CITY OF NEWTON, MASSACHUSETTS
PURCHASING DEPARTMENT
purchasing@newtonma.gov
Fax (617) 796-1227

May 29, 2015

ADDENDUM #1

INVITATION FOR BID #15-126

MYRTLE VILLAGE AFFORDABLE HOUSING – PHASE 1

THIS ADDENDUM IS TO: Change certain terms and conditions of the Invitation for Bid (IFB) issued on May 28, 2015 by the City of Newton on behalf of Myrtle Village LLC for the Myrtle Village Affordable Housing – Phase 1 project.

The scope of the changes are set forth in the attached Addendum No. 1 and substitute pages 00 1116-1 and 00 116-2 attached hereto.

All other terms and conditions of this bid remain unchanged.

PLEASE ENSURE THAT YOU ACKNOWLEDGE ALL ADDENDA ON YOUR BID FORM. FAILURE TO ACKNOWLEDGE ALL ADDENDA COULD RESULT IN REJECTION OF YOUR BID AS NONRESPONSIVE.

Thank you.

Nicholas Read
Chief Procurement Officer
1.1 PROJECT INFORMATION

A. Project Name: Myrtle Village Affordable Housing - Phase 1.
B. Owner: Myrtle Village LLC, 21 Curve Street, West Newton, MA 02465.
C. Architect: Angelo A. Kyriakides, Architect P.C., P.O. Box 1068, Brockton, MA 02301-1068.
D. Date of Addendum: May 28, 2015.

1.2 NOTICE TO BIDDERS

A. This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
C. The date for receipt of Bids is unchanged by this Addendum, at same time and location.

1.3 ATTACHMENTS

A. This Addendum includes the following attached Documents and Specification Sections:

END OF DOCUMENT
MYRTLE VILLAGE AFFORDABLE HOUSING - PHASE 1

ADVERTISEMENT FOR BIDS

Myrtle Village LLC, the Awarding Authority, invites sealed Bids from General Contractors for the Myrtle Village Affordable Housing - Phase 1 project located at 12 Curve Street, West Newton, MA, in accordance with plans and specifications prepared by Angelo A. Kyriakides, Architect P.C., P.O. Box 1068, Brockton, MA 02301-1068.

This Project consists of, but is not necessarily limited to, the renovation and addition to an existing wood framed building to construct 3 living units.

The value of the Work is estimated to be between $475,000.00 - $550,000.00 - $575,000.00 - $635,000.00.

The Work of this Contract shall be substantially completed within one hundred eighty (180) calendar days from the date of the Notice to Proceed. The anticipated start date is 1 July 2015 and the substantial completion date is 30 January 2016.

Sealed Bids will be received at the office of the Purchasing Department, Room 201, Newton City Hall, 1000 Commonwealth Avenue, Newton, MA 02459, until 10:00 a.m. on Wednesday, 24 June 2015. If mailed, Bids shall be sent to the Purchasing Department, Room 201, Newton City Hall, 1000 Commonwealth Avenue, Newton, MA 02459, and must be received no later than the date and time indicated above.

Bidding Documents will be available online at www.newtonma.gov/bids or Bidding Documents may be obtained at the office of the Purchasing Department, Room 201, Newton City Hall, 1000 Commonwealth Avenue, Newton, MA 02459, any time after 10:00 a.m. on Wednesday, 27 May 2015. Bid Documents may also be obtained at the Pre-Bid Meeting on Wednesday, 10 June 2015. Bidding Documents picked up at the Newton Purchasing Department or at the Pre-Bid Meeting will require a refundable deposit in the amount of one hundred dollars ($100.00) per set in the form of a certified or cashier’s check or cash payable to Myrtle Village LLC. Bidders should call Architect to order Bidding Documents for pick up at the pre-Bid Meeting.

The full amount of each deposit for up to two (2) sets of Bidding Documents per Bidder will be refunded to each Bidder returning complete sets of Bidding Documents (including Addenda if issued) to the Newton Purchasing Department, within thirty (30) days of receipt of the General Bids. Otherwise, the deposit shall become the property of the Myrtle Village LLC. Additional sets may be purchased for one hundred dollars ($100.00) per set. There will be no charge (deposit) for obtaining Bid Documents online.

Bidders shall be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, a separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder. The successful Bidder will be required to furnish a Performance Bond and a Labor and Materials Payment Bond, written to equal individually 100 percent of the Construction Contract Amount, as required by the Contract Documents.

Bid security shall be submitted with each bid in the amount of five (5) percent of the bid amount in the form of a Bid Bond or a Certified Bank Check, made payable to Myrtle Village LLC. No bids may be withdrawn for a period of 60 days after opening of bids. The awarding authority/owner reserves the right to reject any and all bids and to waive informalities and irregularities that are deemed not to be in the best interests of the project.

Bidder Qualifications: Bidders shall be required to submit a detailed list of their qualifications for review and consideration. Qualifications shall include but not be limited to the following:

1. Bidder shall demonstrate they have successfully completed projects of similar scope and time requirements.
2. Bidder shall demonstrate a minimum of five (5) years experience in providing affordable housing for non-profit organizations or public agencies.
3. Bidder shall demonstrate they have available and employ a sufficient work force to undertake this Project and complete it within the prescribed time frame.
4. Bidder shall submit, as part of their qualifications, a detailed construction schedule for the Project enumerating the 180 day project time from the issuance of the “Notice to Proceed” by Owner to the issuance of a “Certificate of Occupancy” by the City of Newton.
5. Bidders shall provide a list of major trade sub-contractors they intend to use on this Project for review by Owner. Owner reserves the right to reject any sub-contractor deemed not qualified to perform the Work of this Contract.
6. Bidders shall provide a list of current on-going projects for which they presently have contracts with along with names and contact information of the owners/clients/architects. In addition to the current contracted list of projects, Bidders shall to provide a list projects they have under contract but have not yet started.

MANDATORY PRE-BID MEETING: INTERESTED BIDDERS SHALL ATTEND A MANDATORY PRE-BID MEETING TO BE HELD AT THE PROJECT SITE, 12 CURVE STREET, WEST NEWTON, MA ON WEDNESDAY, 10 JUNE 2015 AT 10:00 A.M. PROSPECTIVE BIDDERS ARE REQUIRED TO ATTEND.

END OF DOCUMENT
1.4 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders are invited to submit bids for Project as described in this Document according to the Instructions to Bidders.

B. Project Identification: Myrtle Village Affordable Housing - Phase 1.
   1. Project Location: 12 Curve Street, West Newton, MA.

C. Owner: Myrtle Village LLC, 21 Curve Street, West Newton, MA 02465.

D. Architect: Angelo A. Kyriakides, Architect P.C., P.O. Box 1068, Brockton, MA 02301-1068.

E. Project Description: Project consists of the renovation and addition to an existing wood framed building to construct 3 living units.

F. Construction Contract: Bids will be received for the following Work:
   1. General Contract (all trades).

1.5 BID SUBMITTAL AND OPENING

A. Owner will receive sealed bids until the bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:
   1. Bid Date: Wednesday, 3 June 2015.
   2. Bid Time: 10:00 a.m., local time.
   3. Location: Purchasing Department, Room 204, Newton City Hall, 1000 Commonwealth Avenue, Newton, MA 02459.

B. Bids will be thereafter privately opened.

1.6 BID SECURITY

A. Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 60 days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.7 PREBID CONFERENCE

A. A prebid conference for all bidders will be held at the Project Site, 12 Curve Street, West Newton, MA on Wednesday, 20 June 2015 at 10:00 a.m., local time. Prospective bidders are required to attend.

1.8 DOCUMENTS

A. Bidding Documents will be available online at www.newtonma.gov/bids any time after 10:00 a.m. on Wednesday, 27 May 2015. Bidding Documents may be obtained at the Pre-Bid Meeting on Wednesday, 10 June 2015. Bidding Documents picked up at the Pre-Bid Meeting will require a refundable deposit in the amount of one hundred dollars ($100.00) per set in the form of a certified or cashier’s check or cash payable to Myrtle Village LLC. Bidders should call Architect to order Bidding Documents for pick up at the pre-Bid Meeting. The full amount of each deposit for up to two (2) sets of Bidding Documents per Bidder will be refunded to each Bidder returning complete sets of Bidding Documents (including Addenda if issued) to the Newton Purchasing Department, within thirty (30) days of receipt of the General Bids. Otherwise, the deposit shall become the property of the Myrtle Village LLC.
Additional sets may be purchased for one hundred dollars ($100.00) per set. There will be no charge (deposit) for obtaining Bid Documents online.

Bidding Documents will be available online at www.newtonma.gov/bids or may be picked up at the office of the Purchasing Department, Room 204, Newton City Hall, 1000 Commonwealth Avenue, Newton, MA 02459, any time after 10:00 a.m. on Monday, 11 May 2015. There will be no charge (deposit) for obtaining Bidding Documents.

1.9 TIME OF COMPLETION
A. Bidders shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.
B. The Work of this Contract shall be substantially completed within one hundred eighty (180) calendar days from the date of the Notice to Proceed. The anticipated start date is 15 June 2015 and the substantial completion date is 15 December 2015.

1.10 BIDDER’S QUALIFICATIONS
A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, a separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder. The successful Bidder will be required to furnish a Performance Bond and a Labor and Materials Payment Bond, written to equal individually 100 percent of the Construction Contract Amount, as required by the Contract Documents.

END OF DOCUMENT
ADDENDUM #2

INVITATION FOR BID #15-126

MYRTLE VILLAGE AFFORDABLE HOUSING – PHASE 1

THIS ADDENDUM IS TO: Answer the following Questions:

Q1. The “Opening Date” listed on www.newtonma.gov for the above referenced project is 06/25/2015 at 10:00 AM, the Advertisement to Bid in the Specification and Addendum #1 have the Opening Date as 06/24/2015. Please clarify.

A1. Bids are due before 10:00 A.M. on Thursday, June 25, 2015, Room 201, Newton City Hall, 1000 Commonwealth Avenue, Newton, Massachusetts. Any bids not so received will be rejected.

Q2. Are contractors required to pay prevailing wage for this project?

A2. No. Although the Myrtle Village project is being funded with public monies (e.g., CDBG, HOME, CPA), the developer is a private non-profit entity so this is not a public building project. Davis Bacon applies to such projects only eight or more units are being constructed. When there are less than eight units being constructed or renovated the wage rates do not apply.

All other terms and conditions of this bid remain unchanged.

PLEASE ENSURE THAT YOU ACKNOWLEDGE ALL ADDENDA ON YOUR BID FORM. FAILURE TO ACKNOWLEDGE ALL ADDENDA COULD RESULT IN REJECTION OF YOUR BID AS NONRESPONSIVE.

Thank you.

Nicholas Read
Chief Procurement Officer
CITY OF NEWTON, MASSACHUSETTS
PURCHASING DEPARTMENT
purchasing@newtonma.gov
Fax (617) 796-1227

June 8, 2015

ADDENDUM #3

INVITATION FOR BID #15-126

MYRTLE VILLAGE AFFORDABLE HOUSING – PHASE 1

THIS ADDENDUM IS TO: Insert Section 21 00 00 (Fire Protection System) to the Invitation For Bids issued on May 28, 2015 in accordance with the attached.

All other terms and conditions of this bid remain unchanged.

PLEASE ENSURE THAT YOU ACKNOWLEDGE ALL ADDENDA ON YOUR BID FORM. FAILURE TO ACKNOWLEDGE ALL ADDENDA COULD RESULT IN REJECTION OF YOUR BID AS NONRESPONSIVE.

Thank you.

Nicholas Read
Chief Procurement Officer
SECTION 00 9113.03

ADDENDUM NO. 3

1.1 PROJECT INFORMATION

A. Project Name: Myrtle Village Affordable Housing - Phase 1.
B. Owner: Myrtle Village LLC, 21 Curve Street, West Newton, MA 02465.
C. Architect: Angelo A. Kyriakides, Architect P.C., P.O. Box 1068, Brockton, MA 02301-1068.
D. Date of Addendum: June 8, 2015.

1.2 NOTICE TO BIDDERS

A. This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

C. The date for receipt of Bids is unchanged by this Addendum, at same time and location.

1.3 ATTACHMENTS

A. This Addendum includes the following attached Documents and Specification Sections:

1.4 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS

A. Document 00 0110 “Table of Contents” (not reissued).
   1. Before DIVISION 22 - PLUMBING, insert the following:

   **DIVISION 21 - FIRE SUPPRESSION**

   21 0000 - Fire Protection System

   END OF DOCUMENT
THIS PAGE IS BLANK
SECTION 21 00 00

FIRE PROTECTION SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Include the General Conditions of the Contract and Division 1, General Requirements, as part of this Section.

B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other Trades affecting, or affected by work of this Section. Cooperate with such Trades to ensure the steady progress of all work under the Contract.

1.2 REFERENCES

A. All materials and workmanship shall comply with all applicable Codes, Specifications, Local and State Ordinances, Industry Standards and Utility Company Regulations, latest editions.

B. In case of difference between Building Codes, State Laws, Local Ordinances, Industry Standards and Utility Company Regulations and the Contract Documents, the Fire Protection Contractor shall promptly notify the Engineer in writing of any such difference.

C. In case of conflict between the Contract Documents and the requirements of any Code or Authorities having jurisdiction, the most stringent requirements of the aforementioned shall govern for budgetary purposes. However, no work will proceed until the Engineer determines the correct method of installation.

D. Should the Fire Protection Contractor perform any work that does not comply with the requirements of the applicable Building Codes, State Laws, Local Ordinances, Industry Standards and Utility Company Regulations, he shall bear all costs arising in correcting the deficiencies, as approved by the Engineer.

E. Applicable Codes and Standards shall include all State Laws, Local Ordinances, Utility Company Regulations and the applicable requirements of the following accepted Codes and Standards, without limiting the number, as follows.
   2. Local Ordinances and Regulations of the Building and Fire Departments.

F. In these specifications, references made to Industry Standards and Code Bodies are intended to indicate the accepted volume or publication of the Standard or applicable Code. All equipment, materials and details of installation shall comply with the requirements and latest revisions of the following Bodies, as applicable:
   1. ANSI American National Standards Institute
2. ASTM American Society of Testing Materials
3. NEMA National Electrical Manufacturers Association
4. UL Underwriters’ Laboratories, Inc.
5. FM Global, Inc.

G. Plans and final installations shall be subject to acceptance by the Newton Fire Department.

H. The Fire Protection Contractor for the work shall give all necessary notices, obtain and pay for all permits, pay all governmental taxes, fees and other costs in connection with his work; file for necessary approvals with the jurisdiction under which the work is to be performed. The Contractor shall obtain all required Certificates of Inspection for his work and deliver same to the Owner before request for acceptance of his portion of work is made and before final payment.

1.3 DESCRIPTION OF WORK

A. The work under this Contract shall include all labor, materials, tools, equipment, transportation, insurance, temporary protection, supervision and incidental items essential for proper installation and operation, though not specifically mentioned or indicated but which are usually provided or are essential for proper installation and operation of all systems related to this Section, as specified herein.

1. Provide a wet-pipe sprinkler system throughout the building.
2. Tamper switches.
3. Pressure switches.
4. Double check valve assembly.
5. Escutcheons.
6. Coordination drawings.
7. Catalog cuts, shop drawings and hydraulic calculations.
8. Core drilling.
9. Sleeves, inserts and hangers.
11. Record drawings.
12. Operation and maintenance manuals.
13. Valves tags and charts.
15. Fees, permit, royalties, guarantees.
16. Submittals to local fire department and Owner's insurance underwriter.
17. Piping and valves.
19. Fire Department connections.

B. The following work is not included in this Section, and shall be performed under other Sections:

1. Excavating, trenching and backfill.
2. Temporary heat and water.
3. Flashing of all pipe.
4. Finish painting.
5. Electrical power wiring, starters and disconnect switches, where not provided by this Section. Wiring of flow switches to fire alarm system, etc.
6. Installation of access panels furnished under this Section shall be by the General
1.4 DEFINITIONS

A. Words in the singular shall also mean and include the plural, wherever the context so indicates and words in the plural shall mean the singular, wherever the context so indicates.

B. Wherever the terms "shown on drawings" are used in the specifications, they shall mean "noted", "indicated", "scheduled", "detailed", or any other diagrammatic or written reference made on the drawings.

C. Wherever the term "provide" is used in the specifications it will mean "furnish" and "install", "connect", "apply", "erect", "construct", or similar terms, unless otherwise indicated in the specifications.

D. Wherever the term "material" is used in the specifications it will mean any "product", "equipment", "device", "assembly", or "item" required under the Contract, as indicated by trade or brand name, manufacturer's name, standard specification reference or other description.

E. The terms "approved", or "approval" shall mean the written approval of the Architect.

F. The term "specification" shall mean all information contained in the bound or unbound volume, including all "Contract Documents" defined therein, except for the drawings.

G. The terms "directed", "required", "permitted", "ordered", "designated", "prescribed" and similar words shall mean the direction, requirement, permission, order, designation or prescription of the Architect. The terms "approved", "acceptable", "satisfactory" and similar words shall mean approved by, acceptable or satisfactory to the Architect. The terms "necessary", "reasonable", "proper", "correct" and similar words shall mean necessary, reasonable, proper or correct in the judgment of the Architect.

H. "Conduit" includes in addition to conduits, all fittings, hubs, hangers and other accessories relative to such conduit.

I. "Concealed" means hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction or in crawl spaces.

J. "Exposed" means not installed underground or "concealed" as defined above.

K. "Fire Protection Contractor" or "Contractor" refers to the SubContractor or his Sub-SubContractors responsible for furnishing and installation of all work indicated on the Fire Protection drawings and in the Fire Protection specifications.

L. "Design Professional" shall refer to the Design Professional "Fernandez & Associates", "Owner" shall refer to the designated representatives of the project owner.

1.5 SUBMITTALS
A. Submit under provisions of Division 1.

B. Shop drawing submittals shall be prepared and submitted as described herein and in accordance with applicable sections of General Conditions and Division 1, as modified and noted hereinafter.

C. All shop drawings shall have clearly marked the appropriate specification number or drawing designation, for identification of the submittal.

D. Disposition of shop drawings shall not relieve the Fire Protection Contractor from the responsibility for deviations from the drawings or specifications, unless he has submitted in writing a letter itemizing or calling attention to such deviations at time of submission and secured written approval from the Architect, nor shall such disposition of shop drawings relieve the Contractor from responsibility for error in shop drawings or schedules.

E. Working Plans: Submit working plans and hydraulic calculations in accordance with the provisions of this section, NFPA 13.

F. Material and equipment requiring Shop Drawing and Product Data Submittals shall include, but not be limited to:
   1. Valves.
   2. Pipe and fittings.
   3. Hangers and supports.
   5. Hydraulic calculations.
   7. Flow and tamper switches.
   8. Sprinkler heads.
   9. Wet pipe alarm valve and trim.
   10. Surface type fire department connection.
   11. Double check valve assembly.

G. Record Drawings: Prepare and submit record drawings.

H. Use the working drawings prepared under the provisions of this Section for the record drawings. Indicate valve tag numbers on the record drawings.

I. Contractor's Material and Test Certificates: Complete Certificates in their entirety and submit for review and approval before final submission of Operation and Maintenance Manuals. Incomplete Certificates will be rejected. If requested information on Certificate is not applicable, indicate "N/A."

J. Fire Protection Working Plans
   1. Definition: Working plans are the installation shop drawings required by NFPA Standard 13 and normally prepared by the installing sub-contractor.
   2. Prepare working plans according to the requirements of NFPA Standard 13D. Working plans and hydraulic calculations shall be prepared, stamped and sealed by a professional engineer registered in the Commonwealth of Massachusetts.
3. Submit working plans to the authorities having jurisdiction for approval, including:
   a. Building Department.
   b. Fire Department.
   c. Owner's Insurance Underwriter.
   d. Engineer.

4. Deviation from the approved plans will require re-approval by the reviewing authorities.

5. Submit working plans and hydraulic calculations to the Architect in one complete package, after review by the other authorities having jurisdiction. Plans submitted without review stamps or hydraulic calculations will be returned without review.

K. Hydraulic Calculations: Submit calculations complete with a piping schematic out to the confirmed water supply. Indicate hydraulic reference points on the working plans or on the schematic out to the water supply.

L. Water Supply Test Data
   1. The following water supply data is included as information available to bidders only and shall not be used for final design calculations unless data is less than one (1) year old. Perform hydrant flow test under the work of this Section for water supply characteristics to be used for hydraulic calculations.
   2. Flow Test Results:
      
      | Pressure Hydrant | Location: 12 Curve Street |
      | Static Pressure: | 98 psi |
      | Residual Pressure: | 57 psi |
      | Flow: | 530 gpm |
      | Date: | 6-3-15 |

M. This submittal shall be accurate and complete, as required in Division 1.

1.6 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Division 1.

B. The Fire Protection Contractor shall maintain, at the site, a current set of his drawings on which he shall accurately show the actual installation of all work provided under his Contract indicating any variation from the Contract Drawings, in accordance with the General Conditions and Supplementary General Conditions. Changes whether resulting from formal change orders or other instructions issued by the Engineer shall be recorded. Include changes in sizes, location, and dimensions of piping, equipment, etc.

C. The Fire Protection Contractor shall indicate progress by coloring-in various pipes and associated appurtenances exactly as they are erected. This process shall incorporate both the changes noted above and all other deviations from the original drawings whether resulting from job conditions encountered or from any other causes.

D. The marked-up and colored-up prints shall be used as a guide for determining the progress of the work installed. They shall be inspected periodically by the Engineer and Owner's
representatives and they shall be corrected if found either inaccurate or incomplete. This procedure is mandatory.

E. The Fire Protection Contractor shall meet at a minimum on a monthly basis, with the Owner's representative to transfer the information from his Fire Protection marked-up and colored-up prints to a set which will become the basis for preparation of as-built drawings.

F. Upon completion of the project, each Contractor shall submit his marked-up drawings to the Architect for review and comment. After the Engineer reviews and comments on this set of documents, each Contractor shall prepare as-built drawings on CAD. When the work is completed, each Contractor shall provide to the Architect for submittal to the Owner and disks with all documentation and a set of reproducible drawing plots marked "As-Built" drawings. The Contractor shall bear all costs of producing the CAD "As-Built" drawings, providing all necessary drawing changes and printing the reproducible drawings for the work under his charge.

1.7 OPERATION AND MAINTENANCE DATA

A. Submit under provisions of Division 1.

B. Operation Data: Operating instructions.

C. Maintenance Data: Maintenance schedules and Maintenance and repair procedures.

D. The Fire Protection Contractor shall thoroughly instruct the representative of the Owner, to the complete satisfaction of the Architect, in the proper operation of all systems and equipment provided by him. The Fire Protection Contractor shall make arrangements, via the Construction Manager, as to whom the instructions are to be given in the operation of the basic and auxiliary systems and the periods of time in which they are to be given. The Architect shall be completely satisfied that the representative of the Owner has been thoroughly and completely instructed in the proper operation of all systems and equipment before final payment is made. If the Architect determines that complete and thorough instructions have not been given by the Fire Protection Contractor to the Owner's representative, then the Contractor shall be directed by the Architect to provide whatever instructions are necessary until the intent of this paragraph of the specification has been complied with. All time required for Owner's instruction to satisfy the above requirements shall be included in this Contract. No extra compensation for such instructions will be allowed. The Fire Protection Contractor shall include in his bid 48 hours of instruction time to be given to the Owner's designated representative on the site.

E. Submit to the Architect for approval, a minimum of (6) typed sets, bound neatly in loose-leaf binders, of all maintenance and operating instructions for the installation, operation, care and maintenance of all equipment and systems. All data and literature furnished shall be specific for the make and model of equipment furnished. General non-specific catalog data will not be acceptable. Information shall indicate possible problems with equipment and suggested corrective action. The manuals shall be indexed for each type of equipment. Each section such as pumps, valves, sprinkler heads, etc., shall be clearly divided from the other sections. A sub-index for each section shall also be provided. The methodology of setting-up the manuals shall be submitted to the Architect and Owner through the Construction Manager for approval prior to final submission of manuals.
F. The instructions shall contain information deemed necessary by the Architect and shall include, but not be limited, to the following:

1. Field instructional equipment and systems operation for Owner's representative and maintenance personnel, by engineering staff of the Contractor. Minimum of 2 hours of instruction. Instruction shall include:
   a. Explanation of manual and its use.
   b. Summary description of the Fire Protection systems.
   c. Purpose of systems.

2. System
   a. Detailed description of all systems.
   b. Illustrations, schematics, block diagrams, catalog cuts and other exhibits.

3. Operations
   a. Complete detailed, step-by-step, sequential description of all phases of operation for all portions of the systems, including start-up, shutdown, adjusting and balancing. Include all posted instruction charts.

4. Maintenance
   a. Parts list and part numbers.
   b. Maintenance, lubrication and replacement charts and Contractor's recommendations for preventive maintenance, as applicable to his work.
   c. Troubleshooting charts for systems and components.
   d. Instructions for testing each type of part.
   e. Recommended list of on-hand spare parts.
   f. Complete calibration instructions for all parts and entire systems.
   g. Instruction for charging, filling, draining and purging, as applicable.
   h. General or miscellaneous maintenance notes.

5. Manufacturer's Literature
   a. Complete listing for all parts required for models actually furnished.
   b. Names, addresses and telephone numbers.
   c. Care and operation of all models actually furnished.
   d. All and only pertinent brochures, illustrations, drawings, cuts, bulletins, technical data, certified performance charts and other literature with the model actually furnished to be clearly and conspicuously identified.
   e. Internal wiring diagrams and engineering data sheets for all items and/or equipment furnished under each Contract.
   f. Guarantee and warranty data.

G. Furnish instructions for lubricating each piece of equipment. Instructions shall state type of lubricant, where and how frequently lubrication is required. Frame instructions under glass and hang in a location as directed by Architect.

1.8 MANUFACTURER'S REPRESENTATIVE AND COMMISSIONING OF SYSTEMS

A. Provide, at appropriate time or as directed by the Architect, the on-site services of a competent factory trained Engineer or authorized representative of particular manufacturer of equipment,
provided under this Contract, to instruct the Owner, inspect, adjust and place in proper operating condition any item provided by him, as applicable.

B. Commission and set in operating condition all major equipment and systems, such as the pump, controller, etc., in the presence of the equipment manufacturer's representatives, as applicable, and the Owner and Architect's representatives. In no case will major systems and equipment be commissioned by any of the Contractor's forces alone, without the assistance or presence of the equipment manufacturers.

C. A written report shall be issued by the particular equipment manufacturer and the Contractor summarizing the results of the commissioning and performance of each system for the Architect's record. No additional compensation will be allowed for any Contractor for such services.

D. The Fire Protection Contractor shall prepare and submit to the Architect for acceptance, a schedule of anticipated system commissioning. No system shall be commissioned without prior acceptance of the schedule by the Architect and Owner. No system shall be commissioned prior to submittal and acceptance of the operations and maintenance manuals.

1.9 THE FIRE PROTECTION CONTRACTOR

A. The Fire Protection Contractor shall base his bid on site examinations performed by him. This requirement is mandatory. The Fire Protection Contractor shall visit the site where new and renovation work is scheduled to be performed, visit the existing building areas, inspect piping systems where new-to-existing connections will be made, etc., to ascertain for himself the amount of work required and complexity of the installation, as well as determine the phased installation requirements. The Fire Protection Contractor shall not hold the Architect or his agents, consultants, employees responsible for, or bound by, any schedule, estimate or for any plan thereof. The Fire Protection Contractor shall study all Contract Documents included under this Contract to determine exactly the extent of work provided under each Section, as well as to ascertain the difficulty to be encountered in performing the work, as shown on the drawings, outlined herein, and in installing new equipment and systems and coordinating the work with the other Trades and existing conditions.

B. The Contractor shall faithfully execute his work according to the terms and conditions of the Contract and specifications and shall take all responsibility for and bear all losses resulting to him in the execution of his work.

C. The Contractor shall be responsible for the location and performance of work provided under his Contract as indicated on the Contract Documents or required by actual job conditions. All parties employed directly or indirectly by the Contractor shall perform their work according to all the conditions as set forth in these specifications.

D. Furnish all materials and do all work in accordance with these specifications and any supplementary documents provided by the Engineer. The work shall include every item shown on the drawings and/or required by the specifications or required by actual job conditions, as interpreted by the Engineer. The Contractor shall coordinate and obtain Owner approval prior to any utility shutdowns. All work and materials furnished and installed shall be new and of the best quality and workmanship. Cooperate with the Architect so that no error or discrepancy in
the Contract Documents shall cause defective materials to be used or poor workmanship to be performed.

1.10 COORDINATION OF WORK

A. The Fire Protection Contractor shall compare his drawings and specifications with those of other Trades existing conditions, as well as the Architectural drawings and specifications, and report any discrepancies between them to the Architect and obtain from the Architect written instructions for changes necessary in the fire protection work. All work shall be installed in cooperation with other Trades installing interrelated work. Before installation, the Fire Protection Contractor shall make proper provisions to avoid interferences in a manner approved by the Architect. All changes required in the Fire Protection work caused by the Fire Protection Contractor's neglect or lack of planning, understanding of the complexity of this project or Owner's instructions, shall be made by him at his own expense, to the Architect's satisfaction. The Fire Protection Contractor must include in his bid sufficient dollar amounts to coordinate the work of this Contract. This requirement shall include, but not be limited to, producing the coordination drawings, as many times and as many drawings as required, to ensure serviceability of equipment, as approved by the Owner.

B. Locations of piping and equipment shall be adjusted to accommodate the work with interferences anticipated and encountered in the field. The Fire Protection Contractor shall determine the exact routing and location of his systems prior to fabrication or installation of any system component. Accurate measurements and coordination drawings will have to be completed to verify dimensions and characteristics of the various systems installations.

C. Lines which pitch shall have the right-of-way over those which do not pitch. For example, sanitary waste piping shall normally have the right-of-way. Lines whose elevations cannot be changed shall have the right-of-way over lines whose elevations can be changed.

D. Offsets, transitions and changes of direction in all systems shall be made as required to maintain proper headroom and pitch of sloping lines as well as to avoid existing field conditions, whether or not indicated on the drawings. The Fire Protection Contractor shall provide auxiliary drains as required for his work to effect these offsets, transitions and changes in direction.

E. All work shall be installed in a way to permit removal (without damage to other parts) of HVAC coils, filters, control appurtenances, filters, and all other system components provided under this Contract requiring periodic replacement or maintenance. All piping shall be arranged in a manner to clear the openings of swinging overhead access doors as well as ceiling tiles. All work shall be done to allow easy access for maintaining equipment. The Owner and Engineer will require proof via the preparation of large scale sections and part plans that valves, etc., are accessible after the work is completed. Any items in the field discovered to be in non-compliance shall be removed and relocated, as required, and as directed by the Engineer.

F. The Contract Drawings are diagrammatic only intending to show general runs and locations of piping equipment and specialties (existing and new) and not necessarily showing all required offsets, details and accessories and equipment to be connected or encountered in the way of the new work. All work shall be accurately laid out with other Trades to avoid conflicts and to obtain a neat and workmanlike installation which will afford maximum accessibility for operation, maintenance and headroom. Provide all system components, offsets, or other fittings
as necessary to allow for a complete and operable system, at no extra cost to the Owner.

G. Where discrepancies in scope of work as to what Trade provides items, such as disconnects, flow switches, etc., elevation conflicts, missing valves, such conflicts shall be reported to the Architect during bidding and prior to signing of the Contract. If such action is not taken, the Fire Protection Contractor shall furnish such items as part of his work as necessary, for complete and operable systems and equipment, as determined by the Engineer.

H. The Fire Protection Contractor shall coordinate the installation of all Fire Protection equipment and any catwalks or service platforms provided by the General Contractor.

I. Where drawing details, plans, specification requirements are in conflict and where pipe sizes of same pipe are shown to be different between plans and/or between plans and sections or details, the most stringent requirement will be included in the Contract. Fire Protection systems and equipment called for in the specification and/or shown on the drawings shall be provided under this Contract as if it were required by both the drawings and specifications. However, prior to ordering or installation of any portion of work which appears to be in conflict, such work shall be brought to Engineer's attention for direction as to what is to be provided.

J. Obtain approval of locations of all devices from Engineer in the field. Additional piping fittings, etc., shall be provided to accomplish the above requirement, as required, all as part of this Contract, at no extra cost to the Owner. This requirement necessitates that the Fire Protection Contractor review the architectural drawings and the drawings of other Trades during bidding to ascertain the extent of all requirements, and interface between the Trades and scope of work.

K. The Fire Protection Contractor shall coordinate his work with other Trades' work so that all equipment and systems can be easily, safely and properly serviced and maintained. It is imperative that service personnel can safely access all equipment.

1.11 GIVING INFORMATION

A. The Contractor shall keep himself fully informed as to the shape, size and position of all openings required for his apparatus and shall give information to the Engineer and other Contractors sufficiently in advance of the work so that all openings may be built in advance.

1.12 EQUIPMENT AND MATERIALS

A. Equipment and materials shall be delivered to the site and stored in original sealed containers, suitably sheltered from the elements, but readily accessible for inspection by the Architect until installed. All items subject to moisture damage shall be stored in dry, heated spaces.

B. The Contractor shall have his equipment tightly covered and protected against dirt, water and chemical or mechanical injury and theft. At the completion of the work, equipment and materials shall be cleaned, polished thoroughly and turned over the Owner in a condition satisfactory to the Engineer. Damage or defects developing before acceptance of the work shall be made good at the Contractor's expense.

C. The Contractor shall make necessary field measurements to ascertain space requirements, for equipment and connections to be provided under his Trade and shall furnish and install such
sizes and shapes of equipment to allow for the final installation to conform to the drawings and specifications.

D. The manufacturers listed within this specification have been preselected for use on this project.

E. Manufacturers' directions shall be followed completely in the delivery, storage, protection and installation of any equipment. Promptly notify the Engineer in writing of any conflict between any requirements of the Contract Documents and the manufacturer's directions and obtain the Engineer's written instructions before proceeding with the work. Should the Contractor perform any work that does not comply with the manufacturer's directions or written instructions from the Engineer, he shall bear all costs arising in correcting any deficiencies that should arise.

F. The Contractor shall furnish and install all equipment, accessories, connections and incidental items necessary to fully complete the work under his Contract for use, occupancy and operation by the Owner.

G. Where equipment of the acceptable manufacturers requires different arrangement or connections from those shown, it shall be the responsibility of the Contractor to install the equipment to operate properly and in harmony with the original intent of the drawings and specifications. When directed by the Engineer, the Contractor shall submit drawings showing the proposed installation. If the proposed installation is approved, the Contractor shall make all necessary changes in all affected related work provided under other Sections including location of roughing-in connections by other Trades, electrical requirements, piping, supports, insulation, etc. All changes shall be made at no increase in the Contract amount or additional cost to the other Trades and/or Owner.

H. All equipment and materials required for installation under these specifications shall be new and without blemish or defect. Equipment and materials shall be products which will meet with the acceptance of the Authorities having jurisdiction over the work and as specified hereinbefore. Where such acceptance is contingent upon having the products listed or labeled by FM, UL or other testing laboratories, the products shall be so listed or labeled. Where no specific indication as to the type or quality of material or equipment is indicated, a first class standard article shall be provided.

I. All equipment of one type (such as valves, flow switches, etc.) shall be the product of one manufacturer.

1.13 CUTTING AND PATCHING

A. In addition to the requirements outlined herein for cutting and patching, the Fire Protection Contractor shall be responsible for core drilling all holes required for work under his Contract and with the written approval of the Architect/Engineer.

B. In no case shall the Contractor cut into any structural elements without the written approval of the Architect/Engineer.

1.14 USE OF PREMISES
A. The Contractor shall confine all of his apparatus, storage of materials and construction to the limits as directed by the Architect and he shall not encumber the premises with his materials.

B. In storing materials within areas (structure or ground), or when used as a shop, the Contractor shall consult with the Construction Manager (C.M.) and shall restrict his storage to space designated for such purposes. The Contractor will be held responsible for repairs, patching or cleaning arising from any unauthorized use of premises.

C. Notwithstanding any approvals or instructions which must be obtained by the Contractor from the Architect/Engineer in connection with use of premises, the responsibility for the safe working conditions at the site shall remain the Contractor's and the Architect/Engineer or Owner shall not be deemed to have any responsibility or liability in connection therewith.

1.15 PROTECTION

A. All materials such as valves, fittings, piping, etc., shall be properly protected and all piping openings shall be temporarily closed by the Contractor installing same, so to prevent obstruction and damage. To protect the equipment, temporary covers of substantial nature shall be provided to ensure that items are not damaged. The Contractor shall take precautions to protect his materials from damage and theft.

B. The Contractor shall furnish, place and maintain proper safety guards for the prevention of accidents that might be caused by the workmanship, materials, equipment or electrical systems provided under his Contract.

1.16 DAMAGE TO OTHER WORK, CORRECTION OF WORK AND EXTRA WORK

A. The Contractor shall be held responsible and shall pay for all damages caused by his work to the new building structure, equipment, piping, duct systems, etc., and all work and finishes installed under this Contract in the building. Repair of such damage shall be done as herein before specified, at the expense of the Contractor and to the Engineer's satisfaction.

B. Promptly correct all work provided under this Contract and rejected by the Architect as defective or as failing to conform to the Contract Documents whether observed before or after completion of work and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected work.

C. No claim for extra work will be allowed unless it is authorized by the Architect in writing before commencement of the extra said work.

1.17 SLEEVES, PLATES, ESCUTCHEONS, FIRESTOPPING AND SMOKEPROOFING

A. Where pipes pass through concrete walls or floors, the Contractor shall provide and set individual sleeves for each pipe and all other work under his charge. Sleeves shall be of sufficient size to provide ½" minimum air space around the pipe, or insulation on covered lines passing through it. All openings shall be sealed, smokeproofed and made tight as outlined in items below. This Contractor shall be responsible for the exact location of sleeves provided under this Contract and shall coordinate all requirements for piping sleeves. In the event that failure to do so requires cutting and patching, it shall be done at this Contractor's expense.
B. This Contractor, for work under his charge, shall determine the diameter of each individual wall opening or sleeve before ordering, fabricating or installing.

C. Sleeves passing through lightproof or soundproof walls and floors and through firewalls shall be sealed and made tight using only approved materials and methods.

D. Sleeves and wall openings shall not be used in any portions of the building where their use would impair the strength or construction features of the building. This Contractor shall immediately bring to the Architect's attention any situation which may promote this condition.

E. Provide chrome plated brass escutcheons with set screw for exposed piping in all areas. In mechanical rooms use plain brass or cast iron escutcheons suitable for painting. All escutcheons shall be sized to fit the bare pipe or insulation in a snug and neat manner. They shall be of sufficient size to cover sleeved openings for the pipes and of sufficient depth to cover sleeves projecting above floors. Escutcheons shall be as manufactured by Beaton & Caldwell, Dearborn Brass, or Grinnell. All escutcheons shall be of 1-piece construction.

F. Pipe sleeves shall be made of Schedule 40 pipe, except as follows:
   1. Sleeves passing through non-fire or smoke rated drywall construction shall be 16 gauge galvanized steel.
   2. Openings passing through fire or smoke rated walls or floors shall be as required to maintain the fire or smoke rating of the wall or floor.

G. Sleeves shall be set as follows:
   1. Set sleeves in wet areas 1" above finished floor (6" at penthouses and mechanical rooms).
   2. Set sleeves in dry areas within walls flush with floor.
   3. Set sleeves to be flush with each side of finished wall.
   4. Sleeves shall be set securely in place before concrete is poured.

H. This Contractor shall firestop and/or smokestop the space between the sleeves provided under this Contract as follows:
   1. Through-Penetration Firestopping in Fire Rated Construction
      a. Systems or devices listed in the UL Categories XHCR and HXEL may be used, providing that they conform to the construction type, penetrant type, annular space requirements and fire rating involved in each separate instance, and that the system be symmetrical for wall applications. Systems or devices must be asbestos-free.
      b. Additional Requirements: Systems must withstand the passage of cold smoke either as an inherent property of the system, or by the use of a separate product included as a part of the UL System or device.
      c. Acceptable Manufacturers and Products
         1) Those listed in the UL Fire Resistance directory for the UL System involved, including 3M, Dow Corning, BioFire Shield or approved equal.
         2) All products must be from a single manufacturer.
   2. Smokestopping at Smoke Partitions
      a. Any system complying with the requirements for through penetration firestopping in fire rated construction, as specified in Item H1, is acceptable, provided that the system provides the required smoke seal.
3. Accessories
   a. Fill, void or cavity materials: As classified under the UL Category XHHW.
   b. Forming materials: As classified under UL Category XHKU in the Fire Resistance Directory.

I. The materials, installation procedures, clean-up, safety precautions and requirements shall be in accordance with manufacturers published information.

J. The space between sleeve and pipe shall be packed with oakum to within 2" of each face of the wall (to within 2" of top of sleeve at floors). The remaining space shall be packed and made watertight with water-proof mastic.

K. Piping which passes through exterior walls or foundation slabs on grade, shall have penetration closures of the modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall opening. Links shall be loosely assembled with bolts to form a continuous belt around the pipe and with a pressure plate under each bolt head and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely watertight seal between the pipe and wall, reducing chances of cathodic reaction between these members. The Plumbing Contractor, for work under his charge, shall determine the required inside diameter of each individual wall opening or sleeve before ordering, fabrication or installation. The inside diameter of the wall opening shall be sized to fit the pipe and assure a watertight joint. Where applicable, when installing seals, take into account the pipe O.D. if non-standard due to coating or jacketing.

1.18 MAINTENANCE SERVICE

A. Furnish service and maintenance of fire protection system for one year from Date of Substantial Completion.

1.19 EXTRA MATERIALS

A. Furnish under provisions of Division 1 and NFPA-13.

PART 2 - PRODUCTS

2.1 ACCEPTABLE PRODUCTS

A. Materials and equipment provided under this Section to make a complete installation shall be U.L. listed and/or FM-approved and in compliance with NFPA Standards.

B. Acceptable Manufacturers: Submit manufacturers not listed below for review and approval.
   1. OS&Y Valves: American Darling, Crane, Kennedy, Mueller, or Nibco.
   2. Butterfly Valves: Central, Grinnell, Kennedy, Milwaukee, Mueller, Nibco, or Victaulic.
   4. Sprinkler heads: Victualic, Reliable, or Viking
   5. Pipe hangers and supports: B-Line, Globe, Grinnell, Michigan, PHD or Tolco.
7. Expansion shields: U.S. Anchor, ITW Ramset, or Hilti Inc.
8. Inserts: B-line, Empire, Globe, Grinnell, Michigan, or Unistrut.
9. Alarm valves: Victualic, Viking, or Reliable
10. Backflow preventer: Ames, Watts, or Febco

2.2 PIPING, FITTINGS, AND JOINTS

A. Sprinkler Piping, Above Ground
1. Steel: 1-1/4" and smaller: ASTM A135 or A795 Schedule 40 black steel; 1-1/2" and larger: ASTM A135 or A795 Schedule 10 black steel. All piping and fittings will be rated for 175 psi working pressure. All piping and fittings for drains shall be galvanized.
2. CPVC: Use on residential floors only.

B. Fittings:
1. Malleable Iron: ANSI B16.3 - Class 150 and 250
2. Steel: ANSI B16.1 - Class 25, 125, 250 and 800
3. Cast Iron: ANSI B16.4 - Class 125 and 250

C. Grooved Fittings and Couplings:
1. Ductile iron housing clamps to engage and lock pressure-responsive, synthetic rubber sealing gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe.
   a. Rigid Type: Housings shall be cast with offsetting, angle-pattern bolt pads to provide system rigidity and support and hanging in accordance with NFPA 13. Tongue and recess rigid type couplings shall only be permitted if the contractor uses a torque wrench for installation. Required torque shall be in accordance with the manufacturer's recommendations. Contractor shall remove and replace any improperly installed joints.
      1) 1-1/4" thru 4": "Installation Ready" rigid type coupling designed for direct "stab" installation onto grooved end pipe without prior disassembly of the coupling equal to Victaulic FireLock® EZ Style 009.
      2) 5" and Larger: Standard rigid joint equal to Victaulic FireLock® Style 005 or Style 07 Zero-Flex®.
   b. Flexible Type: Use in seismic areas where required by NFPA 13. Victaulic Style 75, 004, or 77.
   c. Coupling gaskets shall be listed for use as follows:

<table>
<thead>
<tr>
<th>Fire Protection Service</th>
<th>Temperature Range</th>
<th>Gasket Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Systems</td>
<td>Ambient</td>
<td>FlushSeal® or EZ Style 009 design, Grade EPDM, Type A</td>
</tr>
<tr>
<td>Freezer Applications</td>
<td>-40°F to 0°F</td>
<td>FlushSeal®, Grade L, Silicone</td>
</tr>
<tr>
<td>Water/Wet Systems</td>
<td>Ambient</td>
<td>C-Shape or EZ Style 009 design, Grade EPDM, Type A</td>
</tr>
</tbody>
</table>

2. Flange Adapters: Victaulic flange adapters shall be ASTM A 536 ductile iron, flat faced, for incorporating flanged components with ANSI Class 125 and 150 bolt-hole patterns to a grooved piping system. Victaulic Style 741 or 744.
3. Compatibility: Couplings and fittings shall be of a single domestic manufacturer or shall
be certified as compatible by both manufacturers. Grooving tools shall be supplied by the same manufacturer as the grooved components.

2.3 VALVES

A. Valves shall be listed indicating valves capable of being fitted with a tamper monitoring switch.

B. Gate Valves: For working pressures of 175 psi.
   1. 2” and smaller: Threaded, non-shock, bronze body, solid taper wedge, bronze trim.
   2. 2-1/2” and larger: Flanged, non-shock, bronze mounted solid taper wedge, iron body, rising stem, handwheel.
   3. 2-1/2” and larger: Grooved, bronze mounted, resilient wedge, cast iron disc with EPDM coating, OS&Y, brass rising stem, handwheel. Victaulic Series 771 or approve equal.

C. Butterfly Valves:
   1. 2-1/2” and smaller: Threaded, bronze body, stainless steel disc and stem, integral supervisory tamper switch.

D. Ball Valves: Bronze body, chrome-plated brass ball, Teflon seats, brass gearbox with pre-wired supervisory switches, threaded or grooved ends. Victaulic Series 728 or approved equal.

E. Backflow Preventer:
   1. Fabricated steel body, removable bronze seat, independently operated spring loaded check valve with two U.L. listed OS&Y gate valves or butterfly valves.

2.4 SPRINKLER HEADS

A. Finished Ceiling:
   1. Type: Quick-Response residential sidewall 16’ x16’ coverage with matching push on escutcheon.
   4. Fusible Link: Glass bulb type temperature rated for specific area hazard.

B. Suspended/Finished Ceiling:
   1. Type: Quick-Response concealed residential 16’x16’ coverage pendent type with matching push on flat plate cover. (k=5.6)
   2. Head Finish: Brass.
   4. Fusible Link: Glass bulb type temperature rated for specific area hazard.

C. Spare Heads: Provide 20-gauge steel sprinkler head cabinets with red enamel finish. Furnish the quantities of spare sprinkler heads for each type installed as required by NFPA Standard 13. Furnish sprinkler wrench for each head type installed.

2.5 PIPE HANGERS AND SUPPORTS

A. Acceptable products: Hanger materials shall match piping material as required for dielectric isolation. All support systems are to be UL listed and FM approved.
B. Piping 2-1/2" and smaller: Carbon steel, adjustable swivel.

C. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded. Provide hanger rods sized according to the following schedule:

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Minimum Rod Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot; and smaller</td>
<td>3/8&quot;</td>
</tr>
</tbody>
</table>

D. Riser Clamps: Carbon steel riser clamp, black or galvanized finish.

E. Floor Supports: Schedule 40 black steel adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

2.6 WET-PIPE SPRINKLER SYSTEM

A. Provide complete UL-listed/FM-approved, wet-pipe sprinkler system to protect the entire building. The system shall consist of the following components:

1. Wet alarm valve.
2. Retard chamber with pressure switch.
4. Test and auxiliary drain valves.
5. Alarm test.
7. Sprinkler heads.
8. Main alarm flow switch.

B. Wet Alarm Valve: 300 psig working pressure, cast iron, bronze grooved seat with “O” ring seals, single hinge pin and latch design, with complete alarm trim.

2.7 HOSE CONNECTIONS

A. Provide complete connection assemblies with body, identified face plate, snoots, caps and chains, with threads to suit Newton Fire Department.

B. Fire Department connections:

1. Surface Mounted: Polished cast brass with escutcheon and one-way connection. Inlet shall have a clapper valve, and plug and chain. Identify: "Auto-Sprinkler ".

2.8 ALARM DEVICES

A. Water Flow Switches: Vane Switch for mounting horizontal or vertical, with two contacts rated 10 Amp at 120 volt AC, with adjustable retard.

B. Pressure Switches:

2. Supervisory Low Pressure: Potter-Electric Signal Co.

C. Supervisory Tamper Switches:
1. OS&Y Gate Valves: Tamper switch with two contacts rated 10 Amp at 120 volts AC.

D. Electric Bell: 24 VDC aluminum alloy red enameled alarm bell.

2.9 SPRINKLER ACCESSORIES

A. Alarm Testers: In place of the assembled inspector's test assembly, the following manufactured alarm testers may be used: Victaulic 718 TestMaster.

B. Ball Drips: Grinnell Model F775, Reliable Model C, or Viking Model B-1.

C. Pressure Gages: Water: 3-1/2 inch diameter, 0-300 psi. Reliable Model UA.

PART 3 - EXECUTION

3.1 GENERAL

A. This is a performance specification. It requires performance of design work, preparation and submission of drawings, procurement of approvals and provision of complete functional system of automatic sprinklers/standpipes. As a result, this Section serves dual purposes of providing specifications and indicating design criteria for Contractor's use and guidance in designing systems and preparing sprinkler drawings for approvals.

B. The contract documents intend to show only the scope of the design, the Fire Protection Contractor shall be responsible for the correct installation of this work in a manner satisfactory to the best practices of his trade to complete the scope of this subcontract in all respects. No roughing work shall be accomplished until the pertinent manufacturer's shop drawings are approved.

C. The location of piping as indicated on the Drawings, unless otherwise noted, is diagrammatic only, and the exact locations shall be determined in the field. The run and arrangement of all pipes shall be approximately as shown on the Drawings, as directed during installation, in strict accordance with NFPA Pamphlets, and as straight and direct as possible, forming right angles or parallel lines with building walls and other pipes, and neatly spaced. All risers shall be erected true and plumb, parallel with walls and other pipes, and neatly spaced. All horizontal runs of piping except where concealed in partitions, shall be kept as high as possible and close to walls. Where possible adjacent pipe lines, both heating and plumbing, shall be grouped in the same vertical or horizontal planes. All piping shall be concealed and concealed piping shall have a minimum number of fittings. Piping shall not interfere with the operation or accessibility of doors, windows, access panels, valves, H & V unit access, air flow patterns, or equipment, and shall not encroach on aisles or passageways. All piping shall be installed to preserve access to all valves, drains and equipment. Pipe will not be permitted to pass through footing, beams or ribs. Make such offsets and deviations from the Drawings as may become necessary to meet actual field conditions.

D. The Fire Protection Contractor shall be responsible for the correctness of field dimensions and
shall check for himself all grades, lines, measurements, and other data in any way affecting his work. He shall refer to the project phasing schedule together with architectural and structural drawings of other Trades for a full comprehension of the extent of the work to be performed and to avoid interference, and shall not be entitled to any extra compensation for any additional work or expense arising from his failure to do so. In case interference develops the Architect shall decide which work is to be relocated, regardless of which was first installed. Work installed by the Fire Protection Contractor which is improperly located and/or interferes with or modifies either the phasing schedule or the architectural or structural design, shall be changed as directed by the Architect/Engineer, and all costs incidental to such changes shall be paid by the Fire Protection Contractor.

E. The Fire Protection Contractor shall coordinate all his work with the work of all other Trades, and shall so arrange his work that there will be no delay in the proper installation and completion of any part or parts of each respective work wherein it may be interrelated with his, so that generally all construction work can proceed in its natural sequence without unnecessary delay, close coordination is also required with the HVAC, Plumbing and Electrical Contractors in areas serving these Trades. The Fire Protection contractor shall also participate with all other Contractors in the process to prepare a complete set of coordination drawings prior to installation of any systems.

F. Contact between piping and dissimilar metals such as hangers, building structural work, or equipment shall be avoided to prevent galvanic action.

G. Pipe shall be cut accurately to measurements established at the site and shall be worked into place without springing or forcing. All pipe, regardless of how cut throughout the job, shall be reamed smooth and all burrs removed before being installed. Pipe shall not be split, bent, flattened, nor otherwise injured either before or during the installation. Full lengths of pipes shall be used wherever possible and short lengths of pipe connected with couplings will not be permitted.

H. The Fire Protection Contractor shall use every precaution in the installation of all piping to prevent dirt, chips, or other foreign materials entering the inside of piping. All pipes shall be clean and blown out to the satisfaction of the Architect before closing of any line. Keep the ends of piping capped or blind flanged during the construction of the system to keep out dirt or other foreign matter. The plugs and caps are to remain until permanent and final installation is made. The use of paper, waste, rags and so forth to close openings will not be permitted.

I. Unions or flanges shall be installed at all equipment valves and at such other places as may be necessary to disconnect piping or at each piece of equipment or accessory which may have to be disconnected to make repairs.

J. Bushing will not be inserted in fittings for reduction in size where fittings of required size are manufactured.

K. The Fire Protection Contractor shall also provide the necessary data and supervision for the provision of all holes in the structure, and also for the installation of equipment foundations, including bolt hole templates, weights and manufacturer's recommendations for proper emplacement design. This shall be furnished to the Construction Manager and other related subtrades.
L. Equipment and accessories shall be set level, plumb and in proper alignment with reference to adjacent walls. All surfaces coming in contact with walls, floors or other equipment shall have properly planed surfaces with suitable contact on wall and floors.

M. Clips, hangers, clamps, supports and other attachments to surfaces to be fireproofed shall be installed, insofar as possible, before start of spray fiber work. Piping and equipment that interfere with proper application of fireproofing shall be installed after completion of spray fiber work. Patch and repair spray fireproofing cut or damaged during course of work specified under this Section. Trade responsible for damage shall bear cost of repair.

3.2 HANGERS AND SUPPORTS

A. Support all piping included in the Work of this Section with hangers and rods attached to the building structure. Hang piping in compliance with NFPA Standards and the requirements of this Section.

B. Space hangers and supports for horizontal steel sprinkler piping according to the following schedule:

<table>
<thead>
<tr>
<th>Pipe Size:</th>
<th>Maximum Hanger Spacing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/4 inches and smaller</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>1-1/2 inches to 3 inches</td>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

C. Hang sprinkler piping to support the weight of the water filled pipe plus 250 pounds at the hanger.

D. Provide steel angle supports attached to the building structure to support piping below ductwork.

3.3 INSTALLATION OF PIPING AND EQUIPMENT

A. Install the Work of this Section in compliance with the referenced NFPA Standards. Coordinate installation with work of other sections and install piping level or pitched back to main riser or low point drain. Provide drain valve on trapped piping. Install sprinkler heads with return bend drops to ceilings.

B. Install sprinkler piping and risers generally as shown on the Drawings. Run piping concealed above ceilings and within furred spaces. Take special care to locate risers within pipe chases as indicated on the drawings. Obtain approval from the Architect/Engineer for piping locations which require furrings not indicated on the Contract Drawings. Provide pressure gauges with shut-off cock at top and base of risers.

C. Provide inspectors test valve assembly for the system and pipe to outside.

D. Install equipment and products provided under this Section in compliance with the product listing and the manufacturer's installation instructions.
E. Install chrome-plated escutcheons where piping passes through finished surfaces.

F. Install equipment in accordance with manufacturer’s instructions.

G. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.

H. Install piping to conserve building space, and not interfere with use of space and other work.

I. Group piping whenever practical at common elevations.

J. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

K. Slope piping and arrange systems to drain to alarm valve. Use eccentric reducers to maintain top of pipe level.

L. Install piping in concealed spaces above finished ceilings and within walls.

M. Use galvanized pipe and fittings for all drain lines.

N. Install backflow preventer at height of 30 to 53 inches from the floor and a minimum of 12 inches from any wall.

O. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding. All finish coats of paint shall be provided and performed by the Painting Contractor.

P. Do not penetrate building structural members unless indicated.

Q. Provide sleeves and escutcheon plates when penetrating floors and walls. Seal pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required.

R. Die cut screw joints with full cut standard taper pipe threads with red lead and linseed oil or other non-toxic joint compound applied to male threads only.

S. Core drill or saw cut for floor and wall penetrations. No impact tools shall be used.

T. Furnish and install sprinkler guards wherever heads are located less than 8 feet above finished floor in mechanical, electrical and storage rooms.

U. Locate fire department connection with sufficient clearance from walks or obstructions, to allow full swing of fire department wrench handle. Locate center line of fittings a minimum of 36 inches above ground level.

V. Locate outside sprinkler electric bell on building wall outside sprinkler valve room.

W. Install valves with stems upright or horizontal, not inverted. Remove protective coating after installation.
X. Provide drain valves at main shut-off valves, low points of piping and apparatus.

Y. Flush entire piping system of foreign matter.

3.4 INSTALLATION AND SPACING OF SPRINKLER HEADS

A. Sprinkler Head Installation
   1. Sprinkler spacing, densities and design shall comply with NFPA and the Owner's Insurance Underwriter. Maximum head spacing shall be dependent on head type.
   2. Provide upright heads within stair at the top, bottom and each landing.
   3. Provide sprinkler head spray baffles to shield direct water spray from electrical equipment.

B. Provide additional heads as required by NFPA 13, including appendices to protect areas where ceiling head spray pattern is obstructed and below ducts and equipment 4 feet wide or wider. Mechanical room sprinkler layouts shall be based on existing ductwork layout.

3.5 HOSE CONNECTION INSTALLATION

A. Install check valve in fire department connection piping at point of connection to the system. Pitch Fire Department connection piping to drain. Provide automatic ball drip at low point and pipe discharge and spill into floor drain. Centerline of Siamese shall be between 2'-0" to 3'-6" above finish grade.

B. Install Fire Department valves between 3'-6" to 4'-6" above finish floor.

3.6 SIGNS

A. Signs and nameplates in accordance with NFPA standards and/or this specification shall be provided at all drains, test and alarm valves and other areas as required by NFPA Standards.

3.7 TESTING AND INSPECTION

A. This Contractor shall obtain and pay for all the inspection and tests required for this Section of the work. Defects discovered in work, materials and/or equipment shall be replaced at no cost to the Owner, and the inspection and test shall be repeated. When work is completed, this Contractor shall furnish a Certificate of Inspection and Approval to the Owner before final payment of the Contract will be allowed.

B. Test sprinkler piping and make watertight before painting and before concealment. Make partial tests as required, during the progress of the work. All tests shall be witnessed by the Owner's representative, Authorities Having Jurisdiction and a representative of the Engineer.

C. Test systems according to provisions of NFPA Standards and the additional requirements of the approving authority and this Section.
D. Sprinkler system shall be tested to a hydrostatic test of 200 psi or 50 psi higher than the normal working pressure of the system for (2) hours without loss as specified in NFPA 13.

E. This Contractor shall, with the parties noted herein, establish procedures to witness testing that are acceptable to the parties noted herein. All parties noted herein shall be notified in writing of the accepted testing procedure prior to any testing. This Contractor shall notify parties designated to witness testing at least 48 hours in advance of scheduled testing.

F. Conditions requiring testing in excess of the minimum requirements noted herein shall be performed in accordance with NFPA Standards and any requirements of Authorities Having Jurisdiction.

G. Should the Owner, Engineer or any Authority Having Jurisdiction require, this Contractor shall provide factory trained, manufactures authorized representatives to perform testing on any equipment and/or devices that may be an integral part of these Specifications.

H. Furnish to the Engineer completely executed test certificates with signatures of those required to witness testing. Test certificate forms shall follow NFPA formats as a minimum requirement.

I. Test and certify water flow, pressure and supervisory tamper switches.

J. Operating Working Test: Perform test and complete Contractor's material and test certificate.

K. Complete working tests of all systems in accordance with NFPA standards.

3.8 DEMONSTRATION

A. Provide systems demonstration under provisions of Division 1.

B. Demonstrate normal and abnormal modes of operation, and required responses to each. Two (2) hour minimum to be provided.

END OF SECTION 21 00 00
CITY OF NEWTON, MASSACHUSETTS
PURCHASING DEPARTMENT
purchasing@newtonma.gov
Fax (617) 796-1227

June 22, 2015

ADDENDUM #4

INVITATION FOR BID #15-126

MYRTLE VILLAGE AFFORDABLE HOUSING – PHASE 1

THIS ADDENDUM IS TO: Addendum serves to clarify, revise, and supersede information in the
Project Manual, Drawings, and previously issued Addenda for the Invitation For Bids issued on
May 28, 2015 in accordance with the attached.

All other terms and conditions of this bid remain unchanged.

PLEASE ENSURE THAT YOU ACKNOWLEDGE ALL ADDENDA ON YOUR
BID FORM. FAILURE TO ACKNOWLEDGE ALL ADDENDA COULD
RESULT IN REJECTION OF YOUR BID AS NONRESPONSIVE.

Thank you.

Nicholas Read
Chief Procurement Officer
SECTION 00 9113.04
ADDENDUM NO. 4

1.1 PROJECT INFORMATION

A. Project Name: Myrtle Village Affordable Housing - Phase 1.
B. Owner: Myrtle Village LLC, 21 Curve Street, West Newton, MA 02465.
C. Architect: Angelo A. Kyriakides, Architect P.C., P.O. Box 1068, Brockton, MA 02301-1068.
D. Date of Addendum: June 16, 2015.

1.2 NOTICE TO BIDDERS

A. This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
C. The date for receipt of Bids is unchanged by this Addendum, at same time and location.

1.3 ATTACHMENTS

A. This Addendum includes the following attached Sheets:

END OF DOCUMENT
BASEMENT LAYOUT

SCALE: 1/8" = 1'-0"

FERNANDEZ & ASSOCIATES
Fire Protection Engineers

63 Larkin Road
Byfield, Massachusetts 01922

Telephone 978-499-0172
Fax 978-465-2371

Website: www.fernandezassociates.com

PROJECT: MYRTLE VILLAGE
12 Curve St. - West Newton, MA

DESCRIPTION:
FIRE PROTECTION LAYOUT
CRAWL SPACE

CHECK BY: LFF
DRAWN BY: LFF
SKEW:

SCALE: 1/8" = 1'-0"
DATE: 06/15/15
REV. Dwg: FP-1

JOB NO. 630