FILE NO 5178 **WATER METERS, REGISTERS AND OTHER HARDWARE** – FILE NO 5178 – THURSDAY, APRIL 1, 2010 @ 11:00AM

FORMAL BID	
FILE NO: 5178	Item/Schedule
COMMODITY: Water Meters, Registers and other Hardware	Term of Contract
NAME OF BIDDER:	Options
BIDDER'S FED. ID.	Perf Bond Yes No Payment Bond Yes No Insurance Yes No

TO: Cynthia H. Griffin, Purchasing Agent PH: (617)349-4310 FX: (617)349-4008
795 Massachusetts Avenue, Room 303
Cambridge, MA 02139

The undersigned submits this sealed bid to provide the commodity or services identified above, described in the specifications herein and advertised in the **CAMBRIDGE CHRONICLE** on **THURSDAY**, **MARCH 18, 2010,** which is to be opened and publicly read at the Office of the Purchasing Agent, City Hall, 795 Mass. Ave., Room 303, Cambridge, MA at 11:00 a.m. on **Thursday, April 1, 2010. This bid may be downloaded from the City's web site, www.CambridgeMA.gov, Online Services, Current Bid List, File No.5178.**

The undersigned certifies that this bid is made without collusion with any other person, firm or corporation making any other bid or who otherwise would make a bid. The undersigned agrees to furnish the commodity or services in strict accordance with the bid documents, which consist of this Formal Bid and all attachments hereto. **"The submitted bid must be without conditions, exceptions or modifications to the bid document".**

The envelope containing the bid must be labeled: "This envelope contains a bid for **Water Meters, Registers and other Hardware opened at 11:00 a.m. on Thursday, April 1, 2010". The bid and all documents submitted with it are public records.**

This bid process and the award of the contract are made in conformity with M.G.L. c. 30B, unless otherwise stated.

See other side of this form for General Terms and Conditions that shall become part of any Contract awarded through this Formal Bid.

This bid includes addenda numbered:_____

SIGNATURE OF BIDDER:_____

TITLE OF SIGNATORY_____

ADDRESS OF BIDDER_____

TELEPHONE NUMBER_____**FAX NUMBER:**_____

Please check one of the following and insert the requested information:

( ) Corporation, incorporated in the State of:_____

( ) Partnership. Names of partners:_____

( ) Individual:_____

GENERAL TERMS AND CONDITIONS

LAWS: All deliveries shall conform in every respect with all applicable laws of the Federal government, Commonwealth of Massachusetts and City of Cambridge.

EQUAL OPPORTUNITY: The Vendor in the performance of the contract shall not discriminate on the grounds of race, color, religion, national origin, age or sex in employment practices or in the selection or retention of subcontractors, and in the procurement of materials or rental of equipment. The City may cancel, terminate or suspend the contract in whole or in part for any violation of this paragraph

TAXES: Purchases made by the City are exempt from the payment of Federal excise tax and the payment of Commonwealth of Massachusetts sales tax (except for gasoline) and any such taxes must not be included in the bid prices.

QUANTITIES: Unless otherwise stated, the quantities set forth herein are ESTIMATES ONLY. The City reserves the right to purchase the commodity(ies) specified in any amount less than the estimated amount.

BID PRICES: Bid prices shall include transportation and delivery charges fully prepaid to the City of Cambridge destination. Where the unit price and the total price are at variance, the unit price will prevail.

DELIVERY AND PACKAGING: Deliveries must be made in such quantities as called for in the purchase order and in the manufacturer's original packages. All deliveries must be **"inside" delivery with no assistance from City personnel. Tailgate deliveries will not be accepted.** Rejected material will be returned to the vendor at the vendor's expense.

MODIFICATION OF BIDS: Prior to bid opening, a bidder may correct, modify or withdraw its bid by making the request in writing prior to the time and date for the bid opening. All corrections and modifications must be delivered to the Purchasing Department in a sealed envelope indicating that it contains a modification or correction of the original bid submitted for the particular commodity and indicating the time and date of the bid opening.

REJECTION OF BIDS: The City reserves the right to reject any and all bids if it is in best interest of the City to do so.

AWARD OF CONTRACT: Contract(s) will be awarded within forty-five days of the bid opening unless award date is extended by consent of all parties concerned.

INDEMNITY: Unless otherwise provided by law, the Vendor will indemnify and hold harmless the City against any and all liability, loss, damages, costs or expenses for personal injury or damage to real or tangible personal property which the City may sustain, incur or be required to pay, arising out of or in connection with the performance of the Contract by reason of any negligent action/inaction or willful misconduct by the Contractor, its agents, servants or employees

TERMINATION OF CONTRACT: Except as otherwise provided in the Articles of Agreement, the City may terminate the contract upon seven days notice.

ASSIGNABILITY: The Vendor shall not assign, sell, subcontract or otherwise transfer any interest in this contract without the prior written consent of the City.

MATERIAL SAFETY DATA SHEETS: Pursuant to M.G.L. c. 111F, ss. 8, 9, and 10, any vendor who receives a contract resulting from this invitation agrees to submit a Material Safety Data Sheet for each toxic or hazardous substance or mixture containing such substance when deliveries are made. The vendor agrees to comply with all requirements set forth in the pertinent laws above.

NAME OF BIDDER: _____

TO: Cynthia H. Griffin, Purchasing Agent
City Hall, Cambridge, Massachusetts 02139

The undersigned hereby proposes to furnish and deliver **WATER METERS, REGISTERS AND OTHER HARDWARE** to the City of Cambridge, as needed, for a period of one year all in accordance with the attached specifications and following proposed schedule. Prices must remain FIRM during the entire contract period.

The City will make an award on a line by line basis on Section 1; a contract will be awarded to the responsive and responsible bidder offering the lowest price per item. **Section 2- 5 a contract will be awarded to the responsible and responsive bidder offering the lowest total price per section.**

Contracts will be awarded within forty-five days of the bid opening, unless award date is extended by consent of all parties concerned.

Prior to bid opening, a bidder may correct, modify or withdraw its bid by making the request in writing prior to the time and date of the bid opening. All corrections and modifications must be delivered to the Purchasing Department in a sealed envelope with a notation on the envelope indicating that it contains a modification or correction of the original bid submitted for the particular commodity and indicating the date and time of the bid opening.

PLEASE SUBMIT YOUR BID IN DUPLICATE.

A sample contract is attached hereto. The bidder must be willing to sign the City's contract. The City will not accept a bidder's terms & conditions.

Questions
Questions concerning this Invitation to Bid including any exceptions to the specifications must be submitted in writing and faxed to the Office of the Purchasing Agent, Cynthia H. Griffin, Fax # 617-349-4008. All questions must be submitted no later than Thursday, March 25, 2010 by 12:00 p.m. An addendum will be posted to the website to notify all bidders of the questions and answers.

If downloading this Invitation for Bid from the Purchasing Website please check back on the website for Addendums before submitting your bid to the City. Bidders will not be notified individually of Addendums.

Please check the bidders list on the website. If your firm in not listed on the bidders list please click on "Registry" and notify us that you have downloaded the bid document.

Bid Results
The tab sheet and the contract award information will not be mailed to the bidders individually. A tab sheet with the bid results will be posted to the website soon after the bid opening. The tab sheet will include the "contract award" information as soon as it is determined.

Confidentiality and Public Records Law
All bids or other materials submitted by the vendor in response to this Invitation to Bid will be open for inspection by any person and in accordance with the Massachusetts Public Records Law.

Scope of Services
The City will be implementing an on-going meter replacement project during the term of the Meter Bid contract period. Meter replacement work will be completed by Cambridge Water Department Staff, and if required, by outside contractors. By submitting a meter supply Bid, the meter vendor is stating they will work jointly and cohesively with City or Contractor forces and support both delivery and product performance issues for these meters. All meter deliveries are expected to be directed to the **Cambridge Water Department Receiving Area at the rear of the Walter J. Sullivan Treatment Plant, located at 250 Fresh Pond Parkway, Cambridge, Massachusetts, 02138**.

NAME OF BIDDER: _____

The City will provide no guarantee level of purchase quantities during this term. All ordered products will require delivery within thirty (30) days from date of order placement unless otherwise granted an allowance by the City. Failure to meet this delivery requirement will permit the City to acquire meter products from other meter supply vendors. This stipulation shall not apply to shipments delayed due to Acts of God, strikes, security protocols, or other matters beyond vendor control. All meters are to be delivery complete with any nuts, bolts, gaskets, spools, spacers, fittings, or attachments as indicated in these specifications.

WATER METER TECHNICAL SPECIFICATION

A. Positive Displacement Type Cold Water Meters

B. Turbine Type Cold Water Meters

C. Compound Type Cold Water Meters

D. Electronic (Magnetic Flow) Type Cold Water Meters

E. Single-Jet Cold Water Meters

WATER METERS

General Requirements

It is the intention of these specifications to obtain water meters complete with an electronic register that meet the latest revision of the American Water Works Association (AWWA) standards C700, C701, C702, C707, and C712. With the exception of the Electronic (Magnetic Flow) Type Cold Water Meters, all other meters shall be equipped with an absolute encoder type meter register. The meter and register shall be capable of directly interfacing with the STAR Hexagram fixed radio frequency (RF) AMR System, without need for any on-site register programming. In addition, the meter registers shall be designed as three (3) - wire mode AMR compatible registers requiring ***no*** need for installation of (by CWD or designated Contractor Personnel) any intermediary devices or meter interfacing units (MIU), etc. necessary to communicate meter register readings through to the devices constituting the AMR System network, and as well, the meter registers shall be required to have been compatible with STAR for at least two (2) years prior to award of the bid. All water meter registers shall read in **cubic feet only** with no exception.

Meter Register Accuracy – The CWD "interrogates" each encoder-type water meter at each respective account four (4) times a day in order to view incremental water usage (digital or numeric readouts of cubic footage used at each water billing account) via the STAR Hexagram AMR system, and the CWD requires a high level of accuracy from each and every meter register to assure proper billing for each respective CWD water billing account. Therefore, the CWD is specifying the following range of values for errant reads from *each and every water meter register*:

Maximum Error Rate: one (1) errant water usage read per two-thousand (2,000) meter reads as reported through the STAR Hexagram AMR system. In other words**, no more than** 1 read error per 2,000 reads shall be allowed, and this is as well equivalent to an accuracy rate of 99.95% in reporting *correct* water usage reads. Please note: an errant read, as defined herein, is an incorrect meter read reported through the STAR Hexagram AMR system as either a "phantom read" displaying *incorrect digits (numeric)*, or as an errant read displaying *non-numeric characters*.

Minimum Error Rate: three point four (3.4) errant water usage reads per one-million (1,000,000) meter reads as reported through the STAR Hexagram AMR system. Please note: 3.4 errant reads per 1,000,000, also known in general industry as **six sigma accuracy**, and equivalent to a 99.99966% accuracy rate in making *correct* reads, is viewed by the CWD as an ideal error rate with regards to the ability for each and every meter register to properly and accurately display water used at each at each respective account via "interrogation" by the STAR Hexagram AMR system.

Although six sigma accuracy is preferred, the CWD is requiring that each meter vendor shall at least meet the "Maximum Error Rate" criteria as mentioned above. As well, the CWD shall require written documentation (QA/QC reports, letters of Certification, etc.) from each water meter vendor of their ability to *meet or exceed* the encoder-type register accuracy in reporting water usage at each billing account as described herein, and this written documentation shall be submitted as an attachment to each respective water meter vendor's bid submission.

Please note: With regards to the question of encoder-type register accuracy or ability to display proper water usage reads via the AMR system, this section is not making any reference to other types of material defects pertaining to each respective water meter. In other words, mechanical defects within each respective encoder-type register, other than those that may cause errant reads via the STAR Hexagram AMR system, are not to be construed as included in the Maximum and Minimum Error Rate Range as specified above.

All meters and parts required for their installation shall be tested and in compliance with the requirements of the latest revision of the AWWA Standards C700, C701, C702, C707, and C712.

Water meters and required attachment parts in contact with potable water shall be fabricated from City of Cambridge approved **no lead/ultra low lead material** containing residual lead levels that **shall not exceed a maximum of 0.25% by weight**. Moreover, said meter and attachment parts in contact with drinking water supply shall be certified as suitable for contact with potable water in compliance with **ANSI/NSF Standard 61, Drinking Water System Components – Health Effects**. Meter parts not in contact with potable water shall comply with the requirements of ASTM B 62 and ASTM B 584 Copper Alloy Number C83600 or C84400 respectively.

Meters shall be guaranteed against defects in materials and workmanship for a period of one year from date of installation. In addition, unless otherwise stated herein, all meter registers shall be warranted for 15 years from the date of installation. A full copy of the meter and register warranty shall be provided with Bid submittal. Defective parts will be replaced without charge to the city. The limit of guarantee for water meters and component parts shall be as indicated by the manufacturer.

The meters and component manufacturers must submit an affidavit confirming that the items to be supplied meet all the requirements specified herein.

Rejected Meters
The meter vendor shall at his own expense replace all rejected meters. All meters shall be properly boxed to protect them against damage in shipment. Meters shall be rejected by the City when damages to the container indicate the possibility of damage to the meter. The City will not accept title to the property until inspection and testing of the meters are satisfactory to the Department.

A. POSITIVE DISPLACEMENT TYPE COLD WATER METERS, (BID SECTION 1)

Type
Only Magnetic Driven, Sealed Register, Positive Displacement Oscillating Piston or Nutating Disc Type Meters in available sizes of 5/8" through 2" are acceptable for the City of Cambridge. Meter must conform to American Water Works Standard C-700 as most recently revised.

Sizes	Connections
5/8-inch x 1/2-inch	Screw End with Rubber Washers
5/8-inch x ¾-inch	Screw End with Rubber Washers
¾-inch	Screw End with Rubber Washers
1-inch	Screw End with Rubber Washers
1 ½-inch	Bronze Flanges with Rubber Washers
2-inch	Bronze Flanges with Rubber Washers

Length
Meter must conform to AWWA Standard C-700 as most recently revised

Cases
All meters shall have a no-lead or ultra low-lead (see General Requirements) outer case with a separate measuring chamber that can easily be removed from the case. All meters shall have cast on them, in raised characters, the size, model and direction of water flow through the meter. Cast Iron or Brass frost bottoms shall be provided on 5/8", 3/4", and 1" size meters. The manufacturer's serial number must be permanently affixed to the maincase to aid in identification and must be visible so that it can be read from directly above the water meter. The Cambridge Water Department would prefer that the first two digits of the serial number be the year the meter was manufactured. All cases shall be guaranteed to be free from defects for twenty-five (25) years from date of shipment. Meters 1 ½" and 2" size shall have two-bolt oval flanges, faced and drilled.

No threaded body meters are required. The City prefers all 1 1/2" or 2" meters have a minimum 1" test plug to permit future on-site testing without removing the meter. This is a preference, not a requirement. Meter vendors should advise the City of whether or not this feature is provided with 1 ½" and 2" meters being bid under Section 1.

External Bolts and Washers
All external bolts and washers, etc. shall be of stainless steel or other corrosion resistant material as approved by the Cambridge Water Department and shall be easily removed from the maincase.

Measuring Chambers
The measuring chamber shall be made of a copper alloy or a suitable synthetic polymer and shall not be cast as part of the main case. All piston or disc assemblies shall be interchangeable in all measuring chamber assemblies of the same size. The measuring chambers for all meters shall be carefully machined and secured in position in the outer casings so that any slight distortion of the casings which might occur when operating with a pressure less than 150 psi pressure will not affect the accuracy of the meters. The motion of the piston will be transmitted to the sealed register through the use of a magnetic coupling.

Strainers
All meters shall be equipped with a corrosion resistant strainer, with an effective straining area of at least twice the bore diameter, which can be easily removed from the meter without the meter itself being disconnected from the pipeline.

Change Gears
Change gears will not be allowed to calibrate the meter. All registers of a particular registration and meter size shall be identical and completely interchangeable.

Accuracy and Head Loss
Meters shall meet or exceed current AWWA C-700, current revision, test flows, head loss and accuracy standards. Bidders should note if the meters exceed C700. In addition, each encoder-type meter register head shall be able to measure cubic footage of water used within an accuracy range of **no more** than one (1) errant read per every two-thousand (2,000) meter reads (Maximum Error Rate = 99.95% correct reads) down to a Minimum Error Rate of three point four (3.4) errant reads per one-million (1,000,000) reads (=99.99966% correct reads, or **six sigma** accuracy) via the "interrogation" of each respective water meter at each respective water billing account by the STAR Hexagram AMR system. Each water meter vendor shall supply written documentation as an attachment to their respective water meter bid submission verifying the ability of their encoder-type register to perform within this water usage reading accuracy range as specified. Please note: an errant read is defined as a misread reporting either an all digital (numeric) "phantom" read or a misread that displays non-numeric characters.

Pressure Capability
Meters shall operate up to a continuous working pressure of 150 pounds per square inch (psi), without leakage or damage to any parts. The accuracy shall not be affected when operating at this pressure due to possible distortion. Accuracy shall not be affected by variations in pressure up to 150 psi.

Register
Register must be permanent and hermetically sealed and firmly attached to meter case. A security seal must be provided to prevent easy removal and tampering. The register must be a direct read, absolute encoder type with wheel positioning reading technology (minimum six (6) encoder wheels) and be readily adaptable to the STAR Hexagram fixed radio frequency (RF) AMR System, without need for any on-site register programming nor need for further installation of (by CWD or their designated Contractor Personnel) any intermediary devices to attach to the register to facilitate water meter reading transmissions to each respective meter transmitting unit (MTU).

The register shall be furnished with a test hand and/or a leak indicator and read in **cubic feet**. The size of the meter shall be marked permanently on the register dial face.

The register shall be warranteed for 15 years from the date of installation. Any register that fails during this warranty period shall be replaced with a new register free of charge to the City.

Manufacturing
Meters shall be manufactured by a company that has manufactured water meters for at least ten (10) years and who manufactures all types and sizes indicated in Bid Section 1 of these specifications. The specific model being bid must have been in successful and continuous municipal service for at least two (2) years, and as well, the meter registers shall be required to have been compatible with the STAR Hexagram AMR System for at least two (2) years prior to award of bid. The manufacturer shall provide a certificate showing that each meter has been tested for accuracy of registration and that it complies with the accuracy and capacity of AWWA C700.

B. TURBINE TYPE COLD WATER METERS (BID SECTION 2)

Type
Cold-water turbine type meters shall be AWWA Class II and meet the requirements of the latest revision of AWWA Standard C701-02 and supplementary requirements provided herein. Meters provided shall be the horizontal axis, multi-vane design, suited for moderately

low to sustained high flow demands, and available in sizes 3" to 6". All turbine meters shall be equipped with a separate or integrated Strainer that shall be attached to the upstream side of the meter. All turbine meters shall be equipped with a valved, in-line test provision, which will be no less than one and one half inch (1 1/2") for meters three inch (3") in size and two inch (2") in diameter for meter sizes four inch (4") through six inch (6"). Two one and one half-inch (2, 1.5") test ports may be used in place of a single two-inch (2") test port. The test spool requirement will not pertain to manufactured meters which have test ports incorporated into the meter body, however, even these meters will be required to have a valved connection from the test port to assist with line depressurization and on-site meter testing. All meters must use spools, spacers, or other pipeline hardware to meet the laying length dimensions noted below.

Size
The size of the Turbine Meter Assembly shall be determined by the nominal size of the opening of the inlet and outlet flanges of the meter.

Size	Connection
3-inch	Round Flanged Ends with Rubber Ring Gaskets
4-inch	Round Flanged Ends with Rubber Ring Gaskets
6-inch	Round Flanged Ends with Rubber Ring Gaskets

Length
The overall length of the Turbine Meter Assembly, complete with strainer, test spool and/or spacers shall be the face-to-face dimensions as listed below:

SIZE OF METER	MAXIMUM LENGTH
3"	24"
4"	29"
6"	36.5"

All Turbine Meter Assembly units shall be provided to the City at the **maximum length** indicated above. Supplemental spools or spacers may be provided to achieve the noted dimension; these components will be considered a part of the meter. The Bidder will also supply all bolts, nuts, gaskets, and studs for standard replacement installations.

Cases
Main cases shall be constructed of a no-lead or ultra low-lead (see General Requirements) material that can withstand minimum water pressures of not less than 150 psi. In no instance shall repaired casings be acceptable.

Strainers
Meters may contain integrated or external body strainers. The strainer body shall be constructed of no-lead or ultra low-lead (see General Requirements) material that can withstand minimum water pressures of not less than 150 psi. Unitized or external strainers shall contain a cover plate that is removable for inspection and debris removal.

Connections
Flanges for meters, strainers, spools, or spacers 3" through 6" size shall be of the Class 150 bronze, Class 125 Cast Iron, Class 125 – 250 Ductile, Epoxy Coated Steel, or Cast Iron, flat faced and shall conform to ANSI Standard B16.24, B16.1, or B16.5 for specified dimensions. No companion flanges are required.

Register
Register must be hermetically sealed and firmly attached to meter case. If applicable, a security seal must be provided to prevent easy removal and tampering. The register must be a direct read, absolute encoder type with wheel positioning reading technology (minimum six (6) encoder wheels) and be readily adaptable to the STAR Hexagram fixed radio frequency (RF) AMR System, without need for any on-site register programming nor need for installation of (by CWD or designated

Contractor Personnel) any intermediary devices to attach to the register to facilitate water meter reading transmissions to each respective meter transmitting unit (MTU).

The register shall be furnished with a test hand and/or a leak indicator and read in cubic feet. The size of the meter shall be marked permanently on the register dial face.

The register shall be warranted for 15 years from the date of installation. Any register that fails during this warranty period shall be replaced with a new register free of charge to the City.

Meter Identification
A unique serial number shall be stamped or embossed on each meter. The CWD would prefer that the first two digits of the serial number be the year the meter was manufactured.

Turbine Measuring Chamber
The turbine-measuring chamber shall be no lead or ultra low lead material or suitable synthetic polymer construction and shall be secured by stainless steel bolts or other nonferrous fasteners. The turbine chamber shall be positioned so that water must essentially travel in a straight-line path from the meter inlet to the meter outlet during high flow operation. The measuring cage shall be a self-contained unit attached to the cover for easy removal. The cage shall contain all the elements of the turbine, gear train and thrust bearings. The turbine shall be securely fastened to the shaft and have suitable thrust bearings both up and down stream or as determined by product design.

Registration
Meter registration shall accurately record not less than ninety eight and one half percent nor more than one hundred one and one half percent (98.5% - 101.5%) of actual throughput at all normal test flows.

Size	Normal Flow (gpm)	Minimum Limits Flow (gpm)*
3"	8 - 350	6
4"	15 – 630	10
6"	30 - 1400	15

* - Meter must register no less than 95% of actual throughput at this rate of flow.

Accuracy and Head Loss
Meters shall meet or exceed current AWWA C-701-02, current revision, test flows, head loss and accuracy standards. Bidders should note if the meters exceed C701-02. In addition, each encoder-type meter register head shall be able to measure cubic footage of water used within an accuracy range of **no more** than one (1) errant read per every two-thousand (2,000) meter reads (Maximum Error Rate = 99.95% correct reads) down to a Minimum Error Rate of three point four (3.4) errant reads per one-million (1,000,000) reads (=99.99966% correct reads, or **six sigma** accuracy) via the "interrogation" of each respective water meter at each respective water billing account by the STAR Hexagram AMR system. Each water meter vendor shall supply written documentation as an attachment to their respective water meter bid submission verifying the ability of their encoder-type register to perform within this water usage reading accuracy range as specified. Please note: an errant read is defined as a misread reporting either an all digital (numeric) "phantom" read or a misread that displays non-numeric characters.

Pressure Test
Meters shall be guaranteed to operate successfully at a working pressure of 150 pounds per square inch, without leakage or damage to any component.

Meter Guarantee
Meters shall be guaranteed against defects in material and workmanship for a period of one year from the date of installation. A full copy of the meter and register warranty shall be provided with Bid submittal.

External Bolts
All external bolts, washer, hardware, etc., shall be of stainless steel or other corrosion resistant composition as approved by the City.

Manufacturing
Meters shall be manufactured by a company which has manufactured water meters for at least ten (10) years and who manufactures all types and size meters as indicated in Bid Section 2 of these specifications. The specific model being bid must have been in successful and continuous municipal service for at least two (2) years, and as well, the meter registers shall be required to have been compatible with the STAR Hexagram fixed radio frequency (RF) AMR System for at least two (2) years prior to award of bid.

C. COMPOUND TYPE WATER METERS (BID SECTION 3)

Type
Compound meters provided shall be of any of the following designs provided they meet all the other noted performance requirements:
Single Register, Unitized Body, Dual Measuring Elements.
Dual Register, Separated Body, Dual Measuring Elements.
Dual Register, Unitized Body, Dual Measuring Elements.

All Compound Type Water Meters provided shall meet AWWA C702-01, or latest revision. All Compound meters shall be equipped with an integral or external Strainer that shall be attached to the upstream side of the meter. All Compound meters shall be equipped with a valved, in-line test provision, which will be no less than one and one half inch (1 1/2") for meters three inch (3") in size and two inch (2") in diameter for meter sizes four inch (4") and six inch (6") size. Two one and one half-inch (2, 1.5") test ports may be used in place of a single two-inch (2") test port. The test spool requirement will not pertain to manufactured meters which have test ports incorporated into the meter body, however, even these meters will be required to have a valved connection from the test port to assist with line depressurization and on-site meter testing. All meters must use spools, spacers, or other pipeline hardware to meet the laying length dimensions noted below.

Size
The size of the meter assembly shall be determined by the nominal size of the opening of the inlet and outlet flanges of the meter.

Size	Connection
3-inch	Round Flanged Ends with Rubber Ring Gaskets
4-inch	Round Flanged Ends with Rubber Ring Gaskets
6-inch	Round Flanged Ends with Rubber Ring Gaskets

Length
The overall length of the compound unit complete with strainer, test spool and/or spacers shall be the face-to-face dimension as listed below:

SIZE OF METER	MAXIMUM LENGTH
3"	24"
4"	29"
6"	36.5"

All 3", 4" and 6" Compound Type Meters shall be provided to the City at the **maximum length** indicated above. Supplemental spools or spacers may be provided to achieve the noted dimension; these components will be considered a part of the meter.

Cases
Main cases shall be constructed of no-lead or ultra low-lead (see General Requirements) material, Epoxy Coated Steel or some other CWD-approved material that can withstand minimum water pressures of not less than 150 psi. In no instance shall repaired casings be acceptable.

Strainers
Meters must come equipped with an integral or external body strainer. The strainer body shall be constructed of no-lead or ultra low-lead (see General Requirements) material, Epoxy Coated Steel or some other CWD-approved material that can withstand minimum water pressures of not less than 150 psi. External strainer bodies shall contain a cover plate that is removable for inspection and debris removal.

External Bolts
All external bolts, washer, hardware, etc., shall be of stainless steel or non ferrous material.

Connections
Flanges for 3", 4" and 6" size meters shall be of the Class 150 bronze round type or Class 125 Steel Epoxy Coated; flat faced and shall conform to ANSI B 16.24 for specified diameter. No companion flanges are required.

Register(s)
Register(s) must be hermetically sealed and firmly attached to meter case. If applicable, a security seal must be provided to prevent easy removal and tampering. The register must be a direct read, absolute encoder type with wheel positioning reading technology (minimum six (6) encoder wheels) and be readily adaptable to the STAR Hexagram fixed radio frequency (RF) AMR System, without need for any on-site register programming nor need for installation of (by CWD or designated Contractor Personnel) any intermediary devices to attach to the register to facilitate water meter reading transmissions to each respective meter transmitting unit (MTU). The register shall be furnished with a test sweep hand and/or a leak indicator and read in cubic feet. In addition, each encoder-type meter register head shall be able to measure cubic footage of water used within an accuracy range of **no more** than one (1) errant read per every two-thousand (2,000) meter reads (Maximum Error Rate = 99.95% correct reads) down to a Minimum Error Rate of three point four (3.4) errant reads per one-million (1,000,000) reads (=99.99966% correct reads, or **six sigma** accuracy) via the "interrogation" of each respective water meter at each respective water billing account by the STAR Hexagram AMR system. Each water meter vendor shall supply written documentation as an attachment to their respective water meter bid submission verifying the ability of their encoder-type register to perform within this water usage reading accuracy range as specified. Please note: an errant read is defined as a misread reporting either an all digital (numeric) "phantom" read or a misread that displays non-numeric characters.

A unique serial number shall be stamped or embossed on each meter. The CWD would prefer that the first two digits of the serial number be the year the meter was manufactured.

The register shall be warranted for 15 years from the date of installation. Any register that fails during this warranty period shall be replaced with a new register free of charge to the City.

Intermediate Gear Trains
When present, intermediate gear trains, including any drive coordinator parts, shall be located in oil filled, O-ring gasketed cavity, which is completely separated from pipeline or surface water. This does not include lower drive assemblies or directional transfer cases located within the meter cavity.

Low Flow Measuring Chamber
The low flow-measuring chamber shall be a self-contained unit including a strainer, which can be firmly seated and removed as a unit. The measuring chamber shall be the oscillating piston or nutating disc positive displacement type and shall be composed of no-lead or ultra low-lead (see General Requirements) material or a suitable synthetic polymer. All other components of the measuring chamber shall be of corrosion-resistant materials such as stainless steel.

High Flow Measuring Chamber
The high flow-measuring element shall be a turbine design. The chamber shall be constructed from no-lead or ultra low-lead (see General Requirements) material or suitable synthetic polymer and shall be secured by stainless steel bolts or other nonferrous fasteners. The turbine chamber shall be positioned so that water must essentially travel in a straight-line path from the meter inlet to the meter outlet during high flow operation.

Compounding Valve
The compounding valve may be of the weighted, spring loaded or hydraulically actuated design. Valve assembly should provide full closure against a matching seat component and be easily removed for repair.

Registration
Meter registration shall accurately record not less than ninety seven percent nor more than one hundred three percent (97% - 103%) of actual throughput at all normal test flows. The crossover flow (that point when measurement transfers from one measuring chamber to the other) accuracy must not be less than ninety five percent (95%). Test flow ranges for all compound type meters must meet those flow requirements as listed below:

Size	Normal Flow Limits (gpm)	Minimum Flow (gpm)*
3"	4 – 320	1/2
4"	6 – 500	¾
6"	10 – 1000	1 1/2

* - Meter must register no less than 95% of actual throughput at this rate of flow.

Pressure Test
Meters shall be guaranteed to operate successfully at a working pressure of 150 pounds per square inch, without leakage or damage to any component.

Meter Guarantee
Meters shall be guaranteed against defects in material and workmanship for a period of one year from the date of installation. A full copy of the meter and register warranty shall be provided with Bid submittal.

Manufacturing
Meters shall be manufactured by a company which has manufactured water meters for at least ten (10) years and who manufactures all types and size meters as indicated in Bid Section 3 of these specifications. The specific model being bid must have been in successful and continuous municipal service for at least two (2) years, and as well, the meter registers shall be required to have been compatible with the STAR Hexagram fixed radio frequency (RF) AMR System for at least two (2) years prior to award of bid.

D. ELECTRONIC (MAGNETIC FLOW) TYPE COLD WATER METERS (BID SECTION 4)

Type
Meters purchased under these specifications shall be a new technology microprocessor-based electronic water flow meter capable of monitoring flow totals and flow rate. The meter shall have no moving parts to ensure that there is no damage from particulate matter. The meter shall be line powered using normal, 115V AC current. Preference is for a unit that is both line powered with battery back-up. Where applicable, lithium batteries shall be used to provide back-up operating life of up to 3 years. It shall also be possible to change the batteries in the field.

Registration Accuracy
Accuracy in the normal flow range shall be programmable to AWWA C701 or AWWA C702 in both forward or reverse flow direction, if that feature is offered. The meter performance shall have been verified on a fully traceable test facility that is internationally accepted (such as NEMA, NIST or equivalent). In addition, each encoder-type meter register head shall be able to measure cubic footage of water used within an accuracy range of **no more** than one (1) errant read per every two-thousand (2,000) meter reads (Maximum Error Rate = 99.95% correct reads) down to a Minimum Error Rate of three point four (3.4) errant reads per one-million (1,000,000) reads (=99.99966% correct reads, or **six sigma** accuracy) via the "interrogation" of each respective water meter at each respective water billing account by the STAR Hexagram AMR system. Each water meter vendor shall supply written documentation as an attachment to their respective water meter bid submission verifying the ability of their encoder-type register to perform within this water usage reading accuracy range as specified.

Please note: an errant read is defined as a misread reporting either an all digital (numeric) "phantom" read or a misread that displays non-numeric characters.

Sensor
The flow sensor shall be rated to IP68 (NEMA 6P) and be suitable for indefinite submergence to a depth of up to 33 feet. The sensor shall also be suitable for installation in underground pipes without the need for a meter vault.

The meter shall be suitable for a maximum working temperature of 158 degrees Fahrenheit at pressures up to 150 psi or as limited by the flange rating.

The wetted materials shall be compatible with, and suitable for, potable water. An internationally recognized body such as AWWA, WRC or equal shall certify the liner. Acceptable electrode material is stainless steel.

Display
The electronic display unit should be able to operate within the range of -22°F and 158°F and capable of withstanding 100% humidity without suffering any damage. An option of the display being either sensor mounted or remote mounted shall be available, with remote mounted displays suitable for installation up to 150 feet from sensor.

The device shall incorporate a menu selection allowing range, units, etc., to be made. Data shall be stored in a non-volatile memory for retention in the event of a power outage. The totalizer functions shall be user defined by means of software programming or on-site selection. There shall be independent totalizer displays to give forward total and reverse total, if applicable.

Laying Length
Meters shall not require any upstream strainer but shall be shipped with spools or spacers to meet the laying length dimensions noted below. Also, no in-line test port provisions are required for these meters. The overall length of the electronic unit complete with spool and/or spacers shall be the face-to-face dimensions as listed below:

SIZE OF METER ASSEMBLY	REQUIRED LENGTH
3"	24"
4"	29"
6"	36.5"

All 3", 4", and 6" Electronic Type Meters shall be provided to the City at the **required length** indicated above. Supplemental spools or spacers may be provided to achieve the noted dimension; these components will be considered a part of the meter.

Cases
Maincases shall be constructed of no-lead or ultra low-lead (see General Requirements) material, Epoxy Coated Steel or some CWD-approved material that can withstand minimum water pressures of not less than 150 psi. In no instance shall repaired casings be acceptable.

Strainers
No strainers are required with the Electronic meters.

External Fasteners
All external fasteners on the meter shall be of stainless steel or nonferrous material.

Connections
Flanges for 3", 4", 6", and 8" size Electronic meters shall be of the Class 150 bronze round type or Class 125 Steel Epoxy Coated, flat faced and shall conform to ANSI B 16.24 for specified diameter. No companion flanges are required.

Register
The electronic meter display unit shall provide multiple outputs in both pulse and analog scales that can readily adaptable to many commonly used AMR or telemetry products. The Bidder will need to provide information about any limitation or consideration for the Electronic meter registration and integration to AMR technologies, e.g., the STAR Hexagram System. The register shall read in cubic feet only.

Registration
Meter registration shall accurately record not less than ninety eight percent nor more than one hundred two percent (98% - 102%) of actual throughput at a programmable flow range of .2 fps (feet per second) to 20 fps for all meter sizes, 3" through 8".

Pressure Test
Meters shall be guaranteed to operate successfully at a working pressure of 150 pounds per square inch, without leakage or damage to any component.

Meter Guarantee
Meters shall be guaranteed against defects in material and workmanship for a period of one year from the date of installation. A full copy of the meter and register warranty shall be provided with Bid submittal.

External Bolts
All external bolts, washer, hardware, etc., shall be of stainless steel or other corrosion resistant composition as approve by the City.

Manufacturing
Meters shall be manufactured by a company that has manufactured water meters for at least ten (10) years and who manufactures all types and size meters as indicated in Bid Section 4 of these specifications. The specific model being bid must have been in successful and continuous municipal service for at least two (2) years, and as well, the .meter registers shall be required to have been compatible with AMR technologies, e.g., the STAR Hexagram System, for at least two (2) years prior to award of bid, and as well, the meter registers shall be required to have been compatible with the STAR Hexagram fixed radio frequency (RF) AMR System for at least two (2) years prior to award of bid. The manufacturer shall provide a certificate showing that each meter has been tested for accuracy of registration and that it complies with the accuracy and capacity of AWWA C701 or C702.

E. SINGLE-JET COLD WATER METERS (BID SECTION 5)

Type
Cold-water single-jet type meters shall meet the requirements of the latest revision of AWWA Standard C712-02 and supplementary requirements provided herein. Single-jet meters are known as inferential meters designed to a multi-bladed rotor mounted upon a vertical spindle within a cylindrical cavity. The rotor blades, set in motion by a single jet of water created by a large inlet opening that gradually reduces in diameter as it approaches the cylindrical cavity, are struck by the jet of water perpendicularly or tangentially, with the resulting rotor spin being linearly proportional to velocity of water flowing through the meter. The single-jet meters shall be designed to be capable of accurately measuring low flow and high flow water usage.

Size
The size of the meter assembly shall be determined by the nominal size of the opening of the inlet and outlet flanges of the meter.

Length
The overall length of the compound unit complete with strainer, test spool and/or spacers shall be the face-to-face dimension as listed below:

SIZE OF METER	MAXIMUM LENGTH
2"	17"
3"	24"
4"	29"
6"	36.5"

Cases
All meters shall have either an outer case with separate, removable measuring chambers or cages in which the rotor operates, or the main case shall serve to center the rotor in relation to the flow. Cases shall not be repaired in any manner. The inlet and outlet of the main case shale have a common axis and flanges shall be parallel.

External Bolts and Washers
All external bolts and washers, etc. shall be of stainless steel or other corrosion resistant material as approved by the Cambridge Water Department and shall be easily removed from the main case.

Measuring Chambers
The measuring chamber, when provided, shall be a self-contained unit firmly seated and easily detached and removed from the main case. The measuring chamber shall be secured in the main case so that the accuracy of the meter will not be affected by any distortion of the main case that might occur when operating with a pressure of less than 150 psi.

Strainers
If required, meters shall be provided with strainer screens either installed in the meters or within external strainers. Strainer screens shall be rigid, snug fitting, and easy to remove and shall have an effective straining area of at least double that of the main-case inlet.

Registers
Register must be hermetically sealed and firmly attached to meter case. If applicable, a security seal must be provided to prevent easy removal and tampering. The register must be a direct read, absolute encoder type with wheel positioning reading technology (minimum six (6) encoder wheels) and be readily adaptable to the STAR Hexagram fixed radio frequency

(RF) AMR System, without need for any on-site register programming nor need for installation of (by CWD or designated Contractor Personnel) any intermediary devices to attach to the register to facilitate water meter reading transmissions to each respective meter transmitting unit (MTU). The register shall be warranted for 15 years from the date of installation. Any register that fails during this warranty period shall be replaced with a new register free of charge to the City.

Accuracy and Head Loss
Meters shall meet or exceed current AWWA C712-02, current revision, test flows, head loss and accuracy standards. Bidders should note if the meters exceed AWWA C712-02. In addition, each encoder-type meter register head shall be able to measure cubic footage of water used within an accuracy range of **no more** than one (1) errant read per every two-thousand (2,000) meter reads (Maximum Error Rate = 99.95% correct reads) down to a Minimum Error Rate of three point four (3.4) errant reads per one-million (1,000,000) reads (=99.99966% correct reads, or **six sigma** accuracy) via the "interrogation" of each respective water meter at each respective water billing account by the STAR Hexagram AMR system. Each water meter vendor shall supply written documentation as an attachment to their respective water meter bid submission verifying the ability of their encoder-type register to perform within this water usage reading accuracy range as specified. Please note: an errant read is defined as a misread reporting either an all digital (numeric) "phantom" read or a misread that displays non-numeric characters.

Pressure Capability
Meters shall operate up to a continuous working pressure of 300 pounds per square inch (psi), without leakage or damage to any parts. The accuracy shall not be affected when operating at this pressure due to possible distortion. Accuracy shall not be affected by variations in pressure up to 300 psi.

Registration
At any rate of flow within the normal test flow limits for the given meter, the meter shall register not less than 98.5 percent and not more than 101.5 percent of the water that passes through it. From the minimum test flow rate to the lowest normal test flow rate, the meter shall register not less than 95 percent and not more than 101.5 percent of the water that actually passes through it.

Pressure Test
The entire meter assembly shall be guaranteed to operate successfully at a working static pressure of 300 pounds per square inch, without leakage or damage to any component.

Meter Guarantee
Meters shall be guaranteed against defects in material and workmanship for a period of one year from the date of installation. A full copy of the meter and register warranty shall be provided with Bid submittal.

QUALITY REQUIREMENTS

A "NO" response or failure to respond to any of the following Quality Requirements will result in a rejection of your bid (1-5).

1. Proposed water meter manufacturer has ten (10) years of experience.

   YES **NO**

2. The bidder has been a supplier of water meters for at least five (5) years.

   YES **NO**

3. Bidder has supplied water meters to a minimum of three other municipalities in the State of Massachusetts.

   YES **NO**

4. Bidder can provide, upon request, proof of financial solvency.

   YES **NO**

5. The submitted bid is without conditions, exceptions or modifications to the bid document.

   YES **NO**

BID SUBMISSION REQUIREMENTS

Failure to submit with your bid the documents requested may result in the determination that your bid is non-responsive unless the City deems such failure to be a minor informality.

1. Bidder shall supply references, complete with telephone numbers and contact names, from at least three (3) municipalities located in Massachusetts where bidder has sold similar equipment and supplies. Such references will be used to assist in the determination of a bidder's responsibility. In addition, the City reserves the right to use itself as a reference.

2. Bidder will supply an Affidavit of Compliance from the meter manufacturer for those meters being bid. The affidavit will state that the subject meter(s), or meter assemblies, furnished for the project shall comply with both the appropriate AWWA standards as well as those requirements listed herein.

3. Bidder shall submit ALL affidavits and licensing agreements as required in the specification attached hereto.

4. Bidder shall submit completed data sheet.

BIDDER DATA SHEET

All questions must be answered and the data given must be clear and comprehensive. Bidders may submit additional information if appropriate.

1. Name of Bidder: _____

2. Is the Bidder, identified above, also the manufacturer of the water meters proposed: YES NO

3. If the above Bidder is not the manufacturer, could you please state the manufacturers information as noted below:

   (a). Name of Manufacturer: _____

   (b). Permanent Office Address: _____

   _____

   (c). Direct Contact: _____ Phone: ( ) _____

4. How long has the bidder been in business? _____

5. If a corporation, where was it incorporated? _____

6. Please provide a list of communities in Massachusetts in which the proposed water meters have been installed.

Community	Contact Name	Phone #	Fax #	Est. Qty.

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

7a. Please list all RF-AMR products with which the proposed water meters are compatible.

_____

_____

_____

_____

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

7b. Please provide a list of communities in which the proposed water meters have been installed in combination with the Hexagram STAR AMR devices.

Community	Contact Name	Phone #	Fax #	Est. Qty.

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

8a. Are the proposed water meter registers submersible? YES NO

8b. If yes, to the question above, how is the waterproofing accomplished?

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

9. Does the proposed water meter product have a mechanical encoder or electronic (digital) encoder and can you describe the process for reading the index wheels?

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

10. Does the register(s) on the proposed water meter have any self-contained power or does it require power from an external source to provide / maintain a meter reading?

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

11. What is the warranty for the proposed register?

12. The City of Cambridge uses cubic feet units for meters. What is the best (lowest volume) electronic resolution for the meter registers proposed, can this be read by most AMR products, and does this vary with size or style meter?

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

13. Does the proposed water meter product have tamper proof features and how do those features benefit the utility?

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

14. Do the 1 ½ " or 2" meters proposed require removal or special installation plumbing to allow an in-line meter test?

_____

_____

15. Is the manufacturer currently involved in any litigation over the delivery, installation or performance of the meters proposed? If so, please summarize.

_____

_____

_____

_____

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

16. What is the lead content, in percent by weight, of the meter in contact with drinking water? How is this lead content certified?

_____

_____

_____

_____

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

17. CWD is requiring that encoder-type registers have a maximum misread rate of no more than one (1) errant read per every two thousand (2,000) reads as reported through the STAR Hexagram AMR system. Therefore, what kind of manufacturer's assurance can you provide to the CWD that your encoder-type register can perform to this specification? ***(Please provide written documentation pertaining to this performance parameter as an attachment with you water meter bid submission.)***

_____

_____

_____

_____

PRICE PROPOSAL

All prices must remain firm during the entire contract period. The quantities of products listed on the price proposal are for the purpose of comparing bids on a uniform basis. The City expressly reserves the right to increase or decrease quantities or to eliminate form purchase any of the items listed, as deemed necessary. The successful Bidder(s) shall not make a claim for loss of profit solely because of a difference between quantities of product actually delivered and the bid quantities listed on the bid pages.

ALL METERS AND PARTS FOR THEIR INSTALLATION ARE TO BE DELIVERED F.B.O. **CAMBRIDGE WATER DEPARTMENT, 250 FRESH POND PARKWAY, CAMBRIDGE, MA 02138.** ALL METERS AND THEIR ASSEMBLY PARTS MUST BE SHIPPED COMPLETE AND READY FOR INSTALLATION.

ALL GASKETS, NUTS, BOLTS, WASHERS, ETC MUST BE PROVIDED TO PERMIT STANDARD INSTALLATION OF EVERY WATER METER DELIVERED TO THE CAMBRIDGE WATER DEPT.

METERS WILL BE INSPECTED FOR DAMAGE OR PROBLEMS PRIOR TO INSTALLATION. LARGER METERS WILL BE SITE TESTED UPON INSTALLATION. ANY METERS FAILING THE INSPECTION OR TESTING WILL BE SENT BACK TO THE METER VENDOR AT THE VENDOR'S EXPENSE.

FAILURE TO DELIVER METERS OR METER ASSEMBLIES WITHIN THE NOTED THIRTY (30) DAY REQUIREMENT WILL PERMIT THE CITY TO ACQUIRE METERS OR METER ASSEMBLIES FROM ALTERNATE SOURCES. UNDER THESE CONDITIONS, THE CITY WILL NOT BE OBLIGATED TO ACCEPT ANY ORDERS FOR METERS OR METER ASSEMBLIES THAT WERE NOT YET SHIPPED OR WERE DELAYED IN TRANSIT.

Section 1 ***Positive Displacement (Pd) Type Cold Water Meters***

Item	Qty	Description	Proposed Mfg & Model	Unit Price	Total Price
1-1	20	5/8" x ½" PD Meter		$	$
1-2	200	5/8" x ¾" PD Meter		$	$
1-3	200	¾" PD Meter (9")		$	$
1-4	100	1" PD Meter		$	$
1-5	25	1 – ½" PD Meter		$	$
1-6	25	2" PD Meter		$	$

The City will make an award on a line by line basis on Section 1. The contract will be awarded to the responsive and responsible bidder offering the lowest price per item. Bidders may bid on one or more items.

Total price of item 1-1 in words: _____

Total price of item 1-2 in words: _____

Total price of item 1-3 in words: _____

Total price of item 1-4 in words: _____

Total price of item 1-5 in words: _____

Total price of item 1-6 in words: _____

Bidders Signature: _____

NAME OF BIDDER: _____

Section 2 Turbine Type Cold Water Meters

A contract will be awarded to the responsible and responsive bidder offering the lowest total price per section. Please submit a unit price and total price for each item listed.

Item	Qty	Description	Proposed Mfg & Model	Unit Price	Total Price
2-1	5	3" Turbine Meter Assembly		$	$
2-2	5	4" Turbine Meter Assembly		$	$
2-3	5	6" Turbine Meter Assembly		$	$

$_____

Grand Total Section 2

Grand Total Section 2 in words: _____

Bidders Signature: _____

Section 3 Compound Type Cold Water Meters

A contract will be awarded to the responsible and responsive bidder offering the lowest total price per section. Please submit a unit price and total price for each item listed.

Item	Qty	Description	Proposed Mfg & Model	Unit Price	Total Price
3-1	5	3" Compound Meter Assembly		$	$
3-2	5	4" Compound Meter Assembly		$	$
3-3	5	6" Compound Meter Assembly		$	$

$_____

Grand Total Section 3

Grand Total Section 3 in words: _____

Bidders Signature: _____

NAME OF BIDDER: _____

Section 4 ***Electronic (Magnetic Flow) Type Cold Water Meters***

A contract will be awarded to the responsible and responsive bidder offering the lowest total price per section. Please submit a unit price and total price for each item listed.

Item	Qty	Description	Proposed Mfg & Model	Unit Price	Total Price
4-1	5	3" Electronic (Mag) Meter		$	$
4-2	5	4" Electronic (Mag) Meter		$	$
4-3	5	6" Electronic (Mag) Meter		$	$
4-4	00	Add-on for Remote Meter Totalizer, Min 30'		$	$
4-5	00	Add-on for Totalizer Cable Beyond 30'		$	$

$_____
Grand Total Section 4

Grand Total Section 4 in words: _____

Bidders Signature: _____

Section 5 ***Single Jet Cold Water Meters***

A contract will be awarded to the responsible and responsive bidder offering the lowest total price per section. Please submit a unit price and total price for each item listed.

Item	Qty	Description	Proposed Mfg & Model	Unit Price	Total Price
5-1	10	2" Single-Jet Water Meter		$	$
5-2	5	3" Single-Jet Water Meter		$	$
5-3	5	4" Single-Jet Water Meter		$	$
5-4	5	6" Single-Jet Water Meter		$	$

$_____
Grand Total Section 5

Grand Total Section 5 in words: _____

Bidders Signature: _____

NAME OF BIDDER: _____

Americans with Disabilities Act (42 U.S.C. 12131)
Section 504 of the Rehabilitation Act of 1973
Tax Compliance/Anti-Collusion Statement

The Americans with Disabilities Act (the "Act") applies to all employers of fifteen or more employees. All vendors that are subject to the Act must comply with its provisions. In further compliance with the Act, all Contractors who enter into contracts with the City are prohibited from discrimination against the City's employees, regardless of the size of the Contractor.

The Act protects against discrimination on the basis of "disability", which is defined as a physical or mental impairment that substantially limits at least one "major life activity"; discrimination against a person having a history or record of such impairment; and discrimination against an individual regarded - even if inaccurately - as having such an impairment. The Act also expressly prohibits discrimination that is based on an individual's relationship or association with a disabled person.

The bidder shall not discriminate against any qualified employee or job applicant with a disability and will make the activities, programs and services covered by any contract awarded through this procurement readily accessible to and usable by individuals with disabilities. To be qualified for a job, or to avail oneself of the bidder's services, the individual with the disability must meet the essential eligibility requirements for receipt of the bidder's services or participation in the bidder's programs or activities with or without: 1)reasonable modifications to the bidder's rules, policies and practices; 2) removal of architectural, communication, or transportation barriers; or, 3) provisions of auxiliary aids and services.

By submitting its bid, the bidder certifies to the City of Cambridge that it understands and will comply with all applicable provisions of the Act, including compliance with applicable provisions of Section 504 of the Rehabilitation Act of 1973, if the bidder is receiving federal funds.

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 "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals

As required by M.G.L. c. 62C, §49A, the undersigned certifies under the penalties of perjury that the bidder has complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

Date:_____

_____
(Print Name of person signing bid)

_____
(Signature & Title)

_____
Name of Company

_____
Address

_____
City Zip Code

NAME OF BIDDER: _____

CORI COMPLIANCE FORM

Persons and businesses supplying goods and/or services to the City of Cambridge ("Vendors"), who are required by law to perform CORI checks, are further required by Section 2.112.060 of the Cambridge Municipal Code to employ fair policies, practices and standards relating to the screening and identification of persons with criminal backgrounds through the CORI system. Such Vendors, when entering into contracts with the City of Cambridge, must affirm that their policies, practices and standards regarding CORI information are consistent with the policies, practices and standards employed by the City of Cambridge as set forth in the City of Cambridge CORI Policy ("CORI Policy") attached hereto.

CERTIFICATION

The undersigned certifies under penalties of perjury that the Vendor employs CORI related policies, practices and standards that are consistent with the provisions of the attached CORI Policy. **All Vendors must check one of the three lines below**.

1. _____ CORI checks are not performed on any Applicants.

2. _____ CORI checks are performed on some or all Applicants. The Vendor, by affixing a signature below, affirms under penalties of perjury that its CORI policies, practices and standards are consistent with the policies, practices and standards set forth in the attached CORI Policy.

3. _____ CORI checks are performed on some or all Applicants. The Vendor's CORI policies, practices and standards are not consistent with the attached CORI Policy. Please explain on a separate sheet of paper.

_____ _____

(Typed or printed name of person signing quotation, bid or Proposal)

Signature

_____

(Name of Business)

NOTE:
The City Manager, in his sole discretion may grant a waiver to any Vendor on a contract by contract basis.

Instructions for Completing CORI Compliance Form:
A Vendor should not check Line 1 unless it performs NO CORI checks on ANY applicant. A Vendor who checks Line 2 certifies that the Vendor's CORI policy conforms to the policies, practices and standards set forth in the City's CORI Policy. A Vendor with a CORI policy that does NOT conform to the City's CORI Policy must check Line 3 and explain the reasons for its nonconformance in writing. Vendors, who check Line 3, will not be permitted to enter into contracts with the City, absent a waiver by the City Manager.

This form must be submitted with your bid

ORDINANCE NUMBER 1312

Final Publication Number 3155. First Publication in the Chronicle on December 13, 2007.

City of Cambridge

In the Year Two Thousand and Eight

AN ORDINANCE

In amendment to the Ordinance entitled "Municipal Code of the City of Cambridge"

Be it ordained that Cambridge Municipal Code Chapter 2.112 is hereby amended by adding a new Section 2.112.060 entitled "CORI Screening by Vendors of the City of Cambridge" as follows:

Adding after Section 2.112.050 the following new sections:

SECTION 2.112.060

CORI SCREENING BY VENDORS OF THE CITY OF CAMBRIDGE

Sections:

2.112.061 Purpose
2.112.062 Definitions
2.112.063 CORI-Related Standards of the City of Cambridge
2.112.064 Waiver
2.112.065 Applicability

2.112.061 Purpose

These sections are intended to ensure that the persons and businesses supplying goods and/or services to the City of Cambridge deploy fair policies relating to the screening and identification of persons with criminal backgrounds through the CORI system.

2.112.062 Definitions

Unless specifically indicated otherwise, these definitions shall apply and control.

Awarding Authority means the City of Cambridge Purchasing Agent or designee.

Vendor means any vendor, contractor, or supplier of goods and/or services to the City of Cambridge.

2.112.063 CORI-Related Standards of the City of Cambridge

The City of Cambridge employs CORI-related policies, practices and standards that are fair to all persons involved and seeks to do business with vendors that have substantially similar policies, practices and standards. The City of Cambridge will do business only with vendors who, when required by law to perform CORI checks, employ CORI-related policies, practices, and standards that are consistent with policies, practices and standards employed by the City of Cambridge. The awarding authority shall consider any vendor's deviation from policies, practices and standards employed by the City of Cambridge as grounds for rejection, rescission, revocation, or any other termination of the contract.

2.112.064 Waiver

The City Manager may grant a waiver to anyone who or which has submitted a request for waiver if it is objectively reasonable; and the City Manager, or a delegate, shall report promptly in writing to the City Council all action taken with respect to every request for a waiver and the reasons for the decision.

2.112.065 Applicability

If any provision of these sections imposes greater restrictions or obligations than those imposed by any other general law, special law, regulation, rule, ordinance, order, or policy then the provisions of these sections shall control.

In City Council January 28, 2008.
Passed to be ordained by a yea and nay vote:-
Yeas 9; Nays 0; Absent 0.
Attest:- D. Margaret Drury, City Clerk.

A true copy;

ATTEST:-

D. Margaret Drury
City Clerk

City of Cambridge CORI Policy

1. Where Criminal Offender Record Information (CORI) checks are part of a general background check for employment or volunteer work, the following practices and procedures will generally be followed.

2. CORI checks will only be conducted as authorized by Criminal History Systems Board (CHSB). All applicants will be notified that a CORI check will be conducted. If requested, the applicant will be provided with a copy of the CORI policy.

3. An informed review of a criminal record requires adequate training. Accordingly, all personnel authorized to review CORI in the decision-making process will be thoroughly familiar with the educational materials made available by the CHSB.

4. Prior to initiating a CORI check, the City will review the qualifications of the applicant to determine if the applicant is otherwise qualified for the relevant position. The City will not conduct a CORI check on an applicant that is not otherwise qualified for the relevant position.

5. Unless otherwise provided by law, a criminal record will not automatically disqualify an applicant. Rather, determination of suitability based on CORI checks will be made consistent with this policy and any applicable law or regulations.

6. If a criminal record is received from CHSB, the authorized individual will closely compare the record provided by CHSB with the information on the CORI request form and any other identifying information provided by the applicant, to ensure the record relates to the applicant.

7. If, in receiving a CORI report, the City receives information it is not authorized to receive (e.g. cases with dispositions such as not guilty or dismissal, in circumstances where the City is only authorized to receive convictions or case-pending information), the City will inform the applicant and provide the applicant with a copy of the report and a copy of CHSB's *Information Concerning the Process in Correcting a Criminal Record* so that the applicant may pursue correction with the CHSB.

8. If the City of Cambridge is planning to make an adverse decision based on the results of the CORI check, the applicant will be notified immediately. The applicant shall be provided with a copy of the criminal record and the City's CORI policy, advised of the part(s) of the record that make the individual unsuitable for the position and given an opportunity to dispute the accuracy and relevance of the CORI record.

9. Applicants challenging the accuracy of the criminal record shall be provided a copy of CHSB's *Information Concerning the Process in Correcting a Criminal Record.* If the CORI record provided does not exactly match the identification information provided by the applicant, the City of Cambridge will make a determination based on a comparison of the CORI record and documents provided by the applicant. The City of Cambridge may contact CHSB and request a detailed search consistent with CHSB policy.

10. If the City of Cambridge reasonably believes the record belongs to the applicant and is accurate, then the determination of suitability for the position will be made. Unless otherwise provided by law, factors considered in determining suitability may include, but not be limited to the following:

    (a) Relevance of the crime to the position sought;
    (b) The nature of the work to be performed;
    (c) Time since the conviction;
    (d) Age of the candidate at the time of offense;
    (e) Seriousness and specific circumstances of the offense;
    (f) The number of offenses;
    (g) Whether the applicant has pending charges;
    (h) Any relevant evidence of rehabilitation or lack thereof;
    (i) Any other relevant information, including information submitted by the candidate or requested by the City.

11. The Personnel Department will assist affected departments, in assessing the suitability of candidates in accordance with paragraph 10 a through i above, to ensure consistency, fairness, and protection of employment opportunities and

the public interest.

12. The City of Cambridge will notify the applicant of the decision and the basis of the decision in a timely manner.

13. CORI information shall not be disseminated or shared with any unauthorized employees or other, but shall be maintained in confidence consistent with the obligations of law.

Revised May 5, 2007

City Of Cambridge
Articles Of Agreement

Commodity:

File Number:

This agreement is made and entered into this _____, by and between the **City Of Cambridge** ("the CITY") a municipal corporation organized and existing under the laws of the Commonwealth of Massachusetts, and _____ existing under the laws of the State of _____ ("the Contractor").
Address:
Telephone, Fax, E-mail:

Article I. Definition. "This Contract" as used herein shall mean these Articles of Agreement and "the bid documents," which include, but are not limited to, the instructions to bidders, the Contractor's bid or proposal, the specifications, the general conditions, the requirements, the applicable addenda, and all documents and forms submitted with the Contractor's bid or proposal that were accepted by the City.

Article II. Duration. The Contractor shall commence the performance of this contract for the period beginning on _____ and ending on _____.

Article III. Terms. The Contractor agrees to provide the services all in accordance with the bid documents of (bid opening date) or (proposal if appropriate).

Contract Value:

Article IV. Payment. The City agrees to pay to Contractor the sum set forth in the Contractor's bid or proposal. **Contractor shall invoice department to which it provided the service, not the Purchasing Department.**

Article V. Termination. The following shall constitute events of default under this Contract requiring immediate termination: a) any material misrepresentation made by the Contractor, b) any failure by the Contractor to perform any of its obligations under this Contract including, but not limited to, the following: (i) failure to commence performance of this Contract at the time specified in this Contract due to a reason or circumstance within the Contractor's reasonable control, (ii) failure to perform this Contract with sufficient personnel and equipment or with sufficient material to ensure the completion of this Contract within the specified time due to a reason or circumstance within the Contractor's reasonable control, (iii) failure to perform this Contract in a manner reasonably satisfactory to the City, (iv) failure to promptly re-perform within reasonable time the services that were rejected by the City as erroneous or unsatisfactory, (v) discontinuance of the services for reasons not beyond the Contractor's reasonable control, (vi) failure to comply with a material term of this Contract, including, but not limited to, the provision of insurance and nondiscrimination, and (vii) any other acts specifically and expressly stated in this Contract as constituting a basis for termination of this Contract.

Except as otherwise provided in the Articles of Agreement, the City may terminate the contract upon seven days notice.

Article VI. Damages. From any sums due to the Contractor for services, the City may keep for its own the whole or any part of the amount for expenses, losses and damages as directed by the Purchasing Agent, incurred by the City as a consequence of procuring services as a result of any failure, omission or mistake of the Contractor in providing services as provided in this Contract.

Article VII. Conflict. In the event there is a conflict between these Articles and the bid documents, the bid documents shall supersede these articles.

Article VIII. Governing laws and ordinances. This Contract is made subject to all the laws of the Commonwealth and the Ordinances of the City and if any such clause thereof does not conform to such laws or ordinances, such clause shall be void (the remainder of the Contract shall not be affected) and the laws or ordinances shall be operative in lieu thereof.

Article IX. Performance Security. Upon execution of this Contract by the Contractor, the Contractor shall furnish to the City security for the faithful performance of this Contract in the amount of **0%** of the value of the bid in the form of a performance bond issued by a surety satisfactory to the city or in the form of a certified check.

Article X. Equal Opportunity. the Contractor in the performance of all work under this contract will not discriminate on the grounds of race, color, sex, age, religious creed, disability, national origin or ancestry, sexual orientation, marital status, family status, military status, or source of income in the employment practices or in the selection or retention of subcontractors, and in the procurement of materials and rental of equipment. The city may cancel, terminate or suspend the contract in whole or in part for any violation of this article.

Article XI. Assignability. the Contractor shall not assign, sell, subcontract or transfer any interest in this contract without prior written consent of the city.

In witness whereof the parties have hereto and to three other identical instruments set their hands the day and year first above written.

Approved as to Form:

Donald A Drisdell
City Solicitor

Robert W. Healy
City Manager

The Contractor:

Signature And Title

Cynthia H. Griffin
Purchasing Agent