

SCOPE OF WORK
FOR THE INSTALLATION, REPAIR AND PREVENTIVE MAINTENANCE OF GAS-FIRED
HEATING PLANTS, GAS-FIRED HOT WATER HEATERS AND ANCILLARY EQUIPMENT

1. ABBREVIATIONS USED IN THIS DOCUMENT:

- 1.1 “BMP” shall mean the Bureau of Maintenance Procurement, a subdivision of the Department’s Emergency Operations Division.
- 1.2 “ERP” shall mean the Emergency Repair Program, a subdivision of the Department’s Emergency Operations Division.
- 1.3 “DAR” shall mean the City’s Department of Air Resources.
- 1.4 “DEP” shall mean the City’s Department of Environmental Protection.
- 1.5 “DOB” shall mean the City’s Department of Buildings.
- 1.6 “ARA” shall mean Alteration Repair Application.
- 1.7 “MEA” shall mean Materials, Equipment and Acceptance.

2. OVERVIEW:

- 2.1 Contractor is responsible for the installation, repair, and preventive maintenance of Gas-Fired Heating Plants, Gas-Fired Hot Water Heaters, and ancillary equipment (the “Work”), as well as all work preparatory to such Work (except asbestos testing and abatement work), in vacant and/or occupied, City-owned and/or privately owned buildings, as designated by the Department. Contractor shall perform all necessary construction, reconstruction/restoration, removals, cuttings, repairs, patching, replacements, etc., and provide all materials, labor, tools, services and equipment required to perform the Work.
- 2.2 Time shall be of the essence with respect to the performance of any aspect of this contract. Contractor shall ensure that all work:
 - (A) Is completed in accordance with all terms of this Scope, the Contract and all appurtenant attachments thereto.
 - (B) Is performed in compliance with all applicable codes, laws, regulations and requirements; that all required filing, registration, application and any other submission is completed; and that any required permits, approvals or any other endorsements are received.
 - (C) Is completed in a timely and expeditious manner.

- 3. WORK ORDERS:** All Work Orders will be placed either by telephone (followed by faxed, emailed or mailed written Confirmation of Award) or by faxed, emailed or mailed written Confirmation of Award. The possession of a working telephone and fax machine is, therefore, a requirement for award of this Contract. The Confirmation of Award shall indicate a written authorization to proceed with the ordered work. Upon telephone, emailed, mailed or faxed notice to Contractor (“First Notice”), Contractor shall

commence work at the site. The cost of performance and payment security, if required for a particular Work Order, will be paid by Contractor and reimbursed by properly documented payment request.

4. COMPLETION AND RESPONSE TIME:

4.1 COMPLETION OF HEATING PLANT REPLACEMENTS:

- (A) The Department shall set start and completion dates for heating plant replacements. The total time allotted for each replacement, after issuance of permit, is as follows:
 - (I) Under 1,500 sq. ft. – three (3) calendar days.
 - (II) More than 1,500 sq. ft. – five (5) calendar days.
- (B) The time allowed is exclusive of any required asbestos testing and abatement work, which will be performed by another contractor prior to the start date. The time allowed is for a typical replacement; the Department will give due consideration for unusual circumstances and / or additional work when setting actual completion dates.
- (C) Prior to proceeding with the installation, Contractor shall confirm the Work Order, prepared by BMP, by indicating on the Work Order the total price based on the itemized bid prices, and signing and returning the Work Order to BMP. Contractor may proceed upon BMP's written or verbal approval.
- (D) In cases where the Department decides that temporary heat is required, the Department shall assume the cost of providing such service until such time as the Work Order is completed. The Department reserves the right to choose the means of providing temporary heat. Should Contractor fail to complete the work within the agreed upon timeframe, and should the Department decide that a time extension is not warranted, Contractor shall be liable for the Department's cost of providing temporary heat for the number of days beyond the established deadline. If the Department decides, in its sole discretion, not to continue providing temporary heat, Contractor may be assessed liquidated damages in accordance with Article 20 of the Agreement, until work is completed.

4.2 RESPONSE TIME FOR HEATING PLANT REPAIRS:

- (A) Heat Season – From October 1st through May 31st: Within two (2) hours after issuance (on weekdays, weekends and holidays) of a Work Order orally or in writing by the Department, Contractor shall report to the site with a qualified mechanic or team and immediately begin the necessary repairs, provided that Contractor estimates that the cost of the work will not exceed one thousand five hundred dollars (\$1,500.00). If Contractor cannot restore service within five (5) hours of issuance of Work Order,

Contractor must inform BMP by telephone, followed by faxed or written notice.

- (B) Non-Heat Season – From June 1st through September 30th: Within twenty-four (24) hours after issuance of a Work Order orally or in writing by the Department, Contractor shall report to the site with a qualified mechanic or team and immediately begin the necessary repairs, provided that Contractor estimates that the cost of the work will not exceed one thousand five hundred dollars (\$1,500.00). When the twenty-four (24) hour deadline extends into a weekend or holiday, Contractor must respond no later than 10:00 a.m. of the next business day, unless the Department determines that an emergency condition exists and an immediate response is needed.
- (C) In all cases, Contractor must submit to BMP a description of the Work to be performed.
- (D) In all cases, Contractor must notify BMP and secure approval before proceeding with the repairs if Contractor estimates that the cost of the Work will exceed one thousand five hundred dollars (\$1,500.00). If Contractor proceeds with work estimated to exceed one thousand five hundred dollars (\$1,500.00) without approval, Contractor may not be paid more than one thousand five hundred dollars (\$1,500.00) at the Department's sole discretion.

4.3 HEATING PLANT SURVEYS: Heating Plant Surveys shall be completed within thirty (30) days of award.

5. TELEPHONE COVERAGE AND STAFFING:

5.1 The staffing of a telephone as required by this Section shall mean that an authorized dispatcher qualified and authorized to accept and execute requests for repairs and installations is available by telephone. Contractor may not use an answering machine or service to fulfill these requirements.

5.2 Heat Season – From October 1st through May 31st:

- (A) Contractor must have a telephone staffed continuously, including lunch hours, in order to confirm Contractor's receipt of Work Orders and must also have qualified staff available for repairs and installations on weekdays from 8:00 A.M. to 7:00 P.M. and on Saturdays, Sundays, and holidays, from 8:30 A.M. to 4:00 P.M.
- (B) Emergency Response: The Department reserves the right to require that Contractor provide additional coverage as needed when an emergency exists, as determined by the Department.
 - (I) Contractor shall provide the Department with an emergency telephone number for use during the hours when telephone

coverage is not required. Such number shall be answered twenty-four (24) hours a day.

- (II) Contractor shall respond to any emergency call within one and one-half (1 1/2) hours by dispatching a qualified burner mechanic to a designated site.

5.3 Non-Heat Season – From June 1st through September 30th: Contractor must have a telephone staffed at all times, including lunch hours, during regular business hours. Contractor must also have qualified staff available for repairs and installations on weekdays, excluding holidays, from 8:00 A.M. to 5:00 P.M.

5.4 Identification of Mechanics:

- (A) Upon request, Contractor must supply to the Department the names of all the mechanics, including subcontractors and their principals and personnel, any written agreements between the contractor and subcontractor regarding this contract, who will perform the installation, repairs and preventive maintenance of oil fired heating plants to the City of New York.
- (B) This information must be supplied within ten (10) days of the date of request and must be updated for each new mechanic during the course of the contract.

6. **SERVICE CHARGES:** If Contractor cannot gain access to a building or apartment to perform the work after two (2) attempts, the Department will permit Contractor to bill the Department for a Service Charge of three hundred dollars (\$300.00), which invoice may be submitted after the second unsuccessful attempt, if (i) Contractor responded with a qualified mechanic or heating team within the time required by this Scope of Work, and; (ii) Contractor duly notified the Department within one hour of Contractor's first unsuccessful attempt to gain access to the building or apartment and; (iii) Contractor provide the Department with the name(s) of Contractor's employee(s) responding to the request. When Contractor is unable to gain access, Contractor shall not return to the job site until the Department notifies Contractor that access has been arranged. In the event that Contractor returns to the job without such notification, the Service Charge shall not be paid.

7. **GEOGRAPHIC AREA OF RESPONSIBILITY:** Contractor shall act as Primary and Secondary Contractor, respectively, for the areas specified as such below, pursuant to the procedures set forth in Section 10 below. Contractor shall be paid in accordance with the bid prices for all work, whether in the Primary or Secondary areas of responsibility.

Primary Contractor	Secondary Contractor
Manhattan and The Bronx	Brooklyn, Queens and Staten Island

8. ALTERNATIVE VENDOR PROCEDURE:

- 8.1 The Department recognizes that the size of the geographical areas, the number of potential sites, and the 'time is of the essence' requirement could create short-term surges in demand that Contractor may be unable to handle in a timely manner as determined by the Department in its sole discretion. Additionally, other circumstances may arise in which no contract/contractor of preceding priority is available. The Department therefore implements the Alternative Vendor Procedure.
- 8.2 Within one (1) hour of receipt by Contractor of the Department's First Notice, Contractor may inform the Department by telephone at (212) 863-7764 or in writing delivered to the Director of BMP, that Contractor is unable to perform the services requested in said notice, due to prior obligations under this Agreement ("Notice of Non-Acceptance of Work"). If the Notice of Non-Acceptance of Work is by telephone, Contractor shall immediately follow this telephone notice with a written or faxed notice, addressed as set forth above, identifying the Work Order, stating that Contractor is unable to perform the services required and enumerating all other work currently being performed for the Department.
- 8.3 Upon timely receipt of a Notice of Non-Acceptance of Work from the Primary Contractor, or when the Department otherwise determines that the Primary Contractor cannot handle the work or that no contract/contractor of preceding priority is available, the Department may give notice to the Secondary Contractor. The Secondary Contractor may return a Notice of Non-Acceptance of Work in accordance with Paragraph 10.1, above.
- 8.4 Upon timely receipt of a Notice of Non-Acceptance of Work from the Secondary Contractor, or when the Department otherwise determines that the Secondary Contractor cannot handle the work or that no contract/contractor of succeeding priority is available, the Department may, in its sole discretion, issue a Final Demand Notice to the Primary Contractor, as set forth in Section 11 below.

9. FAILURE TO PERFORM:

- 9.1 In the event that the Department exhausts its rights under the Alternative Vendor Procedure, is unable to procure the necessary performance, and determines in its sole discretion that an emergency situation exists, the Department shall notify the Primary Contractor by telephone or in writing of a Final Demand for performance ("Final Demand Notice"). Upon receipt of a Final Demand Notice, the Primary Contractor's failure to commence performance of the work within the response time specified in Section 6 above, shall immediately subject the Primary Contractor to either, or both of the following:

9.2 The accrual of Liquidated Damages in accordance with Article 21 of the Agreement

9.3 The exercise of default provisions as set forth in Article 18 of the Agreement.

10. WORK BY OTHERS: Contractor shall not subcontract any of its obligations hereunder without the prior written approval of the Department. Further, the Department's approval of a subcontractor does not relieve Contractor of any of its responsibilities, duties, or liabilities under the Agreement. Prior to approval to subcontract, Contractor shall provide to the Department any documents and/or information deemed necessary by the Department for approval of the proposed subcontractor(s). The Department reserves the right to revoke approval to subcontract at any time during the Contract term.

11. PERMIT REQUIREMENTS AND CONFORMANCE WITH LAW:

11.1 Contractor shall obtain and provide, as required, the following:

- (A) Boiler numbers,
- (B) DAR numbers,
- (C) MEA numbers,
- (D) All necessary filings with DOB,
- (E) All other permits, utility layouts or approvals required.

11.2 ALL MATERIALS SHALL CONFORM TO THE LATEST ASME, FEDERAL OR LOCAL AGENCIES' SPECIFICATIONS. IN ALL CASES, THE STRICTEST REQUIREMENTS SHALL APPLY. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR ALL MATERIALS STORED ON SITE.

11.3 All work and materials used under this specification shall meet all applicable requirements as set forth by the City's Building Code and by all other agencies having such jurisdiction.

11.4 All plumbing work shall be performed by, or under the supervision of, a plumber licensed by the City, as required by applicable codes.

11.5 All electrical work shall be performed by, or under the supervision of, an electrician licensed by the City, as required by applicable codes.

11.6 Contractor is required to perform all work in compliance with all Local, State and Federal Laws, rules and regulations; shall obtain all required Municipal permits, final Inspection Certificates; and shall test to ensure complete legalization of new heating plants and repairs.

- 11.7 Contractor shall incorporate into their bid prices the costs/fees imposed by Local, State and Federal agencies for filings. No such costs or fees will be separately reimbursable.
- 11.8 ARA Permit Work – Paperwork shall be delivered to the ERP Administration Office at 100 Gold Street, within forty-eight (48) hours after award. The Department will process ARA Filings with DOB.
- 11.9 Long-Form Filing – Paperwork shall be started and a pre-filing shall be at DOB within two (2) weeks of award of job for a new heating plant.
- 11.10 Contractor shall supply all Permits (and signoffs if available) with the invoice package to CCAP and shall also fax the same to the Site Office so that payment can be approved. If signoff by DOB is not available at time of payment package submission, payment will be reduced by \$500. After signoffs are submitted subsequently, such reduction will be paid to Contractor.
- 11.11 All energy-using products for which the United States Environmental Protection Agency and the United States Department of Energy have developed energy efficiency standards for compliance with the Energy Star program shall be ENERGY STAR labeled.

12. GENERAL PROVISIONS GOVERNING ALL WORK:

12.1 GENERAL:

- (A) Contractor shall ensure compliance with all rules and regulations set forth by the Department.
- (B) All work shall be done under the supervision of, and as directed by the Department. The Department retains the right at any time to examine and supervise the work performed under this Agreement without notice to Contractor.

12.2 TENANT CONSIDERATIONS:

- (A) Contractor shall, at all times, be responsible for minimizing inconvenience to tenants, protecting their life and property, and maintaining the work area in a clean and habitable condition. If the work requires substantial disruption, Contractor shall be responsible for informing the Department of the time and extent of the disruption prior to commencement of the work and shall obtain approval from the Department to perform the work.
- (B) No heating plant shall be rendered inoperative for a period exceeding eight (8) hours without prior written permission from the Department.
- (C) Contractor shall not cause there to be fewer than two (2) safe entrance and egress routes from the building at all times.

12.3 PROTECTION OF WORK AND WORKSITE:

- (A) Contractor shall provide all necessary cover to afford adequate protection of areas exposed to weather as a result of the work under this Contract.
- (B) Contractor shall take all necessary precautions to protect the structure, adjoining surfaces and personal property.
- (C) Contractor shall repair and/or replace materials and finishes damaged as a result of any work under this Contract. Painting is included. All new work shall be equal to adjacent surfaces.
- (D) All work and material required by these specifications shall be fully protected against damage from any source. Without expense to the City, Contractor shall replace or pay for any material or work damaged or lost by any cause whatsoever, including theft or vandalism, before final acceptance of the work.

12.4 WORKSITE ORDER AND CLEANLINESS:

- (A) Contractor is responsible for receiving, unloading, hoisting and distributing all material associated with this trade.
- (B) Upon application to the Department by Contractor and if available, space may be assigned to Contractor in certain areas of the building pertaining to an individual Work Order. Materials may be stored only in the designated area(s) and only until the completion of that Work Order. Contractor shall keep all such areas clean and free from rags, waste and debris.
- (C) Contractor shall protect floors with suitable coverings and shall not use any plumbing fixture or waste pipe for the disposal of any waste paints, oils or other materials.
- (D) UNLESS OTHERWISE STATED, CONTRACTOR SHALL HAVE FULL RESPONSIBILITY AND ASSUMES ALL RISK FOR ALL MATERIALS STORED ON SITE. The Department assumes no responsibility for the adequacy of the spaces assigned or the safekeeping of the material stored.
- (E) CONTRACTOR SHALL REMOVE FROM THE SITE ALL ITEMS REQUIRED TO BE REPLACED, WITHOUT HINDERING PUBLIC SAFETY AND FLOW OF TRAFFIC. THE DEPARTMENT RESERVES THE RIGHT TO SPECIFY DELIVERY POINTS OF ITEMS CONSIDERED SALVAGEABLE. DEMOLITION, REMOVAL, LEGAL DISPOSAL AND PROVISION ARE ALL INCLUDED IN EACH ITEM OF WORK TO BE PERFORMED.
- (F) Contractor shall not allow any materials whatsoever to be thrown from roofs or windows. Contractor shall erect any conveying devices necessary for the safe disposal of debris from upper floors to the street.

- (G) Contractor shall be responsible for all clean up and proper disposal of debris resultant from the work under this Contract. All materials, debris, rubbish, etc., resulting from such work shall be removed from the premises in an orderly and lawful manner at the end of each day. Contractor shall clean all adjoining surfaces of smudge, dirt, grime, etc. resulting from the work and shall broom sweep all affected areas at the end of each workday.
- (H) Should a harmful dust hazard be created in performing the repair work of this contract, for the elimination of which appliances or methods have been approved by the Board of Standards and Appeals of the State of New York, such appliances and methods shall be installed, maintained, and effectively operated during the continuance of such harmful dust hazard. Failure to comply with this provision after notice shall make this contract void.
- (I) Upon completion of the work, or when directed by the Department, Contractor shall thoroughly clean all surfaces of all rooms and spaces, including all exterior areas, which have become soiled as a result of work of Contractor.

12.5 PREPARATION FOR WORK:

- (A) Contractor shall coordinate all work required with plumbing, electrical and general construction contractors as required for proper completion of work.
- (B) CONTRACTOR SHALL BEGIN ANY WORK TO BE PERFORMED ONLY UPON VERBAL OR WRITTEN CONFIRMATION OF AWARD OF WORK ORDER FROM THE DEPARTMENT. ALL WORK SHALL BEGIN AND CONTINUE ON A FULL TIME BASIS AS PER THE START AND COMPLETION DATE ESTABLISHED BY THE WORK ORDER.
- (C) CONTRACTOR SHALL NOTIFY THE DEPARTMENT WITHIN TWENTY-FOUR (24) HOURS OF COMMENCEMENT OF WORK AS INDICATED IN THE WORK ORDER.
- (D) AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE COMMENCEMENT OF HEATING PLANT REPLACEMENT OR MAJOR REPAIRS IN CITY-OWNED BUILDINGS, CONTRACTOR SHALL POST NOTICE OF THE PLANNED WORK IN THE PUBLIC HALL INSIDE THE FRONT DOOR OF THE BUILDING, AT THE VESTIBULE OR IN THE MAILBOX RECEPTACLE AREA.

12.6 SUBSTITUTIONS/CHANGES:

- (A) Contractor shall obtain prior written approval from the Department for changes, additions or modifications to the Scope of the Work, before such work is performed. **IF CONTRACTOR OBSERVES WORK REQUIRED**

WHICH EXCEEDS THE SCOPE OF A GIVEN WORK ORDER, CONTRACTOR SHALL ADVISE ERP BY EMAIL OR FAX OF THE ADDITIONAL WORK REQUIRED PRIOR TO COMMENCEMENT OF THE WORK. A HEATING TEAM WILL MEET CONTRACTOR IN THE FIELD THE NEXT MORNING TO VERIFY THE SCOPE OF WORK.

- (B) References in the Contract documents to materials, forms of construction, products and equipment by proprietary name, make or catalogue number shall be interpreted as establishing a standard of quality of manufacture, performance or appearance, and shall not be construed as limits to competition.
- (C) Should Contractor desire to substitute any item, brand or manufacturer other than that specified, Contractor shall call the Department site office indicated on the particular Work Order to submit a written request for approval of the substitutions, together with the work description prior to commencing work. Such requests shall be accompanied by descriptive literature, drawings, samples or such information as ERP directs, for each item proposed as a substitute. All such proposed substitutions shall be the standard product of a recognized manufacturer. ERP will investigate such requests and render decisions as promptly as is reasonably possible, and such decisions shall be final.

12.7 SPECIFICATIONS FOR MATERIALS:

- (A) **ALL MATERIALS USED FOR INSTALLATION SHALL BE NEW EXCEPT WITH PRIOR WRITTEN APPROVAL FROM THE DEPARTMENT.**
- (B) Where applicable, all parts shall be UL Listed.
- (C) All parts must be installed as per manufacturers' specifications.
- (D) Under no circumstances shall Contractor use Asbestos-containing material under this Contract.
- (E) When used in this Contract, the words "or the Department approved equal" shall be taken to mean that for work under the Contract Contractor shall use only the item or product specified unless prior written permission is obtained from an authorized representative of the Department. In such cases, a substitute item/product will be authorized only if it performs its intended function exactly as per the specifications of the preferred item, and only if Contractor guarantees said performance in writing.

12.8 THE WORK – GENERAL:

- (A) Contractor shall furnish the daily services of an experienced superintendent who shall oversee the erection of the systems and equipment. In addition, the superintendent shall oversee all skilled

workers, helpers and laborers utilized in unloading, transferring, erecting, connecting, adjusting, starting, operating and testing the system.

- (B) Before layout of any work, Contractor must determine exact dimensions and location of all materials and equipment in the field.
- (C) This Contract is intended to secure the provision of all material and labor for the work described herein, including all required incidental work necessary to make the work complete, operational and ready for use. Except where specified by the Department, it shall be understood that everything necessary for the full and complete execution of the work according to the general intent and meaning of these specifications, shall be done and all materials furnished so as to complete the work in a good and workmanlike manner, whether herein particularly described or not.
- (D) Where additional or supplemental details or instructions are required to complete an item or items of work, ERP shall furnish the necessary information to Contractor. Until such information is furnished, no work shall be performed, installed or fabricated which depends upon such information. The furnishing of such data shall not be the grounds for a claim for extra work by Contractor for the installation; Contractor is deemed to have allowed for the completing of such work in his bid, consistent with adjoining or similar details and/or the best accepted practices of the trade whichever is more expensive. In this regard, ERP's decision shall be considered final.
- (E) All workmanship shall be first class in every respect and shall be performed by fully experienced workers in accordance with best current practices of the trade as set forth by bona fide and recognized professional trade organizations and institutes.
- (F) Concrete work under this specification shall be installed only when surrounding temperatures are above forty degrees Fahrenheit (40°F). All concrete shall be "Air Entrained".
- (G) Contractor shall install all work and materials in such a manner and at such time to reduce cutting and patching to a minimum. Contractor shall obtain approval from the Department in advance for the locations of any outlets, switches, fixtures, etc.
- (H) Once definite locations have been determined, Contractor shall be responsible for setting and maintaining sleeves, inserts, bolts, anchors, plates, outlets, etc. necessary or incidental to the work.

12.9 BOILER AND HOT WATER BREECHING:

- (A) Smoke breeching and smoke connections shall be constructed of galvanized steel.

- (B) Draft hoods to be used shall be American Gas Association (A.G.A.) Certified Design.

12.10 PIPING:

- (A) All steam, condensate, and drip piping shall be Schedule 40 black steel, with 125# cast-iron steam pattern screwed fittings.
- (B) Steam and Return Line Connection: Contractor shall furnish and install full sized steam headers and connect them to the existing steam supply mains. All connections shall provide pressure-equalizing connections and Hartford Loop with a hose cock. This work must be done in compliance with boiler manufacturers' recommendations for corresponding boiler size.
- (C) All cold and hot water piping shall be type K or L copper tubing with 95-5 solder fittings per the City's Building Code Requirements.
- (D) Contractor shall furnish and install all necessary sleeves for pipe chases and provide patching/restoration as necessary.
- (E) Contractor shall tag all piping and equipment installed for identification purposes.

12.11 GAS PIPING:

- (A) Work shall be performed by a plumber licensed by the City, in a neat manner, in accordance with the best practices of the trade and in compliance with the latest regulations and requirements of the applicable utility company.
- (B) Whenever necessary, Contractor shall coordinate installations and repairs with the applicable utility company.
- (C) Contractor shall secure the exact location of gas services (at property line) from the appropriate utility company.
- (D) Gas supply piping shall be new adequately sized Schedule 40 gas supply piping run overhead between the main service entrance and burner per the City's Building Code.
- (E) Unless otherwise specified, the gas service lines shall pitch toward street mains where possible. Otherwise, they shall be pitched toward the building and be provided with drip leg and plugged outlet.
- (F) The meter is furnished by the applicable utility company. Contractor shall provide all equipment and materials not furnished by the utility company, which are required to make this service complete.
- (G) Necessary filing, and costs therefor, shall be included in bid prices for items which include gas piping work.

12.12 VALVES:

- (A) Gate valves up to and including three inches (3") in size shall be Jenkins Figure 370 or the Department approved equal, all bronze with threaded ends. Soldered valves are unacceptable. Valves four inches (4") in size and larger shall be cast-iron flanged with bronze trim and mountings, Jenkins Figure 325 or 326 or the Department approved equal. All foreign made valves are unacceptable.
- (B) Check valves shall be Sarco #43-NC, Massion, Smolensky or Department approved equal. Size of valve shall match size of pipe served with threaded or flanged ends.
- (C) Valves shall be subject to inspection for Contract compliance by removal of insulation as required by the Department. Valves shall be replaced as directed by the Department.
- (D) Mixing valve and related piping shall be installed according to manufacturers' recommendations. Contractor shall provide union and full size gate valves on all three connections to mixing valve, to facilitate valve replacement. The mixing valve shall be adjusted to maintain a mixed water temperature of 120°F.

12.13 ELECTRIC WIRING:

- (A) All wiring shall conform to the National Electrical Code with the City amendments, as well as rules and regulations of all local authorities having jurisdiction, and an "Inspection Certificate" shall be furnished at the conclusion of the project.
- (B) Contractor shall be responsible for all temperature control wiring and electrical feed to boiler and motorized dampers.

12.14 INSULATION:

- (A) Pipe insulation shall be standard one inch (1") thick fiberglass, as manufactured by Owens-Corning or Johns Manville, or Department approved equal, and shall have MEA approval Certificate.
- (B) Pipe insulation shall be banded eighteen inches (18") on center.
- (C) All sectional covering shall be banded and finished round and smooth, without lumps or depressions, and all ends and joints shall butt evenly and tightly together. No damaged or broken sections shall be used. When covering is formed from loose insulation for fittings and joints, it shall be carefully and evenly applied, secured in place with canvas or cheesecloth, finished smoothly using 'Smooth-Kote', and painted with an oil based enamel paint.
- (D) All newly installed heat distribution and return, and domestic cold and hot water piping within the boiler room and twelve inches (12") above the floor

shall be covered. Covering shall be run up to all fittings and valves. All piping within one inch (1") of combustion materials shall be insulated where required by the Building Code, latest edition.

- (E) All existing and newly installed steam, wet and dry returns, 12" above the floor, domestic cold and hot water, Hartford loop and drip piping within the boiler room, shall be insulated. Piping outside of the boiler room to be insulated under other contracts, unless otherwise indicated herein.
- (F) The boiler breeching outside of the boiler room up to the chimney shall be insulated with 1 1/2" thick Kaloblock, covered with wire mesh and "smoothly" finished with "Smooth-Kote" to prevent a surface temperature in excess of 100°F. The insulation shall be heavily painted with oil based paint. Under no circumstances shall the Contractor use asbestos containing materials under this contract.

12.15 HANGERS AND SLEEVES:

- (A) Pipe hangers shall be of the clevis type or the malleable iron ring type for pipes hung from the ceilings, slabs, or joists. When supported from the floor, the pipes supports shall be of the adjustable ring type with pipe stand and floor flange.
- (B) Pipes one and a quarter inch (1 1/4") and larger shall be hung at ten foot (10') intervals and smaller pipes shall be hung at six foot (6') intervals. Hanger rods shall be three-eighths of an inch (3/8") diameter for all pipes up to two inches (2"), one half of an inch (1/2") diameter for pipes from two and a half to four inches (2-1/2" - 4") and five-eighths of an inch (5/8") for larger size pipes.
- (C) Insulated piping shall have metal shield at least ten inches (10") long and one (1) pipe size larger diameter as outside diameter or insulation between insulation and support.

12.16 FINAL INSPECTION AND TESTING:

- (A) Upon completion of all work under a Work Order, Contractor shall arrange for a final inspection by the Department. Any item of work (or location thereof) not acceptable to the Department shall be replaced or redone to the inspector's satisfaction at no additional cost to the Department. ERP makes the final inspection and must approve all work. All work is subject to subsequent inspection by oversight.
- (B) Contractor shall be responsible for care of equipment prior to acceptance by the Department.

- (C) With the exception of asbestos testing, Contractor shall inspect and test boilers as per manufacturers' recommendations and/or as required by Building Code, providing all necessary testing apparatus and bearing any expense incurred.
- (D) Contractor shall inform the Department before any tests are performed so that the Department may arrange for the presence of an inspector during the tests. Contractor shall also notify and coordinate with any other contractors working in the building whenever their work may be affected by the testing or affect the results of the tests.
- (E) Contractor shall prepare a list of defective conditions and/or remove any violations. After the corrections are performed, either by Contractor or other contractor, the final satisfactory inspection/test status shall be filed with DOB.

12.17 GUARANTEE:

- (A) The Contractor shall guarantee all Work and materials installed under this contract to be free from defects in workmanship or materials for the period of one (1) year from completion and final acceptance by the Department or until the obtaining of all requisite permits, whichever is later. The Contractor shall replace any such defects at no cost to the Department during the guarantee period. The guarantee shall include all materials and labor.
- (B) Where special guarantees covering installation or performance of any system or appliance furnished under this Contract are herein required, the full responsibility for the fulfillment of all such guarantees shall be assumed by this contractor. Contractor also agrees to repair and make good at their own expense any damage to the work or equipment.

12.18 COORDINATION WITH OTHER CONTRACTORS:

- (A) During the progress of the Work, other contractors may be engaged in performing other work or may be awarded other contracts for additional work within the same buildings in which Contractor may be performing Work. In that event, the Contractor shall coordinate the Work to be done hereunder with the work of such other contractors and carefully fit its own work to that provided under other contracts as may be directed by the City. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other contractor.
- (B) Loss Caused By Other Contractors. Should the contractor sustain any loss, damage, or delay through any act or omission of any other contractor having a contract with the City for the performance of work or delivery of materials at any site or having a contract for the performance of work or of any other contractor whatsoever, or should the Contractor sustain any loss, damage or delay through any act of omission of a

subcontractor of any such contractor, the Contractor shall have no claim against the City for such loss, damage or delay, other than for an extension of time, but shall have recourse solely to such other contractor or subcontractor.

- (C) Loss Caused To Other Contractors. If any other contractor or their subcontractor shall suffer loss, damage, or delay through the acts or omissions on the part of the Contractor, the Contractor herein agrees to reimburse such other contractor or their subcontractor for their loss or damage. If such other contractor or their subcontractor shall assert any claim against the City on account of any loss, damage, or delay alleged to have been so sustained, the City shall notify the Contractor, who shall hold the City harmless against all claims, losses, costs, expenses, fees, and other liabilities of whatsoever kind, including fees and expenses incurred by the City in defending any suit or suits based upon such claim or claims and, if any judgment or claim against the City shall be allowed, the Contractor shall pay or satisfy such judgment or claim and pay all costs, fees, expenses, disbursements, and liabilities of whatsoever kind in connection therewith. The City's right to indemnification hereunder shall in no way be determined, waived or discharged by its recourse to assessment of liquidated damages as provided in the contract, or by its exercise of any other remedy provided for by contract or by law.

13. NEW INSTALLATIONS: (Bid Schedule – Sections A and B)

13.1 Where a new installation is requested, contractor is responsible for filing and obtaining all necessary permits. The Department shall obtain and provide ACP5 and no work shall commence without such document. The Cost of all labor and materials required to complete the Work under this Section shall be included in the Contractor's bid price for new installations. No separate compensation will be allowed.

13.2 BOILER SPECIFICATIONS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING A COMPLETE AND FUNCTIONAL BOILER OF SUFFICIENT SIZE TO MEET THE DESIGN CRITERIA. BOILERS SHALL BE CONSTRUCTED TO MEET THE PROVISIONS OF SECTION IV OF THE ASME BOILER AND PRESSURE VESSEL CODE.

(A) Type of Boiler:

- (I) Cast-Iron Boiler: Contractor shall furnish and install gas-fired cast-iron sectional boiler manufactured by Weil McLain, H.B. Smith or Department approved equal. The boiler shall be from the most recent designs and models. The boiler shall be carefully assembled in strict compliance with the manufacturer's recommendations, including the torquing of all tie rods for H B

Smith boilers and use of a 0.032 inch of proper clearance for Weil-McLain boilers, as applicable.

- (II) Steel Boiler: Contractor shall furnish and install 3-pass horizontal fire tube, scotch marine type boiler as approved by the Department. The boiler shall be sealed for pressurized firing, with gas tight front flue door and rear smokebox with smoke outlet. Contractor shall furnish material data sheets as applicable.
- (B) Size of Boiler (Rating): The boiler size shall be based on maintaining Sixty-Eight Degrees Fahrenheit (68° F) inside temperature when the outside condition of Five Degrees Fahrenheit (5° F) and wind at Fifteen Miles Per Hour (15 MPH) exists. The boiler shall also have reserve capacity to produce adequate domestic hot water through the internal coil to meet the hot water requirements of all the occupants, where applicable and as specified in the Work Order. **NOTE: CAPACITY OF TANKLESS COIL WILL BE BASED ON NUMBER OF UNITS IN BUILDINGS.**
- (C) Boiler Controls and Accessories:
 - (I) All steam heating boilers shall be equipped with:
 - (a) Boiler water temperature gauge set.
 - (b) Steam pressure gauge set.
 - (c) ASME safety valve(s) as required by the manufacturer. Relief valves to be piped down to boiler room floor.
 - (d) McDonnell & Miller or Department approved equal automatic water feeder and low water cutoff unit with backflow preventer on cold water line provided with a strainer assembly, with air-gap piped to floor. Automatic water feeder installed with three unions and valves: one before the water feeder; one after the water feeder and; one valve bypass line. Unions must be installed after the valves. Cold water feed to boiler must be piped into the return line at the base of Hartford loop. Blow-offs from feeder and cutoffs must be piped to floor. Blow-downs from the boiler must be piped to the sump pit.
 - (e) Control Devices: The package of controls provided with the heating plant must conform to the DAR Engineering criteria for Gas. (Note: these are not to be included in the bid price for installation of a new heating plant. The Contractor shall bill separately installation or replacement is required.) The controls shall include but not be limited to the following:
 - (i) An emergency cutoff switch located outside boiler room.

- (ii) An electronic heat timer with thermal lockout facility to regulate heat supply in conjunction with outside temperature. Device to be manufactured by American Steam Timer Corp., Heat Timer Corp., or Department approved equal. Device and sensors to be installed at approved and appropriate locations.
 - (iii) For multiple dwellings, boilers with less than thirty horsepower (30 hp) rating, clock thermostat will be accepted as an approved substitute for Heat Timer, above.
 - (iv) King valve.
 - (f) Operating Pressuretrol, high limit Pressuretrol and manual reset Pressuretrol (from separate tapping).
 - (g) A boiler water temperature control (Aquastat).
 - (h) Fully trimmed water column w/gauge glass and tricocks.
 - (i) Gauge glass valves to be straight type and not angle type.
 - (j) Back up low water cutoff (to be installed directly into boiler at a safe level below primary lower water cutoff).
 - (k) Any and all additional components conforming with applicable governmental agencies.
- (II) All hot water heating boilers shall be equipped with:
- (a) A combination (low and high) water temperature limit control.
 - (b) A boiler water pressure-temperature indicator.
 - (c) ASME certified pressure relief valve (side outlet type) set to meet specific requirements.
 - (d) Low water cutoff – at highest point in boiler.
 - (e) Pressure and relief valve water feeder (Dual valve).
 - (f) A boiler water temperature control (manual reset Aquastat).
 - (g) A flow control valve.
 - (h) A backflow preventer, with air-gap piped to floor.
 - (i) An expansion tank of the pre-pressurized diaphragm type as manufactured by AMTROL, Inc., suitable for a maximum working pressure of 125 psi, having a sealed-in elastomer diaphragm suitable at operating temperature of

240°F, designed for the same working and test pressures as the boilers. Tank shall be fabricated of copper bearing steel, and shall be of riveted or welded construction. Tank shall be built in accordance with the ASME Code for Unfired Pressure Vessels, and shall bear the ASME label.

- (j) Hot water circulating pump.
- (k) Any and all additional components conforming with applicable governmental agencies.
- (D) Burner: Atmospheric or forced draft multi-jet type gas burner shall match the rating of new boiler. The burner shall be manufactured by Power-Flame, Industrial Combustion, Gordon-Piatt or Department approved equal. Burner shall have New York City approval number and shall have complete gas train, valves and all necessary controls for safe and efficient operation in accordance with UL requirements.

13.3 DOMESTIC HOT WATER PRODUCTION: Under most circumstances hot water requirements is supplied via tankless coil in buildings over ten (10) units and via separate, gas-fired hot water heater in buildings ten (10) units and under. However, situations may arise under which the Department deems it appropriate to scope such provision via tankless coil in smaller buildings.

- (A) Tankless Coil: Tankless domestic hot water coil according to building size: The coil shall be installed with an approved mixing valve, temperature gauge, shut-off valves, pressure relief valve, check valve and unions. The size of all new pipes, valves, etc. shall be the larger of coil tapping or existing water mains.
- (B) Standalone (Bid Schedule – Section B)
 - (I) Standalone gas-fired hot water heater manufactured by A.O. Smith Corporation or Department approved equal. The heater shall be in compliance with ASHRAE 90-75 standards for energy efficiency. The heater shall have the rated recovery as stated in the Confirmation of Award at one hundred degrees Fahrenheit (100°F) rise. The heater shall be glass lined ASME approved, jacketed and insulated storage tank. Heater shall have a five (5) to ten (10) year limited warranty as outlined in the written warranty for a residential installation.
 - (II) Tank shall be horizontal or vertical mounting as specified or as appropriate to field conditions. Heater shall be equipped with a pilot safety shut-off and an automatic gas shut-off device to shut off entire gas supply in event of excessive temperature in tank. Heater shall also be equipped with an AGA certified draft hood and new breeching system to chimney base. Heater shall be equipped with hot and cold water cutoff valves; if existing valves

are good, they may remain and the installation invoice will not be cut. The size of hot water heater will be based on number of units in buildings or as specified in the individual Scope of Work.

13.4 HEATING PLANT INSTALLATION:

- (A) Flushing Requirements: Contractor shall assume responsibility for either the proper flushing-out of the existing condensate return piping system prior to removing the old boiler, or the complete flushing-out of the returns with the new boiler isolated from the existing condensate return piping system. This flushing process is important for the purpose of eliminating and/or minimizing the potential for the return of highly contaminated condensate return water to the boiler, which causes the rapid formation of scale upon the clean boiler heating surfaces.
- (B) Contractor shall dismantle and remove the existing heating plant and/or water heater.
- (C) Contractor shall remove all extraneous and redundant water, heat distribution and return, oil and equalizing pipes, old boiler breeching and electrical wiring in the boiler room as directed by the Confirmation of Award.
- (D) Boiler Location and Support:
 - (I) Before removing any of the existing boiler room equipment or their structural supports, Contractor shall inspect field conditions and ascertain that the new boiler can be installed as indicated in the individual Work Order.
 - (II) The new boiler shall be erected in the existing boiler room upon the removal of the existing boiler (or adjacent to existing boiler if specified in individual Work Order).
 - (III) The new boiler shall be placed upon an appropriately sized four inch (4)" minimum height concrete boiler "housekeeping" pad extending six inches (6") beyond all sides of the boiler. Contractor shall provide an adequate subsurface bearing and base to ensure proper support of the boiler and pad to be poured, and all concrete shall be altered as required to support the new boiler installation. Contractor shall take the necessary precautions to ensure that the existing pit is filled with brick, stone or gravel – Steel shall not be used. The pits shall be filled up and finished even with the existing boiler room floor using a minimum of six inches (6") of concrete if conditions permit. Concrete for boiler room pads shall have a minimum strength of 3,000 psi.
 - (IV) Contractor shall provide an absolute twenty-four inches (24") minimum distance between the new boiler water line and lowest point of any steam distribution pipe installed throughout the

building prior to determining the finished concrete elevation of the boiler housekeeping pad and/or raised boiler pit floor. Contractor shall locate the water line level of the new boiler at or below that of the existing boiler.

- (V) Contractor's failure to properly make allowances and locate the water line of the new boiler in relation to the old boiler water line, or maintain twenty-four inches (24") minimum between the new boiler's normal water line and lowest point of any steam distribution piping, shall result in Contractor automatically assuming full responsibility for the installation of a new adequately sized condensate return pump at his expense, to ensure proper operation of the heating system without a back-up of condensation in the heat distribution or return system.
- (E) All boilers shall be properly assembled in strict accordance to manufacturers' recommendations.
- (F) BOILER AND HOT WATER HEATER BREECHING:
 - (I) The joints on smoke breeching and smoke connections shall be telescoped and riveted with quarter inch (1/4") diameter rivets on four inch (4") centers.
 - (II) Breeching shall be hung from the ceiling beams. Hangers for supports shall not be less than three quarters of an inch (3/4") diameter steel rods spaced not more than six feet (6') apart. Steel beams shall be inserted where required. Two and a half inch (2 1/2") steel angles shall be used as stiffeners for hangers at top and bottom side of breeching. Draft hood supplied shall be A.G.A. Certified Design.
 - (III) Contractor shall breech the new boiler and hot water heater to existing chimney with new breeching using galvanized iron, gas-tight connections. The breeching shall be supported on approved type hangers at every change of direction. Contractor shall be responsible for all necessary adjustments and changes to the chimney and breeching to meet DAR requirements. The breeching shall conform to Building Code and applicable DAR requirements.
 - (IV) The boiler breeching outside of the boiler room up to the chimney shall be insulated with 1 1/2" thick Kaloblock, covered with wire mesh and "smoothly" finished with "Smooth-Kote" to prevent a surface temperature in excess of one hundred degrees Fahrenheit (100°F). The insulation shall be heavily painted with oil-based paint.

- (V) Contractor shall provide spill switch with automatic reset on draft hood for new installations.

(G) PIPING:

- (I) Contractor shall provide and install, new copper domestic hot and cold water piping in boiler room to conform to specifications and replace any existing black steel or galvanized service water piping. The new piping shall terminate outside of the boiler room and connect to the nearest water supply main.
- (II) Prices bid for new boiler installations shall include domestic hot and cold water piping, as well as heat distribution and return line piping, up to 20 linear feet in total. Any additional quantity may be billed at the price bid for item C4: "Replace heat distribution/return and hot/cold water lines." Should an installation require less than 20 linear feet of such piping, any shortage will not be cut from the invoice.
- (III) Final connections to coils, mixing valves and water feeders and other components shall be made with unions and threaded pipe, and piped in a manner, which allows easy disassembly and removal of the equipment and components.
- (IV) All blow-offs, blowdowns and drains for the new boiler and its auxiliary equipment shall be piped to the sump pit, including the low water cutoff units, which shall be provided with a funnel arrangement. Common horizontally routed drain piping shall be 2 1/2" in diameter and vertical takeoffs (one (1) per blowdown valve) a minimum of 1 1/2" diameter. All drains shall be routed in a manner to prevent the backup and/or spillage of water from the piping system, under maximum discharge rate from the boiler components.
- (V) Contractor shall provide and install two new Gorton (or Department approved equal) air eliminator valves at the end of all distribution mains in the basement.
- (VI) All existing and newly installed heat distribution and returns, twelve inches (12") above the floor, domestic cold and hot water, Hartford loop and drip piping within the boiler room shall be insulated. Unless otherwise indicated herein, piping outside of the boiler room shall not be insulated under this Contract.
- (VII) Contractor shall properly support all new or existing piping located within the boiler room and overhead returns located inside or outside of the boiler room.

(H) ELECTRICAL WIRING:

- (I) Contractor shall furnish and install all electrical apparatus and wiring for new gas burner systems.
 - (II) All electrical wiring, hardware, equipment, and apparatus shall be “new” and wiring shall run continuous from the house utility panel to and throughout the boiler room.
 - (III) A burner control panel (as a standard supplied part of the burner) shall be substantially mounted and shall contain all burner relays, motor starter, disconnect switches, etc., as required for the proper operation of the burner unit.
 - (IV) The Contractor shall have filed an electrical permit application and received a permit application number prior to final inspections by ERP including the submission of a copy of the permit application.
 - (V) Power shall be provided by the Contractor for the proper operation of the new boiler and all related equipment. Contractor shall submit calculations to ERP for approval of the new boiler room electric service size, PRIOR to the start of work.
 - (VI) All conductors and control wiring shall conform to manufacturers’ installation specifications. All conductors shall be rated for 75° C and control wiring shall be high temperature 90° C.
- (I) BOILER EFFICIENCY AND OPERATIONAL TESTING FOR NEW INSTALLATIONS:
- (I) Burner start-up service is to be provided by the Burner Company, or their local authorized representative.
 - (II) Upon the initial firing-off of the new boiler, a complete boiler and burner system operational test shall be performed, including all necessary adjustments.
 - (a) A COMBUSTION EFFICIENCY TEST IS REQUIRED TO MINIMIZE THE POSSIBILITY OF A SMOKY BURNER FIRE, RESULTANT RAPID SOOT ACCUMULATION IN THE BOILER AND EXCESSIVE FUEL CONSUMPTION.
 - (b) Contractor shall adjust the boiler-burner unit for the following operational parameters: eight percent carbon dioxide (8% CO₂), zero percent carbon monoxide (0% CO), and zero inches (0.0”) water column pressure in the boiler outlet.
 - (III) In order that ERP may witness such, Contractor shall give ERP forty-eight (48) hours’ advance notice of the time of firing-off, testing and adjustment of the boiler-burner unit.
 - (IV) Upon completion of the efficiency test, Contractor shall provide ERP with a Burner start-up information and test data report from

the Burner Company or their local authorized representative as written verification of the burner start-up information and test results.

- (J) The new boiler installation shall be free of water, steam and/or combustion gas leaks. In the event of any leaks, the entire boiler installation shall be rejected until all leaks are properly corrected at Contractor's expense.
- (K) Upon the completion of the boiler's installation and firing, it shall be chemically cleaned and flushed in accordance with the boiler manufacturer's recommendations, pursuant to the specifications stated herein. Chemicals and cleaning compounds shall be used in the boilers as specified by the boiler manufacturer. Contractor shall flush the boiler and skim the surface for a minimum of one (1) hour, or as required to prevent surging and to eliminate all dirty and contaminated water prior to all final punch list inspections. Contractor shall provide a skim valve at the boiler water line or as installed by the boiler manufacturer. Upon initial firing, one hundred percent (100%) of all condensation shall be flushed from the condensate returns for a period of three (3) hours continuous running time.
- (L) Contractor shall instruct operating personnel (to be designated by ERP) on the proper operation of all the equipment installed under this Contract. Contractor shall also demonstrate that all equipment installed operates satisfactorily from the start up and shall replace defective components immediately and prior to final acceptance.
- (M) Contractor shall provide and install insulation of boiler, steam mains and hot water mains as an important energy conservation measure. A non-insulated new boiler and mains can increase fuel consumption by up to ten percent (10%). If Contractor fails to insulate the new boiler and mains within a reasonable time (eight (8) weeks after firing the boiler), the Department reserves the right to withhold the payment.
- (N) When having performed an installation of a hot water heating system, Contractor shall properly bleed all zones to ensure they are free of air pockets.

14. ADDITIONAL WORK FOR NEW INSTALLATIONS: As required by an individual Work Order, Contractor shall provide and install the following:

- 14.1 New sump pump only (replacement): Federal or Sta-Rite Model HT-300 or Department approved equal submersible sump pump, with minimum twenty-five gallons per minute (25 gpm) capacity and having a bronze impeller capable of withstanding boiler water temperature (two hundred degrees Fahrenheit (200°F)). Sump Pump outlet piping shall terminate in the building sanitary system with a check valve and appropriate sewer fitting. Electrical outlet for the sump pump to

be three (3) feet above pump. The new sump pump and all required electric wiring shall be independent of burner operation. All piping shall be rigid and properly supported.

- 14.2 **LED Light Fixtures:** Two (2) new light emitting diode (LED) light fixtures in boiler room: fixtures shall be suitable for boiler room installation, shall provide sufficient illumination, shall be energized by an electrical circuit other than the burner circuit, and shall be operated by a switch outside the boiler room. Installation of T12 lamp or other fluorescent fixtures does not comply with the City's current EPP Minimum Standards for Construction Products, Revision March 2024.
- 14.3 Insulation for all heat distribution and return, and water lines in basement/cellar/boiler room.
- 14.4 Remove corroded existing, and provide and install new heat distribution and return lines, and hot and cold water lines, along with any fittings and valves, including mixing valve, required to properly connect heating plant to building's water and heat distribution systems.
- 14.5 New electric service from house main to boiler room for connection to boiler power supply and all other electrical equipment and wiring required for this installation.
- 14.6 New adequately sized Schedule 40 gas supply piping from main service entrance to burner – including meter bar.
- 14.7 New appropriate type and adequate size (up to 4") "king" steam valve.

15. REPAIR AND MAINTENANCE OF EXISTING SYSTEMS:

- 15.1 Contractor shall perform any and all Work required to make repairs, preventive maintenance, and/or surveying necessary on existing systems as required under any Work Order. This shall include, but is not necessarily limited to furnishing all labor, parts, and materials necessary in order to:
 - (A) remove violations on heating plants issued by DEP or any other governmental regulatory agency; repair or replace tubes, sections, domestic hot water heater coils, safety devices, controls, gas lines, gauges, nozzles, motors, pumps, wiring, strainers, condensate pumps, water feeder and mixing valves, water supply lines, and heat distribution and return lines within the boiler room, breeching, chimney base cleaning and related piping for all of the above. When having performed a repair on a hot water heating system, which includes the replacement of any zone valve, Contractor shall properly bleed the affected zone to ensure it is free of air pockets.

- 15.2 Due to a change in DAR requirements concerning City owned buildings, Contractor shall be required to submit all the documents, forms and drawings customarily required by DAR, to the Department with the first payment request and proof of filing, for review and subsequent approval.
- 15.3 The Department reserves the right to engage another contractor to perform any repair work during the term of this Contract.
- 15.4 Contractor shall properly support all new piping related to repairs.
- 15.5 Replacement Sections and Tubes:
- (A) Cast-Iron Boiler
 - (I) After dismantling existing boiler to identify leaking sections and those corroded to the point that they may soon leak, Contractor must conduct a joint inspection with the Department in order to obtain approval to proceed.
 - (II) Contractor shall carefully reassemble the boiler with the new sections in strict compliance with the manufacturer's recommendations.
 - (III) Contractor shall reinstall boiler jacket, make boiler watertight and restore boiler to operational order.
 - (B) Steel Boiler
 - (I) After thoroughly examining existing boiler to identify leaking tubes and those corroded to the point that they may soon leak, Contractor must conduct a joint inspection with the Department in order to obtain approval to proceed.
 - (II) Contractor shall remove the defective tubes, prepare the tube sheet and install new ten gauge (#10) steel tubes.
 - (III) Contractor shall ensure a watertight seal and restore boiler to operational order.
- 15.6 The Contractor shall provide and install replacement parts/controls for steam boilers as manufactured by McDonnell & Miller or Department approved equal:
- (A) 47-2 boiler water feeder
 - (B) 67 low water cutoff
 - (C) 101 electric automatic feeder
 - (D) 801 back-up low water cutoff (probe) - Honeywell Controls or Department approved equal
 - (E) L4079B Manual Pressuretrol
 - (F) P404A Operating Pressuretrol

- (G) L4006 Aquastat
 - (H) Gauge Glass Assembly
- 15.7 Provide and install replacement circulators for hot water boilers:
- (A) 100 Iron
 - (B) LR 20 Iron
 - (C) Bell & Gossett 100
- 15.8 Provide and install replacement controls for steam/water boiler:
- (A) Heat timer complete
 - (B) Heat timer replacement
 - (C) Thermostat – clock
 - (D) Thermostat with lock box
- 15.9 Provide and install replacement parts for atmospheric Gas Burners, Honeywell or Department approved equal:
- (A) Q 308 Pilot assembly
 - (B) Q 340 Thermocouple (24" to 72")
 - (C) Q 327 Pilot Assembly
 - (D) V800A 24V 1/2" to 1" combination Gas Valve
 - (E) AT 75A 24 Volt 40-100 VA transformer
 - (F) Spill Switch
- 15.10 Provide and install replacement Extrol tanks:
- (A) #15
 - (B) #30
- 15.11 Provide and install replacement valves:
- (A) Tempering/Mixing valves
 - (I) Watts or Department approved equal: 70A 3/4"
 - (II) Holby or Department approved equal: 2"
 - (III) High Pressure, High Output
 - (B) Reducing Valves - Cash Acme or Department approved equal
 - (C) Relief valves - Watts or Department approved equal:
 - (I) 40 X L
 - (II) 100 X L

- 15.12 Provide and install replacement back-flow preventer - Watts or Department approved equal: 9D
- 15.13 Provide and install replacement Air Gaps – Watts 909 AG or Department approved equal.