanical, and plumbing drawings and specifications for equipment to be installed by others. Contractor shall be responsible for proper wiring and necessary electrical adjustments to equipment to conform to specified requirements of the equipment.

10. LOW-VOLTAGE DISTRIBUTION EQUIPMENT:

- A. Provide complete equipment including: Switches, fuses, circuit breakers, panels and transformers, etc.
- B. All equipment shall conform to NEMA, ANSI and IEEE standards.
- C. Disconnect switches shall be fused or nonfused as noted. Voltage shall be as required. Switches shall be heavy duty, except as noted, and horsepower rated for motor loads.
  - 1) Toggle type switches shall be nonfused, load break, utilized with a maximum ratings of 20 amp at 600 volts and 30 amp at 240 volts. Two-pole switches shall be similar to Leviton MS 302. Three-pole switches shall be similar to Leviton MS 303.
  - 2) Knife-blade type switches shall be load break, quick-make-quick-break with arc quenchers, UL Class R up to 600 amp. Switches shall be similar to General Electric QMR. All switch enclosures shall be dead front, NEMA Type 1, except as noted.
- D. Circuit breakers: Molded case breakers shall be thermal-magnetic, quick-make-quick-break, bolt-on type, manually operated with insulated trip-free handle. Multi-pole type breakers shall contain internal trip bar. Terminals shall be suitable for copper or aluminum cable. Provide interchangeable trip for 225A frame and above. Furnish auxiliary devices where required for shut tripping, open and close motor operator and alarm indication. Enclosures shall be dead front, NEMA Type 1, except as noted. Frames AIC shall be as follows, unless otherwise noted:
  - 1) 120/240 volts, 100-amp frame: 10,000 amps minimum.
  - 2) 277/480 volts, 100-amp frame: 14,000 amps minimum.
- E. Panelboards: Switching units shall be 3 phases, 4-wire bolt-on circuit breaker type. Bus bars shall be hard drawn copper, minimum 98 percent conductivity. For blank (space) compartments, provide full rated bus. Minimum gutter spaces shall be 5-3/4 in. sides, top and bottom, increase for through feeders. Provide 100% copper ground bus and 100% copper neutral bus and increase neutral bus as indicated.

- 1) Where more than 42 poles are indicated for a panel, provide multi-section panels for the appropriate number of poles. Where the schedule indicates a main device for the panel, provide separate main devices for each section. Split the loading and branch breakers between each section.
- 2) Enclosures shall be dead front surface or flush as indicated. Trims shall be secured to panel with machine screws. Covers shall be hinged door-in-door construction with cylinder locks and catches. Locks must be compatible with building standard key system and when none exists, they shall be similar to a Yale no. 911 key.
- 3) Directory holder shall be metal frame with clear plastic, transparent cover. A typewritten list indicating feeder cable and conduit size, circuit numbers, outlets supplied and their locations shall be provided.
- 4) Provide bolt-on, molded case, circuit breakers with thermal magnetic trips. Multiple pole breakers shall be single handles, common trip. Provide handle locks for emergency lighting circuits, fire alarm, security, or other similar functions. Main breakers shall be vertically mounted, separate from branch breakers.
- 5) Bus bars shall be flat and parallel to the panel cabinet. The phase and neutral bus bars shall be of the fully rated copper type. 200% rated neutrals are to be provided for all 120/208V panelboards fed by K-Rated transformers or where indicated on the plans or schedules. Single or multiple feeder cable terminal lugs shall be furnished with the panelboard to accommodate the panelboard feeder sizes and quantities shown on the feeder schedules. Through feed or sub feed lugs shall be provided where indicated on the drawings and or schedules.
- F. Balance the load over phases to within +10% when new circuits are added to new or existing panels. Loading shall be balanced with all lamps operating equipment in operation after the space is occupied.
- G. Provide multi-cable lugs where required. Double lugging shall not be permitted.
- H. Mounting height shall be a maximum of 6 ft-6 in. from floor to top switch unit.
- I. Update directories on existing panelboards where circuiting is changed.
- J. Tests: Open and close load break switching devices under load.

RACEWAYS:

- A. Provide raceways complete with boxes, fittings and accessories. Conduit or tubing sizes referred to in specifications and on drawings are nominal diameters. Minimum diameter shall be 3/4 in. Raceways shall run concealed, except as noted.

B. Materials

- 1) Raceways:
  - a) Rigid steel conduit: full-weight pipe, galvanized, threaded, conforming to UL Standard No.6 as manufactured by Republic Steel, Allied Tube or equal.
  - b) Intermediate metal conduit: shall be hot dipped galvanized steel conforming to UL Standard No. 1242. Conduit shall be as manufactured by Republic Steel, Allied Tube or equal.
  - c) Electrical Metallic Tubing (EMT): thin wall pipe, galvanized, threadless, conforming to UL Standard 797 as manufactured by Republic Steel, Allied Tube or equal.
  - d) Flexible Metal Conduit: Flexible metal conduit shall be single strip, continuous, flexible, interlocked double wrapped steel, galvanized inside and outside, forming smooth wiring channel. Flexible metal conduit shall be as manufactured by Pyle-National, American Flexible Conduit or equal.
  - e) Rigid Aluminum Conduit: full-weight pipe, threaded as manufactured by Republic Steel, Allied Tube or equal.
  - f) Liquidtight Flexible Metal Conduit: shall be similar to flexible metal conduit, but with extruded moisture and oil-proof/sunlight resistant outer jacket of polyvinyl chloride plastic, with a flexible metal core and be as manufactured by Liquidite, Anaconda Sealite or equal.
  - g) Non-metallic conduit and fittings shall be schedule 40 PVC 90°C conforming to NEMA Standard TC2 and UL Standard No. 651. Non-metallic conduit shall be as manufactured by Carlon Electrical Products Co., or equal.
  - h) Wireways: Wireways shall be of the totally enclosed type constructed of cold galvanized steel, minimum No.16 gage, with ground continuity and hinged cover. Provide all fittings, tees, elbows, wire retainers, closure plates, hangers and component parts for a complete installation. Wireways shall be manufactured by Hoffman or equal.
- i) Cable tray shall be of the aluminum ladder type. Cable tray shall be a complete continuous system with all fittings supports and accessories. Cable tray shall be as manufactured by Thomas & Betts, B-Line Systems or equal.
- j) Surface Metal Raceway: Size as noted. Base 0.04 inch, cover 0.25 inch, Material shall be steel. Finish shall be baked enamel. Covers shall be screw-on.
- 2) Fittings and accessories:
  - a) Rigid steel: Rigid steel and intermediate metal conduit fittings, couplings, bushings, locknuts and connectors shall be threaded and galvanized or cadmium plated and shall be as manufactured by O/Z Gedney, Thomas & Betts or equal. Zinc die cast not permitted.
  - b) Electrical Metallic Tubing: shall be galvanized steel compression type with insulated throat and shall be as manufactured by O/Z Gedney, Thomas & Betts or equal. Galvanized rigid steel elbows, 2 in. or larger.



41 FARNSWORTH STREET, 3rd FLOOR  
BOSTON, MA 02210  
617.737.1111 TEL. 617.737.4311 FAX  
Arlington, VA • Boston, MA • Columbus, OH • Minneapolis, MN  
New York, NY • Phoenix, AZ • Philadelphia, PA • Rochester, NY  
Stamford, CT • Worcester, MA

4	3/6/2012	ISSUED FOR PRICING
3	1/27/2012	ISSUED FOR ADDENDUM
2	7/15/2011	ISSUED FOR PRICING
1	7/6/2011	ISSUED FOR PRICING

No.	Date	Description
ISSUE		

PROJECT  
**CITY OF QUINCY  
POLICE HEADQUARTERS  
SERVER ROOM  
COOLING**

DRAWING TITLE  
**ELECTRICAL  
SPECIFICATIONS  
SHEET 1 of 2**

Drawn By	Drawing No.
Checked By	
Date	06/29/2011
Scale	1/8" = 1'-0"
Project No.	B110078-000

**E3.0**

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LOGIN: Lasosky, John  
PLOT DATE: 3/28/2012 5:02 PM  
SAVE DATE: 3/6/2012 6:16 PM

- c) Flexible metal conduit: shall be steel or malleable iron zinc plated with center stop & wedge type with insulated throat as manufactured by O/Z Gedney, Thomas & Betts or equal.
  - d) Bushings: Metallic insulated type.
  - e) For rigid aluminum conduit, provide non-split, threaded copper free aluminum alloy or hot dipped galvanized.
  - f) Liquidtight Flexible Metal Conduit: shall be malleable iron zinc plated suitable for grounding with sealing ring and insulated throat as manufactured by O/Z Gedney, Thomas & Betts or equal.
  - g) Explosion proof type-complying with the Class and type of space.
  - h) Surface metal, raceway, fittings, couplings, supports and boxes shall be manufactured by Wiremold.
  - i) Surface non-metallic raceway, fittings, couplings, supports and boxes shall be manufactured by Wiremold.
  - j) Metal clad type MC, armored cable, and fire alarm cable are to use 2-screw malleable iron, zinc plated connectors. Connectors to be provided with insulated throat and be manufactured by Raco, O/Z Gedney or equal.
  - k) MI cable terminations and splices are to be as manufactured by the cable manufacturer. All splices are to be 2-hour fire rated.
- 3) Boxes:
- a) Concealed Interior Outlet boxes: Except as otherwise required by construction, devices or wiring, boxes shall be stamped steel, 4 in. square or octagon for fixtures. Boxes above ceiling shall be 1-1/2 in. deep. Boxes in ceiling or slab shall be 3 in. deep. Boxes in wall for fixtures shall be 2-3/4 in. deep. Boxes in wall for receptacles and switches shall be 1-1/2 in. deep. Furnish with raised covers and fixture studs where required. Without fixture or device: furnish blank cover. Offset back-to-back outlets with minimum 6 in. separation. Devices shall be manufactured by Raco or equal.
  - b) Interior exposed or surface mounted outlet and junction boxes shall be of cast metal with Threaded Hubs, Killark, O/Z Gedney or Crouse Hinds Condulet Type. Covers shall be cast metal.
  - c) Junction and pull boxes: Galvanized sheet steel with screw-on covers, except as noted. Furnish with insulated supports for cables. Locations shall be as noted or required and accessible. Provide barriers in new and renovated boxes between 120/208 volt and 277/480 volt wiring. Devices shall be manufactured by Hoffman or equal.
  - d) Floor boxes shall be suitable for conduit and devices noted. Raised outlets shall be wiremold Series with above floor fitting. Flush outlets shall be wiremold Series with flush floor fitting. Increase size to suit as necessary. Provide raceways only as herein specified, except as noted. Raceways shall be run concealed, except as noted.
- 4) Provide raceway support utilizing ceiling trapeze, straphangers, or wall brackets. Provide U-bolts at each floor level of riser raceways and connected to acceptable supports. Provide riser clamps at each floor level of riser raceways resting on slab. Spacing of supports shall be a minimum of 10 ft on center for metallic raceway and as required for nonmetallic raceway. Spacing shall be 5 ft on center for wireways and per code and as noted for others. Mount supports to structure masonry with toggle bolts on hollow masonry, expansion shields or inserts in concrete and brick, machine screws on metal, beam clamps on framework, wood screws on wood, and pan through straps in metal deck. Nails, rawl plugs or wood plugs shall not be permitted. Where required by structure, furnish through bolts and fishplates.
- 5) Exposed raceways shall be run parallel with or at right angles to walls. Provide clearance with water, steam or other piping (minimum 3 in. separation from steam and hot water pipes, except 1 in. from pipe cover at crossings and 18 in. for parallel runs). For hung ceiling outlets, run in hung ceiling and connect to ceiling support channels. In masonry and poured concrete, run vertically only.
- 6) Maintain grounding continuity of interrupted metallic raceways with ground conductor, and in flexible conduit for feeders and motor terminal connections.
- 7) Empty raceways over 10 ft long: Provide fish or pull wire, galvanized or nylon rope.
- 8) Raceway and Cable Installation: Rigid steel conduit shall be permitted for feeders and branch circuits. Paint male threads of field-threaded conduit with graphite-base pipe compound and butt conduit ends. Touch up marred surfaces and field-cut threads, CRC-cold galvanized.
- a. Raceways installed exposed in finished areas-surface metal raceway
  - b. Raceways installed in wet or damp areas shall be liquidtight.
- c. Flexible taps from junction boxes above hung ceilings to recessed fluorescent lighting fixtures shall be in flexible metal conduit. Provide minimum 4 ft and maximum 6 ft lengths. For final connection to motor terminal box, transformer and other vibrating equipment: provide with polyvinyl sheathing and ground conductor. Minimum length: 18 in. with slack. Connect ground conductor to enclosure or raceway at each end.
- d. Branch circuit wiring installed concealed in ceilings, furred or stud walls shall be EMT or metal clad cable type MC.
- e. Fire alarm system is to be in a rigid conduit system. Type of conduit system to be as required by locations. Cable installed concealed in ceiling in walls is to be type MC Fire Alarm Cable.
- 9) Cut conduit ends square. Ream smooth. Paint male threads of field threaded raceways with graphite base pipe compound. Draw up tight with raceway coupling.
- 10) Expansion fittings shall be installed at right angles with clip joint centered in expansion joint. Provide a length of run in accordance manufacturer's recommendations. Preset fittings shall allow for temperature variation. For expansion joint crossings, cross at right angles and anchor ends. For raceway not in slab, provide flexible conduit with external bonding jumper strip. In slab, provide O.Z. Type "AX" or Appleton type "XJ" or "XJF" with ground continuity.

- D. Erect wall and switch outlets in advance of furring and fireproofing. Outlet boxes shall be set square and true with building finish. Secure to building structure by adjustable strap iron or grout in with masonry. Verify outlet locations in finished spaces with architectural drawings of interior details and finishes. Provide barriers between switches connected to different phases for voltages exceeding 150 volts to ground.
  - E. Panel, junction and pull boxes shall be located clear of other trades. Conceal junction and pull boxes in finished spaces. Where necessary, reroute raceways or make other arrangements for concealment. Boxes shall be accessible. Provide access doors as required for accessibility. Support boxes from building structure, independent of conduit. Provide floor-to-ceiling channels for mounting on drywall and lightweight construction. Outlet boxes for fixtures recessed in hung ceilings shall be accessible through opening created by removal of fixture. Secure to black iron support. Motor terminal boxes: coordinate with motor branch circuit conduit and wiring; add box volume where required.
  - F. Fire sealants: Provide for raceways and wire passing through floor slots, sleeves or openings in fire-partitions.
  - G. Perform continuity tests of resistance of feeder conduits from service to point of final distribution using 1 conductor return. Maximum resistance shall be 25 ohms.
12. WIRE AND CABLE:
- A. Provide wire and cable complete with accessories. Size reference shall be AWG except as noted.
  - B. Conductors shall be copper, ASTM standard solid (No. 10 and smaller) or stranded (No. 8 and larger). General use cabling shall be No. 12 minimum. At 120 volts and over 100 ft circuit length, provide No. 10 minimum. At 265 volts and over 200 ft circuit length, provide No. 10 minimum.
  - C. Control and alarm cabling, except as noted, shall be No. 14 minimum. At 120 volts and over 200 ft circuit length, provide No.12 minimum.
  - D. Other voltages and phases: adjust cable sizing as required to maintain code acceptable voltage drop. Increase raceway sizes for larger wire as required.
  - E. Insulation shall be rubber and thermoplastic meeting ASTM and IECA standards. Type THHN/THWN shall be utilized for feeders and branch circuits except as noted. SFF-2 shall be used for branch circuits located in wiring channels of continuous fluorescent fixtures and in ambient temperatures over 90 Deg. C rated for 600V. Underground service entrance cabling shall be TYPE XHHW/XHHW-2. Provide cross-linked polyethylene insulation (Type XHHW) in exterior locations including underground non-service cables.
  - F. Metal-clad cable (MC) with ground wires shall be utilized as described in "Raceway and Cable Installation". When used in lieu of wiring in conduit, state in proposal that price is based upon the use of MC cable. BX cable shall not be used. Metal clad type MC cable is to have galvanized steel armored jacket with solid copper conductors in sizes #12 AWG through #8 AWG and stranded for conductor #6 AWG through #1 AWG. An insulated internal green ground conductor is to be provided. Interior conductors are to be wrapped with a moisture and fungi resistant paper. MC cable is to be as manufactured by AFC or equal.
  - G. Fire alarm cable is to be type MC cable with a galvanized steel red armored jacket. Conductors are to be solid copper in sizes #18 AWG and #16 AWG with two to eight conductors per cable. Twisted shield pairs are to be sizes #18 AWG and #16 AWG per cable. Insulation is to be type TFN rated for 105 degrees C for a power limited fire protective signaling cable applications. Provide an insulated ground conductor. Cable to be rated for 600V. Fire alarm cable to be as manufactured by AFC or equal.
  - H. Color coding shall be as follows:
    - 1) 120/208 volt system:
      - Black for A phase
      - Red for B phase
      - Blue for C phase
    - 2) Neutral wire shall utilize white outer covering throughout. Equipment ground wire shall utilize green outer covering throughout.
    - 3) Where color-coded cable is not available, certify in writing and request permission to overlap conductors with 6 in. of color taping in accessible locations.
  - I. Provide flameproof linen or fiber tags in accessible locations. For feeders indicate feeder number, size, phase and points of origin and terminations. For control and alarm wiring, indicate type (control or alarm), size of wire, and points of origin and terminations. Similar to Stranco Products, Inc.
  - J. Terminations, splices and taps under 600 volts: Copper conductors No. 10 and smaller shall utilize compression-type of twist-on spring-loaded connectors and clear nylon-insulated covering. Copper conductors No. 8 and larger shall utilize mechanical bolted pressure or hydraulic compression type using manufacturer's recommended tooling. Cable lugs and connectors shall utilize compression type of same metal as conductor. Provide to match cable, with marking indicating size and type. Copper lug connections to bus bars: use antiseize compound on tang.
  - K. Not more than 3 lighting or convenience outlet circuits shall be installed in one conduit unless otherwise indicated. If more than three circuits, derate wire current carrying capacity and maintain code requirements on conduit fill. Neutral conductor shall be counted as a current carrying conductor. Submit to engineer for review prior to installation.
  - L. Pull no thermoplastic wires at temperatures lower than 32 deg F. Provide separate raceways for conductors of normal and emergency, 120/208 and 277/480 volt systems, except 480 volt motor branch circuit wiring and related 120 volt control wiring. Thermoplastic wires shall not be installed in computer area raised floors.
  - M. Leave wires with sufficient slack to permit making final connections.
  - N. Perform continuity and insulation tests. Megger test 100 percent of feeders, 10 percent of branch circuits and motor branch circuits over 25 hp. Perform tests prior to connecting equipment and in presence of authorized representatives. Submit written report of results. Correct or replace cable testing below manufacturer's standards.

13. GROUNDING
- A. An equipment grounding conductor commonly described as a "green wire" shall be provided for all branch circuits protected by overcurrent devices except for lighting branch circuits. Green wire ground shall also be provided for flexible conduit and motor circuits. Metallic raceway continuity shall be maintained with a bare No. 8 wire. Where isolated grounding branch circuits are used, provide a separate and distinctly marked green ground wire. Each Grounding conductor shall serve a maximum of three circuits/poles.
  - B. Service and equipment:
    - 1) For separately derived services or service switches, ground the neutral conductor through disconnecting link and ground terminal to water service ground clamp and building steel or driven ground rods in exterior installations.
    - 2) Ground the center tap of Y-connected transformers through secondary neutral and ground bus to water service ground clamp or building steel.
    - 3) Ground clamps shall be bronze, solderless type with bronze screws, suitable for receiving noted conductors. Mount ground clamp on water service at street side of main service valve. Provide jumper to by-pass water meter.
  - C. Run insulated ground conductors in rigid steel conduit or EMT with conductor connected to conduit, through ground fitting at each end.
  - D. Ground noncurrent carrying metal parts of distribution panels, switchboards, transformer enclosures, raceways, busway enclosures, controller enclosures, motor frames and other electrical equipment.
  - E. Miscellaneous:
    - 1) Ground the following:
      - a) Telephone system.
      - b) Fire alarm system.
14. POWER WIRING
- A. Provide all power wiring to all motors and equipment furnished under all contracts on the project. Include extensions from controllers to motors and motor connections. Mount and wire all contactors and power devices furnished under all contracts.
15. CONTROL WIRING
- A. Provide all control wiring for motors and equipment furnished under all contracts and as specifically shown on the drawings, except as noted for mechanical/plumbing equipment. Include mounting and wiring of all control devices furnished with equipment.
  - B. Control wiring less than 120 volts for motors, alarms for equipment furnished under mechanical/plumbing will be provided under mechanical/plumbing specifications.
16. DEVICES:
- A. Provide complete material and accessories as noted by Leviton, Hubbell, or equal.
  - B. Local wall switches shall be specification grade, totally enclosed, toggle, quiet type, rated 20 amp, 120/277 volt, AC. All switches shall be ganged with multi device plates. In areas where dimmers are specified with wall switches: all switches shall match dimmer series and shall be ganged together. Switches shall have screw type terminals and shall be of the white phenolic compound finish, unless otherwise directed by the Architect (coordinate with Architect prior to bid). Toggle switches shall be manufactured as follows:
    - 1) 20A, 120/277V Single Pole, Hubbell No. HBL 12211
    - 2) 20A, 120/277V Double Pole, Hubbell No. HBL 12221
    - 3) 20A, 120/277V Three Way, Hubbell No. HBL 12231
    - 4) 20A, 120/277V Four Way, Hubbell No. HBL 12241
    - 5) DIMMER SWITCHES: LUTRON NOVA T SERIES
  - C. Receptacles shall be minimum specification grade type duplex convenience 125 volts, 2 NEMA, 3 wire, U ground slot. Grounded, except as noted. Meeting NEMA standards, publication WD-6. Receptacle finish shall be of the white phenolic compound type unless otherwise directed by the Architect (coordinate with Architect prior to bid). Receptacle shall be manufactured as follows:
    - 1) 20A, 120V Standard Duplex, Hubbell No. HBL 2162WA
    - 2) 20A, 120V Isolated Ground Duplex, Hubbell No. IG-2162
    - 3) 20A, 120V Ground Fault Duplex, Hubbell No. GF-5362W
  - D. Device plates: Coordinate with Architect for type. For receptacles other than 120 volt, inscribed voltage available.
    - 1) Brushed 302 stainless steel with engraved circuit identification plate.
    - 2) Reinforced thermoplastic by same manufacturer of devices.
    - 3) All device plates shall be have an approved label (Dymo or equal) with its panelboard of origin and circuit designation. Label shall be located on device plate and inside receptacle box.
  - E. Colors: Coordinate colors with Architect.
  - F. Mounting orientation of receptacles (horizontal or vertical): Coordinate with Architect.
17. ELECTRICAL TESTING
- A. Provide all necessary meters, instruments, temporary wiring and labor to test and adjust all equipment and wiring installed and/or connected under this contract, including electrical equipment furnished by others, to determine proper polarity, phasing, freedom from grounds and shorts and operation of equipment. All measuring instruments must be properly calibrated.
  - B. Whenever the authorities having jurisdiction require that any work be tested or approved, Contractor shall provide proper facilities for access for inspection.
  - C. Check all lighting fixtures and receptacles for proper operation.

- D. Motors:
    - 1) Make the following tests on the motors before starting up:
      - a) Check motor nameplate for horsepower, speed, phase and voltage.
  - E. Check all system and equipment grounds for proper value of resistance using the Megger ground tester in accordance with manufacturers standard instruction. Test insulation resistance of all new and affected existing feeders prior to energizing.
18. FIRE STOPPING
- A. Drawings and general provisions of contract, including general and supplementary conditions and division specification sections, apply to work of this section.
  - B. Provide all required fire-stopping. Work includes fire stopping penetrations of fire-resistance rated floors, walls and partitions in new construction, as well as pre-existing penetrations in renovation areas of existing construction.
  - C. Product data: Submit manufacturer's product data for each fire-stopping produce required, including instructions for substrate preparation and fire-stopping installation.
  - D. Fire resistant joint sealers: Provide manufacturer's standard fire-stopping sealant with accessory materials, having fire resistance ratings indicated as established by testing identical assemblies per ASTM E814 by Underwriters Laboratory, Inc. or other testing and inspecting agency acceptable to authorities having jurisdiction.
  - E. Materials - Provide the following:
    - 1) One-part fire-stopping sealant: One part latex based intumescent sealant formulated for use in a through-penetration fire-stop system for sealing openings around cables, conduit, pipes and similar penetrations through walls and floors. Acceptable products/manufacturers include the following:
      - a) Spec Seal LC150 Series
      - b) Hill FS One
19. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS
- A. Submit written certification that electrical systems are complete and operational. Submit certification with Contractor's request for final review.
    - 1) At the time of final review of electrical work, demonstrate the operation of electrical systems. Furnish labor, apparatus and equipment for systems' demonstration. The various tests shall be witnessed by the Building Manager or his Representative.
  - B. The Contractor shall furnish all test equipment, materials, labor, and temporary power hook-ups to perform start-up and all tests as required obtaining final field acceptance from Building Manager. All tests shall be conducted in the presence of the Building Manager or his Representative. All test procedures shall conform to this specification and applicable standards the ANSI, IEEE, NEMA, OSHA, NEPA, etc.
  - C. The Contractor shall be responsible for all tests and test record. Testing shall be performed by and under the immediate supervision of the Contractor. Test record shall be kept for each piece of equipment. Copies shall be furnished to the Engineer for review and/or approval.
  - D. A visual inspection of all electrical equipment, to check for the foreign material, tightness or wiring and connection, proper grounding, matching nameplate charts with specification, etc., shall be made prior to actual testing.
  - E. A complete operational test shall be made on the revised life safety fire alarm system. The Contractor shall consult with the equipment vendors and then submit for approval a step-by-step procedure describing the method of making the tests, the equipment to be utilized and the feature to be checked by the test. All interlocks and protective features shall be checked out.
20. SPECIAL ENGINEERING SERVICES
- A. In the instance of complex or specialized electrical systems such as emergency system, fire alarm or similar miscellaneous systems, the installation, final connections and testing of such systems shall be made under the direct supervision of competent authorized service engineer who shall be in the employ of the respective equipment manufacturer.
  - B. Any and all expenses incurred by these equipment manufacturers' representatives related to this project, shall be borne by the Electrical Contractor.

**A K F**

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4	3/6/2012	ISSUED FOR PRICING
3	1/27/2012	ISSUED FOR ADDENDUM
2	7/15/2011	ISSUED FOR PRICING
1	7/6/2011	ISSUED FOR PRICING

No.	Date	Description
ISSUE		

PROJECT  
**CITY OF QUINCY  
POLICE HEADQUARTERS  
SERVER ROOM  
COOLING**

DRAWING TITLE  
**ELECTRICAL  
SPECIFICATIONS  
SHEET 2 of 2**

Drawn By	Drawing No.
Checked By	
Date	06/29/2011
Scale	1/8" = 1'-0"
Project No.	B110078-000

E3.1