PURCHASING DIVISION
CITY OF WORCESTER
MASSACHUSETTS 01608-1895
ROOM 201 - CITY HALL, 455 MAIN ST.
PHONE (508) 799-1220

SEALED BID INVITATION
(Supplies, Material, Equipment, Services)

AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER

SEALED BID NO. CR-8448-J6
DATE: May 20, 2025
CITY OF WORCESTER **Christopher J. Gagliastro, MCPPO** **Purchasing Agent**
BUYER: Jerry S. Kucera

NOTICE TO BIDDERS
TERMS AND CONDITIONS

All bids are subject to the terms and conditions and specificity herein set forth except where specifically deleted by the City of Worcester in Section No.6 below.

COMPLETE ORIGINAL COPY (including ALL pages) OF THIS BID MUST BE SUBMITTED IN A SEALED ENVELOPE:

DATE: JUNE 11, 2025 TIME: 10:00 A.M. LOCAL TIME

PLACE: Purchasing Division, Room 201, City Hall, Worcester, Massachusetts

MARK SEALED ENVELOPE **"Sealed Bid No. CR-8448-J6, Waterworks Supplies / DPWP"**

The name and address of the bidder must appear in the upper left-hand corner of the envelope. The City of Worcester is not responsible for bids not properly marked.

GENERAL

1. This Bid Invitation covers: furnish and deliver waterworks supplies (pipe & fittings) as per the attached requirements and specifications of the City of Worcester Department of Public Works & Parks for a period of one (1) year from July 1, 2025 through June 30, 2026 and at the sole discretion of the City to renew for a second and third year. The option to be determined near the end of the current contract period. See page 10 for extension option information.

2. A certified check or bid bond made payable to the "City Treasurer, City of Worcester" in the Amount of $ N/A must accompany this bid.

3. All bids received will be publicly opened and read in the Bid Room at City Hall at date and time shown above. **NO BID WILL BE ACCEPTED AFTER TIME AND DATE SPECIFIED**

4. A performance bond in the amount of $ N/A of the total dollar award is required.
5. A payment bond in the amount of $ N/A of the total dollar award is required.

6. All terms and conditions are applicable to this proposal except the following section numbers which are hereby deleted from this invitation: all apply

7. **Other: Please go to http://www.worcesterma.gov/e-services/bids/closed-bids to obtain results.**

   Questions pertaining to this bid must be directed to Jerry S. Kucera via e-mail at kucerajs@worcesterma.gov

8. The following meanings are attached to the defined words when used in this bid form.
   (a) The word "City" means The City of Worcester, Massachusetts.
   (b) The word "Bidder" means the person, firm or corporation submitting a bid on these specifications or any part thereof.
   (c) The word "Contractor" means the person, firm or corporation with whom the contract is made by carrying out the provisions of these specifications and the contract.
   (d) The words "Firm Price" shall mean a guarantee against price increases during the life of the contract.

9. Any prospective bidder requesting a change in or interpretation of existing specifications of terms and conditions must do so within five (5) days (Saturdays, Sundays and Holidays excluded) BEFORE scheduled bid opening date. All requests are to be in writing to the Purchasing Division (or e-mailed at: kucerajs@worcesterma.gov). No changes will be considered or any interpretation issued unless the request is in our hands within five (5) days (Saturdays, Sundays and Holidays excluded) BEFORE scheduled bid opening date.

10. The contractor will be required to indemnify and save harmless the City of Worcester, for all damages to life and property that may occur due to his negligence or that of his employees, subcontractors, etc., during this contract.

11. The Contract Agreement will be in the form customarily employed by the City of Worcester and is on file in the Purchasing Division at City Hall.

12. Bids which are incomplete, not properly endorsed, or signed, or otherwise contrary to these instructions will be rejected as informal by the Purchasing Agent. **Conditional bids will not be accepted.**

13. The Bidder must certify that no official or employee of the City of Worcester, Massachusetts is pecuniarily interested in this proposal or in the contract which the bidder offers to execute or in expected profits to arise therefrom, unless there has been compliance with provisions of G.L. C. 43 Sec. 27, and that this bid is made in good faith without fraud or collusion or connection with any other person submitting a proposal.

14. As the City of Worcester is exempt from the payment of Federal Excise Taxes and Massachusetts Sales Tax, prices quoted herein are not to include these taxes.

15. All prices are to be firm F.O.B. Destination, City of Worcester, Massachusetts, unless otherwise indicated by the City. **Time reserved for award is ninety days.**

16. In case of error in the extension prices quoted herein, the unit price will govern.

17. It is understood and agreed that should any price reductions occur between the opening of this bid and delivery of any order, the benefit of all such reductions will be extended to the City.

18. The City of Worcester reserves the right to reject any and all bids, wholly or in part, and to make awards in a manner deemed in the best interest of the City.

19. Awards will be made to the bidder quoting the lowest net price in accordance with the specifications.

20. The supplier will be bound by all applicable statutory provisions of law of the Federal Government, the Commonwealth of Massachusetts, the City of Worcester, and the Department of Public Safety of the Commonwealth of Massachusetts.

21. Any bid withdrawn after time and date specified, the bidder shall forfeit deposit on bid as liquidated damages.

22. The contractor will not be permitted to either assign or underlet the contract, not assign either legally or equitably any monies hereunder, or its claim thereto without the previous written consent of the City Treasurer and of the Purchasing Agent of the City of Worcester.

23. If this bid shall be accepted by the City, and the bidder shall fail to contract as aforesaid and to give a bond in the amount as specified in Section 4, within ten (10) days, (not including Sunday or a legal Holiday) from the date of the mailing of a notice from the City to him/her, according to the address given herewith, that the contract is ready for signature, the City may by option determine that the bidder has abandoned the contract and thereupon the

proposal and acceptance shall be null and void and the bid security accompanying this proposal shall become the property of the City as liquidated damages.

24. When quoting, the bidder shall submit a signed copy of this bid form, and if bid accepted by the City shall constitute part of the contract of purchase. Do not detach any part of this form 30B (Sealed Bid Goods & Services) when submitting a bid. Bidder must sign and return complete form 30B (Sealed Bid Goods & Services).

25. If in the judgment of the Purchasing Agent any property is needlessly damaged by an act or omission of the contractor or his/her employees, servants or agent, the amount of such damages shall be determined by the Purchasing Agent of the City of Worcester and such amount shall be deducted from any money due the contractor or may be recovered from said contractor in actions at law.

26. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents and/or Acts of God.

INSURANCE AND WORKER'S COMPENSATION

27. COMMERCIAL GENERAL LIABILITY INSURANCE: Contractor to supply the City of Worcester with certificates of insurance evidencing general liability coverage of not less than $ 1,000,000.00 per occurrence / $ 2,000,000.00 aggregate.

28. AUTOMOBILE LIABILITY INSURANCE: Contractor to supply the City of Worcester with certificates of insurance evidencing automobile liability coverage, bodily injury and property damage combined single limit, of $ 1,000,000.00 (all owned, hired, and non-owned autos).

29. COMPENSATION INSURANCE: The contractor shall furnish the City of Worcester with certificates showing that all of his/her employees who shall be connected with this work are protected under statutory worker's compensation insurance policies.

30. The Contractor shall carry public liability insurance with an insurance company satisfactory to the City so as to save the City harmless from any and all claims for damages arising out of bodily injury to or death of any person or persons, and for all claims for damages arising our of injury to or destruction of property caused by accident resulting from the use of implements, equipment or labor used in the performance of the contractor or from any neglect, default or omission, or want of proper care, or misconduct on the part of the Contractor or for anyone of his employ during the execution of the contract.

31. Prior to starting on this contract, the Contractor shall deposit with the Contracting Officer certificates from the insurer to the effect that the insurance policies required in the above paragraphs have been issued to the Contractor. The certificates must be on a form satisfactory to the Purchasing Agent.

32. Except as may otherwise be stated herein, the Contractor shall also carry bodily injury and property damage insurance in an amount not less than those set forth above covering the operation of all motor powered vehicles owned or operated by the Contractor and engaged in this contract.

DISCOUNT

33. Prompt pay discounts will be considered when determining the low bid except when discounts are for a period of less than 30 days. In this event discounts will not be taken into consideration when determining low bid.

34. Time, in connection with discount offered, will be computed from date of completion and/or delivery and acceptance at destination, or from date correct bill or voucher properly certified by the contract is received if the latter date is later than the date of completion and acceptance and/or delivery and acceptance.

GUARANTEE

35. The bidder to who a contract is awarded guarantees to the City of Worcester all equipment, materials and or workmanship for a period of one (1) year after final inspection and acceptance and shall replace promptly any defective equipment, materials and/or workmanship required without additional cost to the City.

DELIVERIES AND COMPLETION

36. It is understood and agreed that in the event of failure on the part of the bidder to indicate date of delivery and/or completion, delivery and/or completion will be made within twelve (12) days from date of notification. Should the successful bidder fail to make delivery or complete contract within time specified, the City reserves the right to make the purchase on such orders at the open market and charge any excess over contract price to the account of the successful bidder, who shall pay the same.

37. The contractor shall familiarize himself with the location and facilities for storage.

38. The City through its Purchasing Division reserves the right to divert delivery from one location to another, and to allow for any change in operating conditions or for any other cause not now foreseen and to proportion deliveries according to available storage facilities.

SAMPLING AND ANALYSIS

39. Each bidder must state the commercial name of the product quoted, name, and address of operator or agent from whom the product will be purchased and in addition shall furnish an analysis of the product, date of analysis, by whom made and their address.

40. Samples of the product to be delivered may be taken by a representative of the City, either prior to delivery or while it is being delivered in the storage facilities at destination, or will be taken from the storage facilities to which the product has been delivered as determined from time to time by the Purchasing Agent. Bidder agrees to furnish the necessary manual labor, without additional cost required to assemble the physical samples, which is to be performed under the direction of the City representative.

41. The representative of the City taking the samples shall be given the opportunity, while sampling, to affix his or her signature to the delivery slip each item represented in his/her sample.

42. Any product after the sampling and analysis, not found meeting the requirements of the contract shall be sufficient cause for the cancellation of the contract at the option of the Purchasing Agent.

43. If any product is found that does not meet the analysis submitted by the bidder in his/her proposal, the Purchasing Agent may, at his or her option, exercise his/her right to reject the product and require that all or any part thereof shall be removed promptly by and at the expense of the contractor and replace it forthwith with a product satisfactory to the Purchasing Agent, or to retain the product and compensate the contractor in an amount as determined by the Purchasing Agent and the City Manager.

44. It is understood and agreed that it shall be a material breach of any contract resulting from this bid for the Contractor to engage in any practice which shall violate any provisions of Massachusetts General Laws, Chapter 151B, relative to discrimination in hiring, discharge, compensation, or terms, conditions or privileges of employment because of race, color, religious creed, national origin, sex, age or ancestry.

45. The undersigned as bidder, declares that the only parties interested in this proposal as principals are named herein; that this proposal is made without collusion with any other person, firm or corporation, that no officer or agent of the City is directly or indirectly interested in this bid; and he/she proposes and agrees that if this proposal is accepted he/she will contract with the City in accordance with the specifications, also the terms and conditions as spelled out in this bid form.

46. No Person, including but not limited to corporations, partnerships, limited partnerships or limited liability corporations, shall be eligible to receive a contract under this invitation to bid and/or requires for proposal if that person has been convicted of any felony offense involving the distribution of controlled substances as that term is defined under Chapter 94C of the General Laws and, for contracts to be performed for on-site services to the Worcester Public Schools, if that person or any person to be employed by that person in the performance of such on-site services has been convicted of a “sex offense” or a “sex offense involving a child” or a “sexually violent offense” or would meet the definition of “sexually violent predator” as those terms are defined in Section 178C of the General Laws and who must register with the sex offender registry board.

47. The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ for work or services relating to this contract any unfit person or anyone not skilled in the task assigned to him. In light of the fact that the performance of this contract requires the Contractor and its employees to have significant interaction with the public, the Contractor shall require all employees who may perform services under this contract to conduct themselves in a courteous, professional manner. If the Contractor is notified by the Contract Officer that any person engaged upon the work is incompetent, unfaithful, disorderly, discourteous, or otherwise unsatisfactory, then such person shall be discharged from providing services or work pursuant to this contract. Without limiting the generality of the foregoing, intimidation, threats and/or violent conduct of any kind or nature directed to members of the public are absolutely prohibited. Failure to comply with this requirement shall be grounds for termination of the contract.

48. The Contractor's performance may be evaluated on an ongoing basis including but not limited to consideration of complaints received from members of the public. In order to facilitate this evaluation, the Contractor shall provide the City with documents and records upon request. The Contractor shall further obtain from its employees authorization that appropriate City personnel may obtain all available criminal offender information ("CORI") from the Criminal History Systems Board. A high number of unresolved complaints, any number of complaints that are particularly severe, or employment of individuals who have been convicted or assault or other violent crimes shall be grounds for the early termination or non-renewal of the contract by the City.

49. The procurement officer shall award the contract to the lowest responsible and responsive bidder. The term "responsible bidder" means "a person who has the capability to perform fully the contract requirements, and the integrity and reliability which assures good faith performance." Consistent with its duty to maintain public order and promote public safety, the City has determined that this contract is of a type and nature so as to be particularly sensitive due, at least in part, to the contractor's inherent access and dealings with the members of the general public. Therefore, the City has concluded that additional scrutiny is justified as it determines whether a particular bidder is responsible, having the integrity and reliability to properly perform the requested services. This may entail consideration of the contractor's system of oversight, training and supervision of its employees, including but not limited to its requirement of a high standard of customer service and courtesy in its dealings with the public. The bidder's care and diligence in hiring and assigning its employees will also be considered. In making its determination, the City reserves the right to examine any and all information at its disposal, including but not limited to prior City contracts, the experiences and information obtained from current and former customers (whether identified by the bidder as references or not), as well as other sources available to the City, including but not limited to court documents, newspapers, financial reports (such as DUNS), and certain police data and reports.

50. The Contractor, acting through its owner(s) or any of its employees, or its agents or sub-contractors and any of their employees, shall not engage in any behavior, whether during the course of its duties under this contract or at any other time, that is illegal, criminal or otherwise shocking or offensive to the general public. The determination whether any particular behavior is illegal, criminal or shocking to the general public shall rest in the sound judgment of the Contracting Officer or the City Manager. In making such determination, the Contracting Officer or the City Manager shall apply the general standards of the community. No criminal conviction or formal charges shall be required to make such determination. Such behavior need be something more than trivial and something which would cause the general public to have concerns either about the safety of individuals coming in contact with the Contractor or about the character and integrity of the individuals with which the City does business. Violation of this provision shall be grounds for immediate and unilateral termination of this contract by the City upon five days' notice as otherwise provided herein

GIVE FULL NAMES AND RESIDENCES OF ALL PERSONS INTERESTED IN THE FOREGOING PROPOSAL.

(NOTICE: Give first and last name in full; in case of corporations, give corporate name and names of President, Treasurer, and Manager; and in case of firms give names of the individual members)

Name Address Zip Code

_____

_____

_____

_____

KINDLY FURNISH THE FOLLOWING INFORMATION REGARDING BIDDER:

(1) If a Proprietorship

Name of Owner _____

Business Address _____

Zip Code _____ Telephone No. _____

Home Address _____

Zip Code _____ Telephone No. _____

(2) If a Partnership
Full names and addresses of all partners

Name Address Zip Code

_____

_____

_____

Business Address _____Zip Code _____

Tel. No. _____

(3) If a Corporation

Full Legal Name _____

State of Incorporation _____ Qualified in Massachusetts ? Yes _____ No _____

Principal Place of Business _____
Street P.O. Box

_____
City/Town State Zip

Telephone No. _____

Place of Business in Massachusetts _____
Street P.O. Box

_____
City/Town State Zip

Telephone No. _____

GIVE THE FOLLOWING INFORMATION REGARDING SURETY COMPANY

Full Legal Name of Surety Company _____

State of Incorporation _____ Admitted in Massachusetts ? Yes _____ No _____

Principal Place of Business _____
Street P.O. Box

_____
City/Town State Zip

Place of Business in Massachusetts _____
Street P.O. Box

_____
City/Town State Zip

Telephone No. _____

NOTE
The Office of the Attorney General, Washington, D.C. requires the following information on all bid proposals amounting to $1,000.00 or more.

F.I.D. Number of bidder _____

This number is regularly used by companies when filing their "EMPLOYER'S FEDERAL TAX RETURN, U.S." Treasury Department Form 941.

AUTHORIZED SIGNATURE OF BIDDER _____ TITLE _____
PLEASE SIGN

DATE _____ BID SECURITY $_____

The name of Customer Service Representative and the Contract Administrator responsible for servicing this account in the event of contract award are:

_____ _____
NAME (PLEASE PRINT) *Customer Service Rep.* TEL. NO.

_____ _____
NAME (PLEASE PRINT) *Contract Administrator* TEL. NO.

FAX NUMBER **FAX #** _____

E-MAIL (Customer Service Rep.): _____

E-MAIL (Contract Administrator): _____

UNDER MASSACHUSETTS GENERAL LAWS, CHAPTER 30B: SECTION 10, THE FOLLOWING CERTIFICATION MUST BE PROVIDED:

Section 10. A person submitting a bid or a proposal for the procurement or disposal of supplies, or services to any governmental body shall certify in writing, on the bid or proposal, as follows:

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

(Please Print) _____
Name of Person Signing Bid

_____
Signature of Person Signing Bid

_____
Company

No award will be made without vendor certification of the above.

Bidders must state and identify the product offered, such as manufacturer's name, trade name, brand name and quality next to each item. WE MUST KNOW WHAT HAS BEEN OFFERED.

The quantities shown herein are estimated only and the Contractor will be required to furnish all quantities ordered by the City during the period of the contract.

YES X NO_____

Delivery to be made to: _DPW & Parks Locations as required (see shipping & delivery instructions in specifications)

This Bid includes addenda numbered _____

NO PRICE ADJUSTMENTS ALLOWED. PRICES QUOTED ARE FINAL. CHECK BEFORE SIGNING!

BIDDER TO COMPLETE ITEMS BELOW

Item No.	Estimated Annual Quantity	Description			Unit Price	Total Amount
		Furnish and deliver waterworks supplies as per the attached requirements and specifications of the City of Worcester Department of Public Works & Parks **Bidders may bid on any or all groups. Award to be made by group. Bidder must bid all items per group.** ***Any additional waterworks supply items not specifically listed herein may be purchased from awarded vendors at a cost not to exceed 10% over vendor's net cost. City reserves the right to audit invoices for pricing accuracy. Vendor's invoice shall be prepared in a manner that City can determine cost plus percentage on these items.** **Questions pertaining to this bid must be directed to Jerry S. Kucera at kucerajs@worcesterma.gov**				**Refer to Pricing Pages**

TERMS, PROMPT PAY DISCOUNT _____% 30 DAYS, NET 45 DAYS.

DELIVERY AND/OR COMPLETION TO BE MADE WITHIN _____ DAYS FROM DATE OF NOTIFICATION BY THE CITY.

NAME OF BIDDER_____

DISCLOSURE OF CONTRACT RENEWAL

This contract may be renewed for a second and third year at the sole discretion of the City of Worcester, the option of which will be determined at the end of the current contract year.

In no event will increase exceed _____ % for the second contract year.
(TO BE COMPLETED BY BIDDER)

In no event will increase exceed _____ % for the third contract year.
(TO BE COMPLETED BY BIDDER)

_____ _____
Name Date

_____
Title

IF VENDOR DOES NOT WISH TO BE CONSIDERED FOR A SECOND AND THIRD YEAR OPTION, PLEASE INDICATE BY CHECKING THIS BOX: ☐

IMPORTANT

It is understood and agreed, that failure by the bidder to complete the above increase statement, it is the bidders intent to accept a second and third year option at zero (0) percent increase.

All other Terms and Conditions to remain the same.

WATER WORKS SUPPLIES SPECIFICATIONS & DETAILS

GROUP 1 & 3 – WATER SERVICE BRASS

All brass valves, fittings and appurtenances used in underground service shall conform to ANSI/AWWA C800 (latest revision). ASTM B584 Brass components in contact with potable water, identified with "NL", UNS C89833 (latest revision). Brass components not in contact with potable water, 85-5-5-5, UNS C83600 (latest revision). NSF/ANSI 61 and NSF/ANSI 372 and shall be manufactured by Ford Meter Box Company, A.Y. McDonald or equal unless otherwise approved by the Director. The design of all brass fittings shall be based on a minimum internal hydrostatic pressure (working water pressure) of 200 psi

1. **Corporations:**

   For new taps one (1) inch FB1000 or 74701B-22 cc (AWWA) thread x pack joint (compression)

   For new taps 1-1/4 inch to 2-inch FB1000 or 74101BCAP-22 with Tee Head Adapter cc (AWWA) thread x pack joint (compression)

   For replacement of existing corporations one (1) inch or less FB1100 or 74704B-22 IP thread x pack joint (compression)

   For replacement of existing corporations 1- 1/4 inch to 2-inch FB1100 or 74704B-22 with Tee Head Adapter IP thread x pack joint (compression)

2. **Curb Stops:**

   B44 or 76100-22 Series full port pack joint x pack joint

3. **Couplings:**

   C44 or 74758-22 Series - pack joint x pack joint

   C22 or 74758 Series - flared joint x flared joint

GROUP 2 - COUPLING SPECIFICATIONS

All bolted sleeve-type couplings, reducing couplings, transition couplings, and flanged coupling adapters used to join plain-end steel, cast iron and ductile iron pipe shall conform to the latest revision of ANSI / AWWA C219, NSF 61 and NSF 372 as latest revised and shall in addition meet the specific requirements and exceptions which follow:

1. The design of bolted couplings shall be based on a rated working pressure of 200 psi, a transient or surge pressure allowance of 100 psi and a hydrostatic test pressure of 300 psi.

2. Couplings shall be manufactured from carbon steel, stainless steel, ductile iron or malleable iron. All materials used shall conform to ANSI / AWWA C219, section 4.2.

3. Bolts for all bolted, sleeve-type couplings shall be high strength, low alloy steel bolts only, conforming to ANSI / AWWA C111 / A21.11 as latest revised. Bolt manufacturers certification shall accompany each shipment.

4. All couplings shall be clearly marked as specified in AWWA C219. These markings shall include the manufacturer's model number or type, pipe size (outside diameter of pipe), center sleeve section identification, or, for steel center sleeves, thickness and length, and the rated working water pressure.

5. Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid. The manufacturer shall provide test data to verify that the required hydrostatic testing has been successfully completed.

6. Failure to include the hydrostatic test data and the required manufacturer's information shall result in the rejection of the bid.

GROUP 4 -FIRE HYDRANT SPECIFICATIONS

Fire hydrants shall be manufactured to comply in all respects to the latest revision of AWWA Standard C-502, latest revision and shall comply with the specific requirements and design standards per the Kennedy Valve drawing no. 80783 which is attached and is part of these specifications:

1. The design of the fire hydrant described below shall be based on a minimum internal hydrostatic pressure (working water pressure) of 200 psi.

2. Hydrants shall be UL listed and FM approved.

3. Hydrants shall be a post type, dry barrel design with the main valve opening against the pressure and closing with the pressure of the normal water flow. The minimum main valve size shall be 5-1/4 inches.

4. Hydrants shall open **right (clockwise)**.

5. Hydrant cap/bonnet shall be of a one-piece design creating a watertight cavity without the use of gaskets.

6. **The operating nut shall be one (1) piece bronze, and it shall be pentagonal in shape measuring 1-5/8 inches from point to opposite flat**. An alemite fitting shall be supplied threaded into the operating nut for periodic lubrication of the operating threads with grease.

7. **The nozzle cap nuts shall be pentagonal in shape measuring 1-5/8 inches from point to opposite flat.**

8. Hydrants shall be designed for installation in a trench that will provide five (5) foot minimum depth of cover.

9. Hydrants shall be equipped with two (2) 2-1/2 inch hose nozzles and one (1) 4-1/2 inch pumper nozzle, national standard thread. Hose and pumper nozzles shall be the ¼ turn type, secured into the upper barrel of the hydrant by O-ring seals and stainless-steel retaining screws. Each nozzle cap shall be provided with a Buna N rubber washer.

10. Fire hydrants shall be of the traffic model breakaway type, designed with the breaking rings mounted on the top of the lower barrel flange for ease of inspection and replacement and to include 2 breaking ring straps for alignment.

11. Breakable stem coupling shall be designed to break cleanly, leaving the lower portion of the coupling in place to accept a short disassembly wrench. Pins for the coupling shall be stainless steel and of the one-piece spring-loaded design.

12. O-ring seal shall be provided between upper and lower barrels and provide full 360° adjustment of upper barrel and O-ring grooves shall be of a dove-tail design.

13. Lower barrel flanges shall be constructed of ductile iron and permanently screwed onto the ductile iron lower barrel. Flanges secured by snap rings are not acceptable. Lower barrel bolt holes mating with the break flange shall be notched to facilitate easy bolt replacement.

14. A dirt shield or weather cap shall be standard. This cap or shield shall be marked with an arrow and the word “open” to indicate the direction to turn the stem to open the hydrant.

15. The hydrant drain valve shall operate automatically, without the aid of springs, pin or toggles. The drain valve mechanism is to be an integrally cast part of the upper valve plate. The hydrant elbow shall have its interior and exterior coated with fusion bonded NSF approved epoxy. The hydrant elbow shall be equipped with at least two (2) copper or bronze lined drain ports. The seat ring shall thread into a bronze bushing or drain ring. Pressure seals shall be “O” ring.

16. Hydrants shall be factory tested at 400 psi with the main valve in both the open and closed positions. Manufacturer shall provide independent verification of this test and of the hydrant flow characteristics.

17. Hydrant inlet connections shall be a 6-inch mechanical joint.

18. Hydrants shall be painted high-visibility yellow above the break flange.

19. To ensure compliance with AWWA and other applicable standards, and access to manufacturing facilities for inspection purposes, and assure timely shipment and delivery, all Fire Hydrants shall be manufactured, assembled, and tested in plants located with the continental United States.

20. To ensure proper service, manufacturers shall have both regional distribution and an employee within a one (1) day drive of Worcester. Manufacturers shall have supplied three different cities in New England with a number of hydrants equal to the amount being bid.

21. Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid.

22. All required information shall be submitted with and attached to the bid. Failure to include the required certificates of compliance and manufacturer's information shall result in the rejection of the bid.

Hydrant Pressure and Temperature Monitoring Specifications

(Hydrant must meet the hydrant specification listed above plus the following)

1 Must have water resistant and hardwired information access point internally within the fire hydrant2

2 Fire Hydrant must be completely, and fully operational once unit is installed and not require the need to shut water supply off, make modifications and then recharge to obtain normal operation.

3 Must receive electronic reading through the main valve assembly utilizing a waterproof conduit (Poly Tubing) and compression fittings from which the wiring is run from sensors to the motherboard, battery and cellular antenna just beneath the hydrant bonnet which is above ground approximately 2'6" above grade.

4 Must utilize an OEM spool piece to accomplish OEM installation requirements and maintain the robust integrity of the hydrant as required to meet UL and ULFM approval.

5 Device and all components must meet UL and ULFM requirements and have proper documentation to prove such.

6 Must be able to accept multiple layers of paint and maintain the OEM level of communication success.

7 All power must be supplied to the motherboard from within the same housing as the motherboard via a Lithium-Ion battery utilizing an integrated Male x Female wire harness.

8 Battery must have a minimum 2-year battery life when used with the factory default settings/parameters.

9 Battery must be field replaceable utilizing the same connection as OEM without requiring any modifications.

10 Must not require power supply below grade.

11 Must not require Wi-Fi or Bluetooth for communication or operation.

12 Must have communication capability to allow for remote firmware upgrades and data uploads using cellular technology.

13 Must have functionality across all platforms, desktop, laptop, tablet, mobile device or smart phone.

14 Must have hosted software, which is user friendly and allows end user/client to migrate files directly from host to their water management software via CSV or Flat File to use with SCADA or similar utility infrastructure management software.

15 Must be able to recognize and alert end user client via email or text utilizing cellular signal of thresholds (events) within the clients set parameters within 1 min. Time is based on adequate cellular reception.

16 Must have minimum capabilities of reading every 5-seconds, 15-min averages and 12-hour uploads.

17 Other capabilities: Alarm threshold violation reads of (40 reads per second for 30 seconds for (3) consecutive cycles before returning to it's normal read cycle of (5-seconds, 15-min averages and 12-hour uploads).

18 Must have the capability for future expansion within the device housing (2 shell components once assembled on hydrant) for future additional technologies currently in R&D for release.

19 Must not interfere or utilize the nozzles or ports in any way.

20 Must be available in both OEM preinstalled NEW hydrants and as retrofit kits utilizing ONLY OEM components for the hydrants listed herein.

21 Must allow for normal operation of hydrant in hot or cold climate without flow restrictions or any other byproduct that would prohibit full operation. Hydrant must be fully functional in below freezing conditions.

22 Must have water contacting the sensors under pressure while being utilized at the same time for fire or other utility applications.

23 Manufacturer shall have been in business for over 5-years, and manufacturing and marketing hydrant device for a minimum of 3-years.

GROUP 5A - CURB BOX SPECIFICATIONS

Curb Boxes shall be arch pattern, rod type with the arch accommodating up to a one (1) inch ball valve. The curb box shall adjust or telescope one (1) foot for proper height.

The base section and lid shall be cast of heavy, high-grade iron. The upper section shall be one (1) inch steel pipe and telescope up and down in the base casting. Upper sections shall be held in the desired position by a strong clip ring located at the top of the base casting. A swedged lug at the bottom of the upper section shall fit into a cast slot in the base casting to prevent the upper section from turning when removing the lid or pentagonal nut.

The lid shall be a plug style with a deep slot for the release of water and removal of debris. The pentagonal plug shall be cast brass with a coarse thread.

The rod shall be a minimum of 5/8-inch in diameter with the yoke end permanently attached. A brass cotter pin shall be supplied with each rod. The top of the rod shall be forged in a manner that centers the top of the rod in the upper section of the curb box. Rods shall be 36-inch in length and shall be furnished as standard to the curb boxes.

Rods shall also be available separately and in different lengths on request.

All curb boxes shall be heavily coated with asphaltic-based paint.

Curb box base adapters to accommodate 1 ¼-inch through 2-inch ball valve curb stops shall be cast iron and shall fit into the base section of the standard curb box.

Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid.

Failure to include the required manufacturer's information shall result in the rejection of bid.

GROUP 5B - VALVE BOX CASTINGS SPECIFICATIONS

GENERAL REQUIREMENTS

This specification shall apply to 5-1/4" shaft, slip type cast iron valve boxes. **All valve boxes furnished as part of this particular specifications (GROUP 5B only) shall comply the Build America, Buy America, ("BABA") provisions of the Infrastructure Investments and Jobs Act.** All iron used in the valve boxes is produced in the United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. This specification is applicable for the gray iron castings. All casting manufacturers shall be approved suppliers of cast iron products for the City of Worcester, MA. All manufacturers shall be able to demonstrate that there is an acceptable quality control program at the producing foundry, and upon request, shall furnish a quality control manual. As part of the quality control program, the producing

foundry shall be made available for the purpose of conducting an audit prior to supplying castings. All valve box parts shall be manufactured at the same producing foundry.

MATERIALS

Gray iron castings shall be manufactured from iron conforming to AASHTO M105, Class 35B or ASTM A48, Class 35B, as noted in section 4.1 of AASHTO M306-10. The iron material used in products provided shall have a minimum recycled material content of 85%. The recycled material shall consist of post-consumer material.

CONSTRUCTION

Castings shall be of uniform quality, free from sand holes, gas holes, shrinkage, crack, and other surface defects. Castings shall be reasonably smooth and well cleaned by shot blasting. Surfaces of the castings shall be free from burned-on sand and shall be reasonably smooth. Runners, risers, fins, and other cast on pieces shall be removed from the castings and such areas ground smooth. Bearing surfaces between covers and top sections shall be cast or machined with such precision that uniform bearing shall be provided throughout the perimeter area of contact. All cast dimensions may vary within accepted foundry tolerances as outlined in the Iron Castings Handbook published by the American Foundrymen's Society, Inc. Nominally, casting dimensional tolerances shall be +/- 1/16" per foot. All published casting weights are average and approximate values and shall vary +/- 5%. Casting dimensions and specific tolerances are identified on the associated casting drawings. Castings shall meet the weight and dimensional criteria as shown on the associated drawings. All castings shall fit properly and be fully interchangeable.

TRAFFIC RATING

All gray iron valve box covers shall be rated for traffic service and meet the minimum proof load requirement for H2O as described in section 6 of AASHTO M306-10. Proof load test results shall be provided upon request.

INSPECTION

Inspections shall be in accordance with section 8 of AASHTO M306. Results of these tests shall be furnished to the purchaser upon request. The heat or production date and product numbers, as cast on the casting, shall be the basis of trace-ability and recording of the tests.

CERTIFICATION

A foundry certification shall be furnished to the purchaser stating that each lot meets the requirements of this specification. Applicable documentation shall be made available to the purchaser upon request.

MARKING

Each casting shall be identifiable and show, at minimum, the following: name of the producing foundry, country of manufacture (such as "Made in USA"), ASTM A48, Class 35B, individual part number, and cast or heat date.

COMPLIANCE

Gray iron valve boxes supplied to the City of Worcester shall comply with this specification and all other requirements of AASHTO M306-10, not specifically referenced herein.

SPECIFICS OF VALVE BOX SIZES AND CONFIGURATIONS

Valve Boxes shall be domestically produced cast iron, two- (2) piece slip type having an extension range of 40 inches to 61 inches, with the flange located at the ***BOTTOM*** of the top section, either EJIW 8555 series or Tyler Union 6855 series. Valve Box extension sections shall have an extension range as listed below. When furnished separately, all valve box covers, valve box bottom sections, and valve box top sections shall be compatible with the above-mentioned castings.

1. TOP SECTIONS

This section shall be 26 inches in length with a minimum internal diameter of 6-1/8 inches. A flange shall be located at the ***BOTTOM*** of the section and the flange shall have a minimum diameter of 9 inches.

2. BOTTOM SECTION

This section shall be 36 inches in length with a minimum internal diameter of 5-1/4 inches. The lower portion of this section shall be bell-shaped to accommodate the operating nut and packing assembly of the valve it will be set on. The minimum internal diameter of the bell-shaped portion shall be 8 inches and the minimum length of the bell-shaped portion shall be 6-1/2 inches.

3. INTERMEDIATE/EXTENSION SECTIONS

This section shall be 18 inches in length with an extension range up to 14 inches. The section shall have a minimum internal diameter of 5-1/4 inches.

4. VALVE BOX COVERS

The cover shall be cast iron with the word "WATER" cast into the cover. The cover shall have a minimum overall depth of 3-1/2 inches.

Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid. All required information shall be submitted with and attached to the bid. Failure to include the required certificates of compliance and manufacturer's information shall result in the rejection of the bid.

GROUP 6 – WORCESTER STANDARD SERVICE BOX SPECIFICATIONS

GENERAL REQUIREMENTS

This specification is for Worcester Standard Service Boxes only. This specification is applicable for the gray iron castings. All casting manufacturers shall be approved suppliers of cast iron products for the City of Worcester, MA. All manufacturers shall be able to demonstrate that there is an acceptable quality control program at the producing foundry, and upon request, shall furnish a quality control manual. As part of the quality control program, the producing foundry shall be made available for the purpose of conducting an audit prior to supplying castings. All service box parts shall be manufactured at the same producing foundry.

MATERIALS

Gray iron castings shall be manufactured from iron conforming to AASHTO M105, Class 35B or ASTM A48, Class 35B, as noted in section 4.1 of AASHTO M306-10. The iron material used in products provided shall have a minimum recycled material content of 85%. The recycled material shall consist of post-consumer material.

CONSTRUCTION

Castings shall be of uniform quality, free from sand holes, gas holes, shrinkage, crack, and other surface defects. Castings shall be reasonably smooth and well cleaned by shot blasting. Surfaces of the castings shall be free from burned-on sand and shall be reasonably smooth. Runners, risers, fins, and other cast on pieces shall be removed from the castings and such areas ground smooth. Bearing surfaces between covers and top sections shall be cast or machined with such precision that uniform bearing shall be provided throughout the perimeter area of contact. All cast dimensions may vary within accepted foundry tolerances as outlined in the Iron Castings Handbook published by the American Foundrymen's Society, Inc. Nominally, casting dimensional tolerances shall be +/- 1/16" per foot. All published casting weights are average and approximate values and shall vary +/- 5%. Casting dimensions and specific tolerances are identified on the associated casting drawings. Castings shall meet the weight and dimensional criteria as shown on the associated drawings. All castings shall fit properly and be fully interchangeable.

TRAFFIC RATING

All gray iron valve box covers shall be rated for traffic service and meet the minimum proof load requirement for H2O as described in section 6 of AASHTO M306-10. Proof load test results shall be provided upon request.

INSPECTION

Inspections shall be in accordance with section 8 of AASHTO M306. Results of these tests shall be furnished to the purchaser upon request. The heat or production date and product numbers, as cast on the casting, shall be the basis of trace-ability and recording of the tests.

CERTIFICATION

A foundry certification shall be furnished to the purchaser stating that each lot meets the requirements of this specification. Applicable documentation shall be made available to the purchaser upon request.

MARKING

Each casting shall be identifiable and show, at minimum, the following: name of the producing foundry, country of manufacture (such as "Made in USA"), ASTM A48, Class 35B, individual part number, and cast or heat date.

COMPLIANCE

Gray iron valve boxes supplied to the City of Worcester shall comply with this specification and all other requirements of AASHTO M306-10, not specifically referenced herein.

SPECIFICS OF SERVICE BOX SIZES AND CONFIGURATIONS

DESIGN AND DIMENSIONS

The design and dimensions of the castings are given on the attached drawings. These drawings are hereby made part of the specifications herein. Vendors are encouraged to examine sample castings at the Worcester DPW&P Water Operations, Millbury St. yard, Worcester, MA, prior to quoting on items.

PATTERNS

The contractor shall furnish and maintain at his expense all patterns necessary to make these castings.

COATING

All castings shall have a coal tar varnish coating inside and outside.

ITEM NO.	**DESCRIPTION**	**WEIGHT**
1.	A-7 Telescope Tops (long – 30")	59 lbs.
2.	A-7 Telescope Tops (short – 18")	37 lbs.
3.	A-4 Telescope Bottoms (split)	45 lbs.
4.	A-3 Telescope Top Covers	4.5 lbs.

GROUP 7A – ZINC COATED DUCTILE IRON PIPE

1. Ductile Iron Pipe shall be zinc coated, cement lined; coal tar enamel double coated and shall conform to the latest revisions of the following ANSI / AWWA Standards as follows:

   a. **Pipe:** ANSI / AWWA C151/A21.51
   b. **Cement Lining:** ANSI / AWWA C104/A21.4
   c. **Push-On (Tyton Joint by McWane or Fast-Tite by American) and Mechanical Joints:** ANSI / AWWA C111/A21.11
   d. **Flanges:** ANSI / AWWA C115/A21.15

2. Thickness design of the ductile iron pipe as described herein shall be in accordance with the latest revisions of ANSI/AWWA C150/A21.50. The design shall be based on a minimum internal hydrostatic pressure (rated working water pressure) of 150 psi and a transient or surge pressure allowance of 100 psi. The design shall incorporate a 2 to 1 factor of safety based on the sum of the working pressure plus surge pressure.

3. Ductile Iron Pipe shall be Class 52 for sizes three (3) inch and greater and Class 53 for all sizes of flanged pipe with threaded flanges.

4. The exterior of the ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of zinc applied shall be 200g/m^2 of pipe surface area. The finishing asphaltic topcoat layer shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. The zinc coating system shall conform to ISO 8179-1 "Ductile iron pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer; Second edition 2004-06-01."

5. Pipe shall be gage full length for field cutting.

6. Bolts for all flanged and mechanical joints shall be high strength, low alloy steel bolts only, conforming to ANSI / AWWA C111/A21.11 as latest revised. Bolt manufacturers certification of compliance shall accompany each shipment.

7. All pipes shall be manufactured in the United States of America by a Ductile Iron Pipe Research Association (DIPRA) member company in good standing and permanently marked with the following information:

   a. Manufacturer, date
   b. Size, type, class or wall thickness
   c. Standard produced to (ANSI / AWWA, ASTM, etc.)

8. Inspection of the pipe shall be made by a representative of the owner after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the specifications' requirements. Pipe rejected after delivery shall be marked for identification and shall be removed from the site.

9. Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid.

10. All required information shall be submitted with and attached to the bid. Failure to include the required certificates of compliance and manufacturer's information shall result in the rejection of the bid.

Group 7B - WATER GATE VALVE SPECIFICATIONS

1. Valves 16 inches and less in size and all tapping valves shall be gate type, resilient-seated style. All valves shall meet or exceed the minimum materials and performance requirements of the latest revisions of the applicable AWWA Standards C-509 and C515 for resilient-seated gate valves. Both ends shall be mechanical joint in accordance with the latest revision of AWWA C-111 except tapping valves where the outlet end will be mechanical joint.

   Design Pressure: The design of the water gate valves as described below shall be based on an internal hydrostatic pressure (working water pressure) of 200 psi.

   Stem: Resilient-seated gate valve stems shall be non-rising design, grade E bronze with a yield strength of not less than 32,000 psi. and an elongation of not less than 10 percent in 2 inches, or stainless steel AISI Type 420, 304, or 316. The 300 series stainless steel shall be strain-hardened to meet the physical requirements referenced above.

Resilient-Seated Disc Wedge: The resilient-seated disc wedge shall be fully (100%) encapsulated in rubber. The rubber shall be securely bonded to the wedge, including the part which houses the stem nut. The stem hole through the wedge shall be full opening top to bottom and shall also be covered with rubber. Disc wedges which are not 100% fully encapsulated shall not be acceptable.

Bolting: All resilient-seated gate bonnet bolts, seal or gland plate bolts, stuffing box bolts or any other bolts with threads exposed to the environment shall be type either 304 stainless steel, everdur bronze, cadmium-plated (ASTM B766), or zinc-coated (ASTM A153 or ASTM B633).

Tapping Valves: All tapping valves shall be furnished with the tapping flange having a raised face or lip designed to engage the corresponding recess in the tapping sleeve flange in accordance with **MSS-SP60**. Tapping valves without the raised face shall not be allowed because they do not assure the proper alignment required to prevent damage by a misaligned shell cutter. The interior of the waterway in the valve body shall be a full opening capable of passing a full-sized shell cutter equal to the nominal diameter of the valve.

Country of Origin: To ensure compliance with AWWA and other applicable standards, and access to manufacturing facilities for inspection purposes, and assure timely shipment and delivery, all gate type valves shall be manufactured, assembled, and tested in plants located within the continental United States.

2. All valves shall be fitted with standard 2-inch square operating nut and shall open right (clockwise).

3. All resilient gate valves (including tapping valves) shall have a fusion-bonded epoxy coating applied to and fully cured on all interior and exterior ferrous surfaces that are in constant contact with water. Coating shall meet or exceed the minimum materials and performance requirements in AWWA C550-90 latest revisions. The coating shall be a minimum of 10 mils thickness and shall be shown to be holiday-free when tested with a low-voltage holiday detector, using a sponge saturated with a ½ percent by weight sodium chloride solution.

4. **Certificates of Compliance:** A certificate of compliance from the manufacturer stating that the valve, stem, and coatings meets all criteria set forth in this specification shall be submitted and approved before installation of any valve. The certificate shall be signed by an authorized company official and notarized by a notary public and submitted with the bid.

5. Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid.

6. Failure to include the certificates of compliance and the required manufacturer's information shall result in the rejection of the bid.

GROUP 7C - WATER BUTTERFLY VALVE SPECIFICATIONS

1. Valves 18 inches and over in size and when requested 16-inch valves shall be butterfly type, shall be ***CLASS 250B*** with mechanical joint ends and shall meet or exceed AWWA Standard C504 as latest revised, and shall comply with the specific requirements and design standards that follow.

Design Pressure: The design of the water butterfly valves as described below shall be based on an internal hydrostatic pressure (working water pressure) of 200 psi.

Body Type: All butterfly valves shall be of the rubber seated tight-closing type. Both ends shall be mechanical joint per AWWA Standard C111 as latest revised. The rubber seat shall be a full circle 360 degrees seat not penetrated by the valve shaft.

Valve: Bodies of all valves shall be either of cast iron conforming to ASTM A126, Class B, or ASTM A48, Class 40; of ductile iron conforming to ASTM A536, Grade 65-45-12; or of alloy cast iron conforming to ASTM A436, Type 1 and 2, or ASTM A439, Type D2, with a maximum lead content of 0.003%.

Valve Seat: The valve seat rubber shall be Buna-N rubber. If the valve seat rubber is on the disk it shall be held mechanically in place with a stainless-steel clamp ring and mate with a stainless-steel body ring mechanically held in place. If the valve seat rubber is on the valve body, it shall not be glued in place, but it shall be held in place without hardware.

Actuator: The actuator is essentially an integral part of a butterfly valve. Actuator shall be totally enclosed and fully greased packed for buried, submerged service up to 25 feet of head. It shall be capable of withstanding an overload input torque of 450 ft. lbs. at full-open or full-closed position, without damage to the valve or valve operator. Number of turns to operate valve shall closely resemble conventional distribution valve practices and to minimize water hammer. Actuators shall be built in full conformance with AWWA Standard C504, ***Class 250B*** as latest revised.

2. **TESTING:** Shall be in compliance with AWWA C504 Section 5 as latest revised.

Performance Testing: Each valve with the actuator mounted directly on the valve shall be shop-operated three (3) times from the fully closed to the fully opened position and the reverse under a no-flow condition to demonstrate that the complete assembly is workable.

Leakage Tests: Each valve shall be shop-tested for leaks with the disc in the closed position at 200 psi.

Hydrostatic Test: All valve bodies shall be subjected to an internal hydrostatic pressure equivalent to two (2) times the rated pressure.

3. All butterfly type valves shall be spray coated with a two (2)-component epoxy to cover all interior ferrous surfaces that come in contact with water. The constituents of the cured film shall be non-hygroscopic, non-water soluble, and FDA approved for exposure to fluids for human consumption. Surface preparation shall be blast cleaned or other approved method to near white metal. All metal surfaces shall be cleaned to remove all dirt, dust, mill grade, rust, corrosion products, oxides, paint, or any other foreign matter. Blast cleaned surface shall be protected from conditions of high humidity, rainfall, or surface moisture. No surface shall be allowed to flash rust before coating. The coating shall be applied to a minimum thickness of 8 mils. All holidays in the coating shall be repaired by the application of another coat of epoxy over the area. The body and ferrous vane shall then be 100% checked on the water-wetted surfaces to be electronically void-free.

4. **CERTIFICATES OF COMPLIANCE FOR BUTTERFLY VALVE OPERATOR AND EPOXY COATING**

A Certificate of Compliance from the manufacturer shall be submitted with the bid. These certificates, signed by an authorized company official and notarized by a notary public, shall include the methods and procedures used for the electronic void-free testing and the method used to clean the valve prior to the application of the epoxy.

5. All valves shall be fitted with a standard 2-inch square operating nut and shall open right (clockwise).

6. Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid.

7. All required information shall be supplied with submittals attached to bid. Failure to include the certificate of compliance and the required manufacture's information shall result in the rejection of the bid.

GROUP 7D - CAST OR DUCTILE IRON FITTINGS and MECHANICAL JOINT ACCESSORIES

1. All fittings for use with cast iron or ductile iron water pipe shall conform to the latest revisions of the following ANSI / AWWA Standards:

   a. **Gray and Ductile Iron Standard Fittings:** ANSI / AWWA C110/A21.10
   b. **Ductile Iron Compact Fittings:** ANSI / AWWA C153/A21.53
   c. **Cement Lining:** ANSI / AWWA C104/A21.4
   d. **Mechanical Joints:** ANSI / AWWA C111/A21.11

2. The design of the cast or ductile iron fittings as described herein shall be based on a minimum internal hydrostatic pressure (working water pressure of 200 psi) and a transient or surge pressure allowance of 100 psi.

3. All fittings shall be cement lined and have mechanical joints.

4. ***Coatings:*** The exterior of all cast iron or ductile iron fittings shall be coated with a zinc-rich primer layer complying with ISO 8179-2:1991 to protect against corrosion of the exterior surfaces. The zinc-rich primer layer shall be applied on the blast cleaned (free from rust or any non-adhering particles or foreign matter such as oil or grease) exterior surface of the fitting. The coating material shall be zinc-rich paint with an inorganic binder and zinc content of at least 85% in dry film

and shall be asphalt paint compatible. The zinc-rich paint shall have a solids by volume of 67±2%, a flash point of 14°C (ISO 3679 method 1) and a density of 2.63 kg/liter. PVC attachments shall be used to close the fitting openings to avoid zinc contamination of the internal surfaces. The zinc-rich paint shall cover the entire outside diameter of the fitting and shall be free from bare patches and lack of adhesion.
A finishing layer of asphaltic topcoat shall be applied to the internal and external surfaces of the fitting.

5. All fittings shall be permanently marked with the following information: pressure rating, nominal diameter of openings, manufacturer's identification, country where cast, and the number of degrees or fraction of the circle on all bends.

6. Bolts for all flanged and mechanical joints shall be high strength, low alloy steel bolts only, conforming to ANSI / AWWA C111/A21.11 as latest revised. Bolt manufacturers certification of compliance shall accompany each shipment.

7. Accessory kits shall contain one (1) M.J. gland, one (1) M.J. gasket, and the appropriate number of "T" head bolts and nuts for the size indicated.

8. Inspection of the fittings shall be made by a representative of the owner after delivery. Fittings shall be subject to rejection at any time on account of failure to meet any of the specification requirements. Fittings rejected after delivery shall be marked for identification and shall be removed from the site.

9. Manufacturer's specifications, shop drawings, and descriptive literature shall be submitted with each bid.

10. All required information shall be submitted with and attached to the bid. Failure to include the required certificates of compliance and manufacturer's information shall result in the rejection of the bid.

GROUP 8 – PLASTIC SERVICE TUBING

Polyethylene tubing shall meet the latest revision of AWWA Standard C901, have a working pressure of 250 psi, and shall meet the nominal size as shown on the plan. All polyethylene tubing shall be copper tube size (CTS), meeting ASTM specifications D-1248, D-2239, and D-2737 and shall meet PE 4710 requirements.

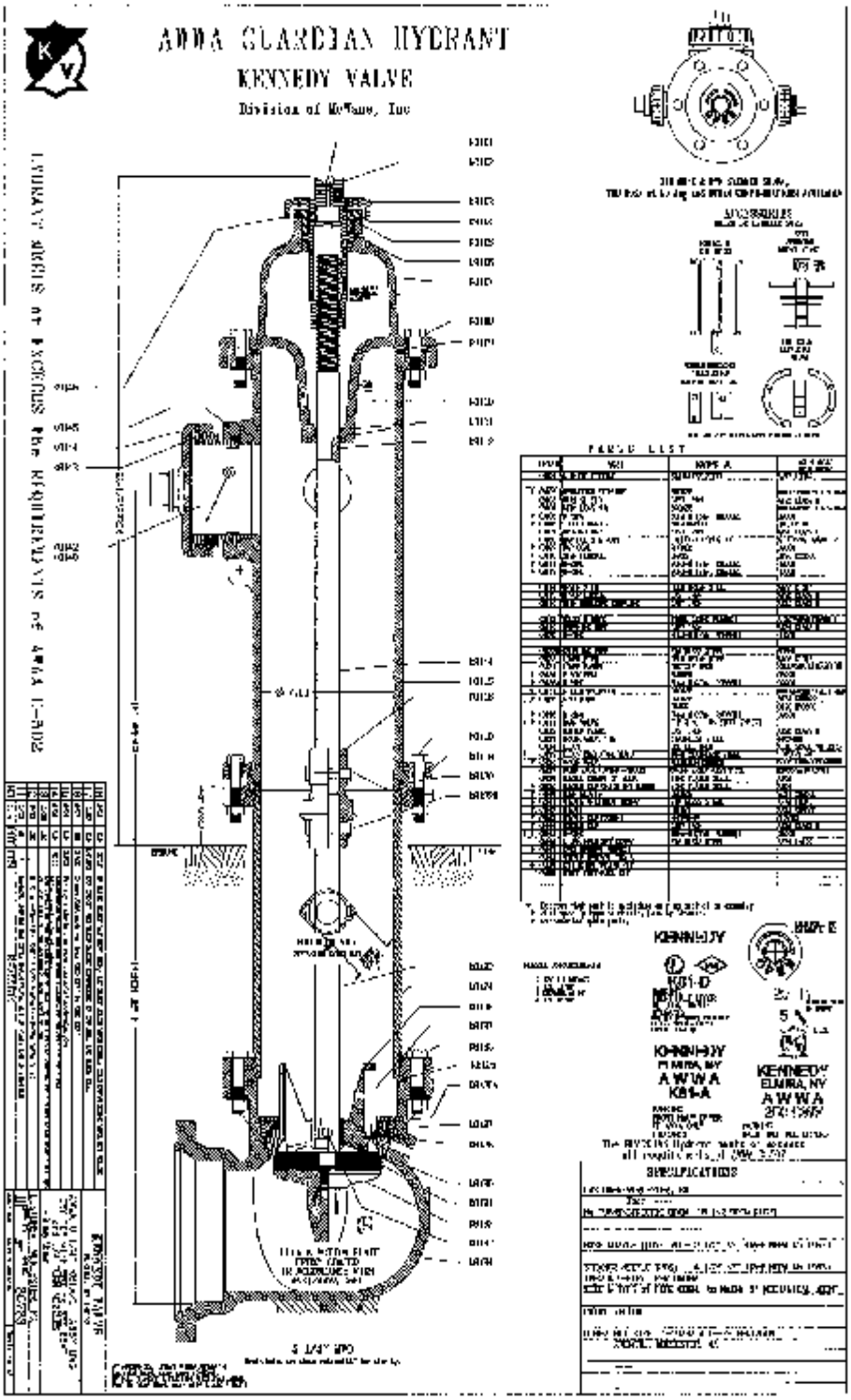
DELIVERY REQUIREMENTS

Shipping Instructions: Receiving hours Mon. through Fri. 9:00 AM to 3:00 PM,
24 hr Notice required on all Trailer Deliveries

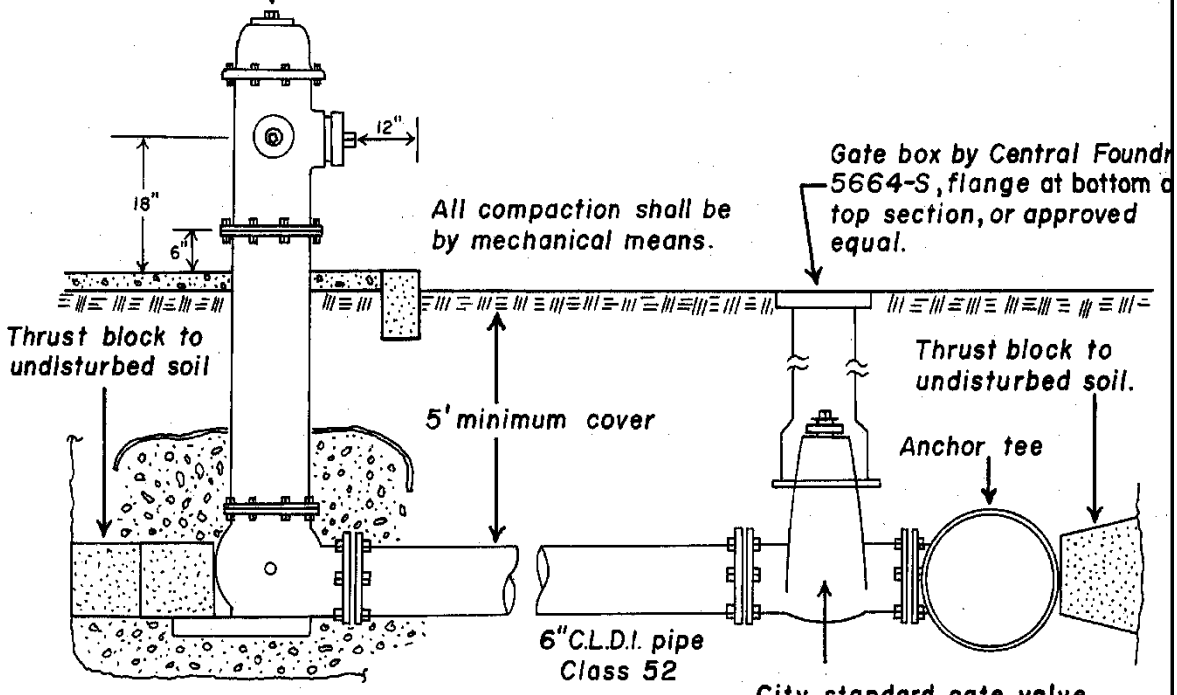
Ductile Iron Pipe, Hydrants, Worcester Spec. Service Boxes and Gate Boxes (only):
Worcester D.P.W & P. Millbury Street Yard
1065 Millbury Street
Worcester, MA 01604
Tel: (508) 752-8282

All Other Materials:
Worcester D.P.W. & P. Water Operations
18 East Worcester Street
Worcester, MA 01604-3699
Tel: (508) 929-1300

GROUP 4 -FIRE HYDRANT DETAIL SHEETS



K-81-A GUARDIAN HYDRANT BY KENNEDY VALVE CO. INC. 5 1/4" VALVE DIAMETER. HYDRANT PAINTED HI-VISIBILITY YELLOW. PENTAGONAL OPERATING NUT SHALL BE 1 5/8" POINT TO FLAT, OPENING RIGHT.
2-2 1/2" HOSE AND 1-4 1/2" PUMP NOZZELS, N.S. THREADS.



Hydrant set on flat stone or concrete pad. Place 1/2 cubic yard of pea stone around hydrant drain and cover stones with 8 mil polyethylene.

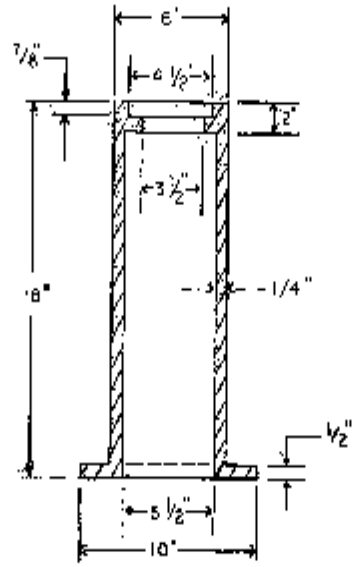
City standard gate valve, M.J., 2"square operating nut, open right, epoxy coated.

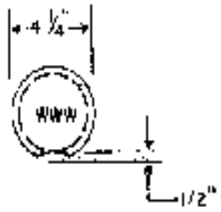
HYDRANT DETAIL Typical CITY of WORCESTER DEPARTMENT of PUBLIC WORKS NO SCALE WATER OPERATIONS	Rev. No.	By	Date
	1	MJF	5/5/78
	2	MJF	11/28/80
	3	AVC	2/7/91
	4	AVC	3/31/97
	5	AVC	12/28/00
	Drawn by: R.H. & A.V.C.		DETAIL
	Checked by: A.C.M.		W-9
	Date: 2/24/78		

GROUP 6 - SERVICE BOX DETAIL SHEETS

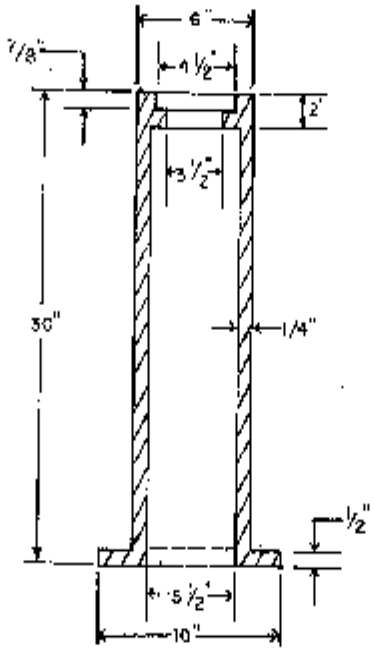
TELESCOPE TOP

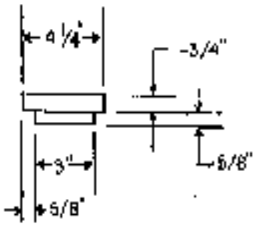
PATTERN NO. A-7 (SHORT)
WT. 37#





PATTERN NO. A-7 (LONG)
WT. 53#

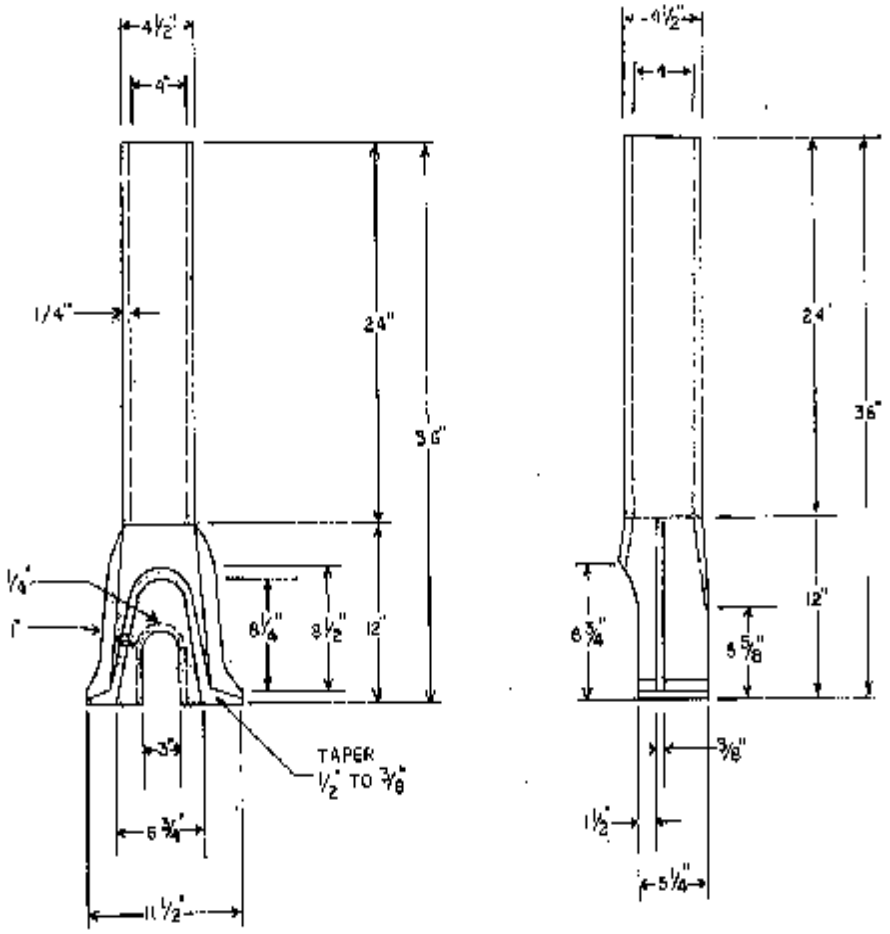




TELESCOPE TOP COVER

PATTERN No. A-3 WT. 4.5#

SERVICE BOX DETAIL CITY OF WORCESTER D.P.W. WATER OPERATIONS no scale	Rev. no.	By	Date
	1	MJF	1-9-90
	2	AVC	3-15-99
	Drawn By: V.J.K.		DETAIL
	Checked By: A.C.M.		1 of 2
	Date: 10-5-79		



TELESCOPE BOTTOM - SPLIT

PATTERN NO. A-4. WT. 45#

SERVICE BOX DETAIL CITY OF WORCESTER D.P.W. WATER OPERATIONS no scale	Rev. no. By 1 MJF	Date 1-9-90
	Drawn By: V.J.K.	DETAIL
	Checked By: A.C.M.	2 of 2
	Date: 10-5-79	

BIDDER NAME: _____

Group 1 - Brass Water Service Parts

Acceptable Manufacturers Include

- Ford Meter Box Co. - A.Y. McDonald Mfg. Co. - Cambridge Brass - Red Hed - Jones

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	50	Each		3/4" Ball Valve Curb Stop, Comp X Comp., Ford B44-333 or equal	$_____._____	$_____._____
2	200	Each		1" Ball Valve Curb Stop, Comp X Comp, Ford B44-444 or equal	$_____._____	$_____._____
3	2	Each		1 1/4" Ball Valve Curb Stop, Comp X Comp, Ford B44-555 or equal	$_____._____	$_____._____
4	3	Each		1 1/2" Ball Valve Curb Stop, Comp X Comp, Ford B44-666 or equal	$_____._____	$_____._____
5	3	Each		2" Ball Valve Curb Stop, Comp X Comp, Ford B44-777 or equal	$_____._____	$_____._____
6	100	Each		3/4" CTS, Solid Stainless Steel Insert Stiffener, Ford # 51 or equal	$_____._____	$_____._____
7	1500	Each		1" CTS, Solid Stainless Steel Insert Stiffener, Ford # 52 or equal	$_____._____	$_____._____
8	100	Each		¾" MIP X ¾" Comp. Male Adapter, Ford C84-33 or equal	$_____._____	$_____._____
9	100	Each		1" MIP X 1" Comp. Male Adapter, Ford C84-44 or equal	$_____._____	$_____._____
10	100	Each		¾" MIP X 1" Comp. Male Adapter, Ford C84-34 or equal	$_____._____	$_____._____
11	100	Each		¾" FIP X 3/4" Comp. Female Adapter, Ford C14-33 or equal	$_____._____	$_____._____
12	100	Each		1" FIP X 1" Comp. Female Adapter, Ford C14-44 or equal	$_____._____	$_____._____
13	400	Each		3/4" FIP X 1" Comp. Female Adapter, Ford C14-34 or equal	$_____._____	$_____._____
14	400	Each		1-1/4" FIP X 1" Comp, Female Adapter, Ford C14-54 or equal	$_____._____	$_____._____
15	100	Each		¾" Comp X Comp. Three Part Coupling, Ford C44-33, or equal	$_____._____	$_____._____
16	350	Each		1" Comp X Comp. Three Part Coupling, Ford C44-44 or equal	$_____._____	$_____._____
17	6	Each		1-1/4" Comp X Comp. Three Part Coupling, Ford C44-66, or equal	$_____._____	$_____._____
18	6	Each		1-1/2" Comp X Comp. Three Part Coupling, Ford C44-66, or equal	$_____._____	$_____._____
19	6	Each		2" Comp X Comp. Three Part Coupling, Ford C44-77, or equal	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 1 To Be Considered For Group 1 Award					Group 1 Grand Total	$_____._____

BIDDER NAME: _____

Group 2 - Water Main Repair Parts

Acceptable Manufacturers Include

- Ford Meter Box Co. - Romac - Hymax - Dresser Industries - Smith-Blair - J.C.M. Industries - PowerSeal Pipeline Products Co.

Group 2A - Multi-Bolt Flexible Repair Couplings and Repair Clamps

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	50	Each		2" Two Bolt Iron Pipe Coupling, Range: 2.38 O.D., Ford FC-3 or equal	$_____._____	$_____._____
2	25	Each		2" Adapter Gasket, converts, 2" copper (2.25 O.D.) to 2" Iron Pipe (2.38 O.D.)	$_____._____	$_____._____
3	2	Each		4" Flexible Coupling, O.D. Range: 4.80 – 5.10 nominal, Ford FC1 or equal	$_____._____	$_____._____
4	20	Each		6" Flexible Coupling, O.D. Range: 6.84 – 7.20 nominal, Ford FC1 or equal	$_____._____	$_____._____
5	20	Each		8" Flexible Coupling, O.D. Range:9.05 – 9.40 nominal, Ford FC1 or equal	$_____._____	$_____._____
6	4	Each		10" Flexible Coupling, O.D. Range: 11.10 – 11.40 nominal, Ford FC1 or equal	$_____._____	$_____._____
7	6	Each		12" Flexible Coupling, O.D. Range:13.20 – 13.56 nominal, Ford FC1 or equal	$_____._____	$_____._____
8	2	Each		14" Flexible Coupling, O.D. Range: 15.30 – 15.70 nominal, Ford FC2A or equal	$_____._____	$_____._____
9	2	Each		16" Flexible Coupling, O.D. Range:17.40 – 17.80 nominal, Ford FC2A or equal	$_____._____	$_____._____
10	24	Each		6" X 7.5" Width, Repair Clamp, Stainless Steel, w/Ductile Iron Lugs, O.D. Range: 6.84 – 7.20 nominal, Ford F1 or equal	$_____._____	$_____._____
11	12	Each		6" X 12.5" Width, Repair Clamp, Stainless Steel, w/Ductile Iron Lugs, O.D. Range: 6.84 – 7.20 nominal, Ford F1 or equal	$_____._____	$_____._____
12	6	Each		6" X 7.5" Width, Repair Clamp, Stainless Steel, w/Ductile Iron Lugs, w/1" IPT tap, O.D. Range: 6.84 – 7.20 nominal, Ford F1 or equal	$_____._____	$_____._____
13	24	Each		8" X 7.5" Width, Repair Clamp, Stainless Steel w/ductile iron lugs, O.D. Range: 9:05 – 9.40 nominal Ford F1 or equal	$_____._____	$_____._____
14	24	Each		8" X 12.5" Width, Repair Clamp, Stainless Steel w/ductile iron lugs, O.D. Range: 9:05 – 9.40 nominal Ford F1 or equal	$_____._____	$_____._____
15	6	Each		8" X 7.5" Width, Repair Clamp, Stainless Steel, w/Ductile Iron Lugs, w/1" IPT tap, O.D. Range: 9.05 – 9.40 nominal, Ford F1 or equal	$_____._____	$_____._____
16	4	Each		10" X 7.5" width, Repair Clamp, Stainless Steel w/ductile iron lugs, O.D. Range: 11.04 – 11.44 nominal, Ford F1 or equal	$_____._____	$_____._____
17	4	Each		10" X 12.5" width, Repair Clamp, Stainless Steel w/ductile iron lugs, O.D. Range: 11.04 – 11.44 nominal, Ford F1 or equal	$_____._____	$_____._____
18	4	Each		10" X 7.5" width, Repair Clamp, Stainless Steel w/ductile iron lugs, w/1" IPT tap, O.D. Range: 11.04– 11.44 nominal, Ford F1 or equal	$_____._____	$_____._____
19	2	Each		12" X 12" width, Repair Clamp, Stainless Steel w/ductile iron lugs, O.D. Range: 13.20 – 13.56 nominal, Ford F1 or equal	$_____._____	$_____._____
20	2	Each		12" X 12" width, Repair Clamp, Stainless Steel w/ductile iron lugs, w/1" IPT tap, O.D. Range: 13.20 – 13.56 nominal, Ford F1 or equal	$_____._____	$_____._____
21	6	Each		8" X 6" Flexible Reducing Coupling, O.D. Range: 9.05 – 9.40 X 6.90 – 7.20 nominal, Ford FC6-940-720-R or equal	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 2A To Be Considered For Group 2A Award					Group 2A Grand Total	$_____._____

BIDDER NAME: _____

Group 2 - Water Main Repair Parts

Acceptable Manufacturers Include

- Ford Meter Box Co. - Romac - Hymax - Dresser Industries - Smith-Blair - J.C.M. Industries - PowerSeal Pipeline Products Co.

Group 2B - Two (2) Bolt Wide (Extended) Range Repair Couplings

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	6	Each		2" Two Bolt Wide (Extended) Range Coupling, O.D. Range: 2.10 – 3.00 Nominal	$_____._____	$_____._____
2	2	Each		4" Two Bolt Wide (Extend) Range Coupling, O.D. Range: 4.30 – 5.60 Nominal	$_____._____	$_____._____
3	18	Each		6" Two Bolt Wide (Extended) Range Coupling, O.D. Range: 6.50 – 7.60 Nominal	$_____._____	$_____._____
4	24	Each		8" Two Bolt wide (Extended) Range Coupling, O.D. Range: 8.60 – 9.80 Nominal	$_____._____	$_____._____
5	4	Each		10" Two Bolt Wide (extended) Range Coupling, O.D. Range: 10.70 – 12.00 Nominal	$_____._____	$_____._____
6	10	Each		12" Two Bolt Wide (Extended) Range Coupling, O.D. Range: 12.60 – 13.70 Nominal	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 2B To Be Considered For Group 2B Award					Group 2B Grand Total	$_____._____

BIDDER NAME: _____

Group 3 - Brass Meter Service Parts

Acceptable Manufacturers include

- Ford Meter Box Co. - A.Y. McDonald Mfg. Co. - Cambridge Brass - Mueller Co. - Jones - Lee Brass Co. - Merit Brass Co.

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	500	Each		1" MIP X Flare Male Adapter, Ford C28-44 or equal	$_____._____	$_____._____
2	500	Each		1" FIP X FIP Ball Valve w/handle, Ford B11-444-HB-34 or equal	$_____._____	$_____._____
3	500	Each		1" X Close Brass Nipple	$_____._____	$_____._____
4	500	Each		1" X ½" Brass Elbow	$_____._____	$_____._____
5	50	Each		1" X 3/4" Brass Elbow	$_____._____	$_____._____
6	50	Each		1" x 1" Brass Elbow	$_____._____	$_____._____
7	50	Each		1" X ¾" Brass Bushing	$_____._____	$_____._____
8	100	Each		1 X ½" Brass Bushing	$_____._____	$_____._____
9	50	Each		1" X 1" X 1" Brass Tee	$_____._____	$_____._____
10	200	Each		¾" FIP X FIP Ball Valve w/handle, Ford B11-333-HB-34 or equal	$_____._____	$_____._____
11	500	Each		3/4" X Close Brass Nipple	$_____._____	$_____._____
12	1000	Each		5/8" straight X ½" MIP Meter Coupling, (for 5/8" meter), Ford C38-11-2.375 or equal	$_____._____	$_____._____
13	2000	Each		5/8" Meter Gasket, Waxed Leather, Ford GT-167 or equal	$_____._____	$_____._____
14	20	Each		1" straight X ¾" MIP Meter Coupling, (for ¾" meter), Ford C38-23-2.5 or equal	$_____._____	$_____._____
15	50	Each		¾" Meter Gasket, Waxed Leather, Ford GT-113 or equal	$_____._____	$_____._____
16	20	Each		1-¼" straight X 1" MIP Meter Coupling, (for 1" meter), Ford C38-44-2.625 or equal	$_____._____	$_____._____
17	50	Each		1" Meter Gasket, Waxed Leather, Ford CGT-163	$_____._____	$_____._____
18	10	Each		2" FIP X 1-½" MIP Meter Coupling w/washer faced bushing and gasket, (1-½" meter), Ford 38-66 or equal	$_____._____	$_____._____
19	10	Each		2-1/2" FIP X 2" MIP Meter Coupling w/washer faced bushing and gasket, (2" meter), Ford 38-77 or equal	$_____._____	$_____._____
20	5	Each		1-1/4" FIP X FIP Ball Valve w/handle, Ford B11-555-HB-67 or equal	$_____._____	$_____._____
21	5	Each		1-1/2" FIP X FIP Ball Valve w/handle, Ford B11-666-HB-67 or equal	$_____._____	$_____._____
22	10	Each		2" FIP X FIP Ball Valve w/handle, Ford B11-777-HB-67 or equal	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 3 To Be Considered For Group 3 Award					Group 3 Grand Total	$_____._____

BIDDER NAME: _____

Group 4 - Hydrants and Hydrant Parts

The Only Acceptable Manufacturer

- Kennedy Valve Co.

Group 4A - Fire Hydrants

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	3	Each	Kennedy Valve Co.	4.0 ft. Worcester Spec Hydrant, Collision type, Kennedy Guardian K-81-D, No equal	$_____._____	$_____._____
2	6	Each	Kennedy Valve Co.	4.5 ft. Worcester Spec Hydrant, Collision type, Kennedy Guardian K-81-D, No equal	$_____._____	$_____._____
3	6	Each	Kennedy Valve Co.	5 ft. Worcester Spec Hydrant, Collision type, Kennedy Guardian K-81-D, No equal	$_____._____	$_____._____
4	100	Each	Kennedy Valve Co.	5.5 ft. Worcester Spec Hydrant, Collision type, Kennedy Guardian K-81-D, No equal	$_____._____	$_____._____
5	6	Each	Kennedy Valve Co.	6 ft. Worcester Spec Hydrant, Collision type, Kennedy Guardian K-81-D, No equal	$_____._____	$_____._____
6	3	Each	Kennedy Valve Co.	6.5 ft. Worcester Spec Hydrant, Collision type, Kennedy Guardian K-81-D, No equal	$_____._____	$_____._____
7	6	Each	Kennedy Valve Co.	K81V Worcester Spec. Vintage Upper Barrel, complete with yellow upper barrel, yellow nozzle caps and yellow cap., No Equal	$_____._____	$_____._____
8	6	Each	Kennedy Valve Co.	K81V Worcester Spec. Vintage Upper Barrel, complete with yellow upper barrel, yellow nozzle caps and white cap., No Equal	$_____._____	$_____._____
9	25	Each	Kennedy Valve Co.	6" Hydrant Extension Kit, Kennedy K-81-D, No Equal	$_____._____	$_____._____
10	10	Each	Kennedy Valve Co.	12" Hydrant Extension Kit, Kennedy K-81-D, No Equal	$_____._____	$_____._____
11	6	Each	Kennedy Valve Co.	18" Hydrant Extension Kit, Kennedy K-81-D, No Equal	$_____._____	$_____._____
12	2	Each	Kennedy Valve Co.	24" Hydrant Extension Kit, Kennedy K-81-D, No Equal	$_____._____	$_____._____
13	2	Each	Kennedy Valve Co.	30" Hydrant Extension Kit, Kennedy K-81-D, No Equal	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 4A To Be Considered For Group 4A Award					Group 4A Grand Total	$_____._____

BIDDER NAME: _____

Group 4 - Hydrants and Hydrant Parts

The Only Acceptable Manufacturer

- Kennedy Valve Co.

Group 4B - Fire Hydrants Equipped with Factory Installed Pressure and Temp Monitoring Technology

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	1	Each	Kennedy Valve Co.	5.0 ft Worcester Spec Hydrant, Collision type, Kennedy Guardian, K81D, equipped with factory installed pressure and temperature monitoring technology.	$_____._____	$_____._____
2	1	Each	Kennedy Valve Co.	5.5 ft Worcester Spec Hydrant, Collision type, Kennedy Guardian, K81D, equipped with factory installed pressure and temperature monitoring technology.	$_____._____	$_____._____
3	1	Each	Kennedy Valve Co.	6.0 ft Worcester Spec Hydrant, Collision type, Kennedy Guardian, K81D, equipped with factory installed pressure and temperature monitoring technology.	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 4B To Be Considered For Group 4B Award					Group 4B Grand Total	$_____._____

BIDDER NAME: _____

Group 4 - Hydrants and Hydrant Parts

The Only Acceptable Manufacturer

- Kennedy Valve Co.

Group 4C - Hydrant OEM Replacement Parts

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	25	Each	Kennedy Valve Co.	K-8101, Alemite Fitting	$_____._____	$_____._____
2	50	Each	Kennedy Valve Co.	Worcester Spec Operating Stem Nut (Part # 322852R)	$_____._____	$_____._____
3	100	Each	Kennedy Valve Co.	K-8106, Thrust Washer	$_____._____	$_____._____
4	10	Each	Kennedy Valve Co.	Worcester Spec Hose Nozzle Cap (Part # 3201262)	$_____._____	$_____._____
5	10	Each	Kennedy Valve Co.	Worcester Spec Steamer Nozzle Cap (Part # 3201272)	$_____._____	$_____._____
6	50	Each	Kennedy Valve Co.	K-8114, Upper Stem	$_____._____	$_____._____
7	15	Each	Kennedy Valve Co.	K-8115, Upper Barrel	$_____._____	$_____._____
8	200	Each	Kennedy Valve Co.	K-8118, Bolt & Nut	$_____._____	$_____._____
9	100	Each	Kennedy Valve Co.	K-8122, Clip only, Lower coupling Pins	$_____._____	$_____._____
10	25	Each	Kennedy Valve Co.	K-8142H, Hose Nozzle (includes set screw & “O” ring with each)	$_____._____	$_____._____
11	10	Each	Kennedy Valve Co.	K-8142S, Steamer Nozzle (includes set screw & “O” ring with each)	$_____._____	$_____._____
12	100	Each	Kennedy Valve Co.	K-8149, Collision repair Kit	$_____._____	$_____._____
13	100	Each	Kennedy Valve Co.	K-8143H, Hose Nozzle Cap Gasket	$_____._____	$_____._____
14	100	Each	Kennedy Valve Co.	K-8143S, Steamer Nozzle Cap Gasket	$_____._____	$_____._____
15	100	Each	Kennedy Valve Co.	K-8145S, O-ring for Steamer Nozzle	$_____._____	$_____._____
16	100	Each	Kennedy Valve Co.	K-8145H, O-ring for Hose Nozzle	$_____._____	$_____._____
17	50	Each	Kennedy Valve Co.	K-8105, O-ring for Operating Stem Nut	$_____._____	$_____._____
18	25	Each	Kennedy Valve Co.	K-8104, Stem Lock Nut	$_____._____	$_____._____
19	25	Each	Kennedy Valve Co.	K-8103, Dirt Shield	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 4C To Be Considered For Group 4C Award					Group 4C Grand Total	$_____._____

BIDDER NAME: _____

Group 5 - Water Curb Stop Boxes and Valve Boxes

Group 5A - Curb Stop Boxes

Acceptable Manufacturers Include

- A.Y. McDonald - Bingham & Taylor - EJ - General Foundries - Mueller Co.

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	200	Each		4-1/2 ft. – 5-1/2 ft., Erie Curb Box, Rod Style w/Pentagonal Nut Cover and 36" Rod	$_____._____	$_____._____
2	200	Each		Erie Cover with Pentagonal Nut	$_____._____	$_____._____
3	50	Each		24" Rod	$_____._____	$_____._____
4	50	Each		6" Curb Box Extension	$_____._____	$_____._____
5	50	Each		12" Curb Box Extension	$_____._____	$_____._____
6	50	Each		18" Curb Box Extension	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 5A To Be Considered For Group 5A Award					Group 5A Grand Total	$_____._____

BIDDER NAME: _____

Group 5 - Water Curb Stop Boxes and Valve Boxes

Group 5B - Valve Boxes (BABA Compliant)

Acceptable Manufacturers Include

- Bingham & Taylor - EJ - Tyler Union

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	400	Each		6” Gate Box Cover	$_____._____	$_____._____
2	200	Each		26” Long Gate Box Top	$_____._____	$_____._____
3	200	Each		36” Long Gate Box Bottom	$_____._____	$_____._____
4	50	Each		18” Long Gate Box Extension	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 5B To Be Considered For Group 5B Award					Group 5B Grand Total	$_____._____

BIDDER NAME: _____

Group 6 - Worcester Spec. Service Boxes

Acceptable Manufacturers include

- Bingham & Taylor - EJ - Cambridge Brass - General Foundries - Sigma Corp - Tyler Union

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	250	Each		A-7, 4" Service Box Top (Long – 30") Worcester Spec. Custom Made, Cast Iron	$_____._____	$_____._____
2	250	Each		A-7, 4" Service Box Top (Short – 18") Worcester Spec. Custom Made, Cast Iron	$_____._____	$_____._____
3	250	Each		A-4, 4" Service Box Bottom (Split) Worcester Spec. Custom made, Cast Iron	$_____._____	$_____._____
4	300	Each		A-3, 4" Service Box Cover Worcester Spec. Custom Made, Cast Iron	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 6 To Be Considered For Group 6 Award					Group 6 Grand Total	$_____._____

BIDDER NAME: _____

Group 7 - Water Pipe, Valves, Fittings

Group 7A - Class 52 Ductile Iron Pipe, Zinc Coated

Acceptable Manufacturers Include

- American AVK Co. - American Ductile Iron Pipe - Clow Valve Co. - Griffin Pipe Products Co. - Henry Pratt Co. - Kennedy Valve Co - M&H Valve Co. - McWane Ductile - Mueller Co - Sigma Corp. - Tyler Union - U.S. Pipe & Foundry Co. - United Brand

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	20	Feet		3-Inch Ductile Iron Pipe, Zinc Coated, Cement Lined, Class 52, Push On joint with gaskets	$_____._____	$_____._____
2	20	Feet		4-Inch Ductile Iron Pipe, Zinc Coated, Cement Lined, Class 52, Push On joint with gaskets	$_____._____	$_____._____
3	200	Feet		6-Inch Ductile Iron Pipe, Zinc Coated, Cement Lined, Class 52, Push On joint with gaskets	$_____._____	$_____._____
4	200	Feet		8-Inch Ductile Iron Pipe, Zinc Coated, Cement Lined, Class 52, Push On joint with gaskets	$_____._____	$_____._____
5	20	Feet		10-Inch Ductile Iron Pipe, Zinc Coated, Cement Lined, Class 52, Push On joint with gaskets	$_____._____	$_____._____
6	80	Feet		12-Inch Ductile Iron Pipe, Zinc Coated, Cement Lined, Class 52, Push On joint with gaskets	$_____._____	$_____._____
7	20	Feet		14-Inch Ductile Iron Pipe, Zinc Coated, Cement Lined, Class 52, Push On joint with gaskets	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 7A To Be Considered For Group 7A Award					Group 7A Grand Total	$_____._____

BIDDER NAME: _____

Group 7 - Water Pipe, Valves, Fittings

Group 7B - Resilient Wedge Gate Valves

Acceptable Manufacturers Include

- American AVK Co. - American Flow Control - Clow Valve Co. - Henry Pratt Co. - Kennedy Valve Co. - M&H Valve Co. - Mueller Co.

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	2	Each		4-Inch Resilient Wedge Gate Valve, Mechanical Joint, Ductile Iron Body, Epoxy Coating, Open Right	$_____._____	$_____._____
2	12	Each		6-Inch Resilient Wedge Gate Valve, Mechanical Joint, Ductile Iron Body, Epoxy Coating, Open Right	$_____._____	$_____._____
3	12	Each		8-Inch Resilient Wedge Gate Valve, Mechanical Joint, Ductile Iron Body, Epoxy Coating, Open Right	$_____._____	$_____._____
4	1	Each		10-Inch Resilient Wedge Gate Valve, Mechanical Joint, Ductile Iron Body, Epoxy Coating, Open Right	$_____._____	$_____._____
5	6	Each		12-Inch Resilient Wedge Gate Valve, Mechanical Joint, Ductile Iron Body, Epoxy Coating, Open Right	$_____._____	$_____._____
6	1	Each		14-Inch Resilient Wedge Gate Valve, Mechanical Joint, Ductile Iron Body, Epoxy Coating, Open Right	$_____._____	$_____._____
7	1	Each		16-Inch Resilient Wedge Gate Valve, Mechanical Joint, Ductile Iron Body, Epoxy Coating, Open Right	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 7B To Be Considered For Group 7B Award					Group 7B Grand Total	$_____._____

BIDDER NAME: _____

Group 7 - Water Pipe, Valves, Fittings

Group 7C - Butterfly Valves

Acceptable Manufacturers Include

- American Flow Control - Clow Valve Co. - Henry Pratt Co. - Kennedy Valve Co. - M&H Valve Co. - Mueller Co.

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	2	Each		16-Inch Butterfly Valve, *CLASS 250 B* , Mechanical Joint, Ductile Iron Body, 450 ft. lb. Rated Operator, Epoxy Coating, Open Right	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 7C To Be Considered For Group 7C Award					Group 7C Grand Total	$_____._____

BIDDER NAME: _____

Group 7 - Water Pipe, Valves, Fittings

Group 7D - Mechanical Joint Accessories

Acceptable Manufacturers Include

- Block Buster - Ebba Iron - MEGALUG - One Lok - Sigma - TUF Grip - Tyler Union - Uni Flange

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	6	Each		4" Mechanical Joint Restraint Gland w/ 4" MJ gasket, T-head bolts and nuts	$_____._____	$_____._____
2	75	Each		6" Mechanical Joint Restraint Gland w/ 6" MJ gasket, T-head bolts and nuts	$_____._____	$_____._____
3	50	Each		8" Mechanical Joint Restraint Gland w/ 8" MJ gasket, T-head bolts and nuts	$_____._____	$_____._____
4	4	Each		10" Mechanical Joint Restraint Gland w/ 10" MJ gasket, T-head bolts and nuts	$_____._____	$_____._____
5	20	Each		12" Mechanical Joint Restraint Gland w/ 12" MJ gasket, T-head bolts and nuts	$_____._____	$_____._____
6	4	Each		14" Mechanical Joint Restraint Gland w/ 14" MJ gasket, T-head bolts and nuts	$_____._____	$_____._____
7	6	Each		16" Mechanical Joint Restraint Gland w/ 16" MJ gasket, T-head bolts and nuts	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 7D To Be Considered For Group 7D Award					Group 7D Grand Total	$_____._____

BIDDER NAME: _____

Group 8 - Polyethylene Water Service Tubing

Acceptable Manufacturers Include

- Endot Industries - Silver Line Plastics

Item #	Estimated Annual Quantity	Unit of Measurement	Manufacturer	Description	Unit Cost	Total Cost
1	10,000	Feet		1-Inch Polyethylene Tubing, 100 ft. coil, PE 4710, 250 PSI	$_____._____	$_____._____
Bidder Must Bid ALL Items Within Group 8 To Be Considered For Group 8 Award					Group 8 Grand Total	$_____._____