

WESTFORD WATER DEPARTMENT  
FISCAL YEAR 2016  
WATER DISTRIBUTION SUPPLIES AND MATERIALS

**TOWN OF WESTFORD, MASSACHUSETTS**

SPECIFICATIONS  
FOR  
WATER DISTRIBUTION SUPPLIES AND MATERIALS

June 2, 2015

Town of Westford  
Westford Water Department  
60 Forge Village Road  
Westford, MA 01886

WESTFORD WATER DEPARTMENT  
FISCAL YEAR 2016  
WATER DISTRIBUTION SUPPLIES AND MATERIALS

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## SECTION 00020

### INVITATION TO BID

The Westford Water Department is accepting sealed bids from responsible and responsive parties for water distribution materials and supplies, for the 2016 Fiscal Year (July 1, 2015 to June 30, 2016).

Specifications and bid forms may be obtained at the Westford Water Department, 60 Forge Village Road, Westford, MA 01886 on or after 8:00 a.m. on Tuesday, June 2, 2015. Office hours are Monday through Friday between 8:00 AM and 4:00 PM, excluding legal holidays.

Sealed bids shall be addressed to the Westford Water Department, 60 Forge Village Road, Westford, MA 01886 and marked "**Bid for Water Distribution Supplies and Materials**". Bids will be accepted at the Westford Water Department until 10:00 a.m. on Friday, June 26, 2015 at which time they will be opened and read aloud. Late bids will not be accepted. Emailed or faxed bids will not be accepted.

All Bids shall be accompanied by a completed Certificate of Non-Collusion, Tax Compliance Certificate and a Bidder's Qualification Form.

The bidder agrees that its bid shall be good and may not be withdrawn for a period of 30 days, Saturdays, Sundays and legal holidays excluded, after the opening of the bids.

The Westford Water Department reserves the right to waive any informalities, to accept or reject, in whole or in part any or all bids, or take whatever other action may be deemed to be in the best interest of the Town.

## SECTION 00100

### INSTRUCTIONS TO BIDDERS

#### 1. Receipt and Opening of Bids

The Westford Water Department is accepting sealed bids from responsible and responsive parties for water distribution materials and supplies, for the 2016 Fiscal Year (July 1, 2015 to June 30, 2016).

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Sealed bids shall be addressed to the Westford Water Department, 60 Forge Village Road, Westford, MA 01886 and marked "**Bid for Water Distribution Supplies and Materials**". Bids will be accepted at the Westford Water Department until 10:00 a.m. on Friday, June 26, 2015 at which time they will be opened and read aloud. Late bids will not be accepted. Emailed or faxed bids will not be accepted.

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The Westford Water Department reserves the right to waive any informalities, to accept or reject, in whole or in part any or all bids, or take whatever other action may be deemed to be in the best interest of the Town.

#### 2. Preparation of Bid

Each bid must be submitted on the prescribed forms. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and endorsed with the name of the project as specified in Receipt and Opening of Bids, above. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in Receipt and Opening of Bids, above.

A bidder may elect to submit prices for any single item or a group of items specified on the Schedule of Prices. A bidder need not offer prices for all the items requested. Items not being offered for purchase from the bidder may be indicated by "no bid" or "N/A" or similar notation in the unit price column of the Schedule of Prices. Blanks as appearing for any item in the Schedule of Prices shall be interpreted as a "no bid" response from any bidder.

3. Bid Opening Procedure

The following list of requirements shall apply to each filed bid. Bids not meeting all the requirements for timeliness and security will be rejected; bids not meeting signature and addenda requirements will be rejected prior to checking of bid amounts.

Bids shall be filed at the place and before the time specified in Receipt and Opening of Bids, above.

Bid signatures will be checked.

All addenda will be sent certified mail, with return receipt requested, and/or facsimile or e-mail to all prospective bidders. All bidders shall include with their bids the written acknowledgment form provided in Section 00300, FORM OF GENERAL BID.

4. Modification

Any bidder may modify his bid by written communication at any time prior to the scheduled closing time for receipt of bids. Any written communication must be received by the Owner prior to the closing time, and, provided further, the Owner must be satisfied that a written confirmation of the modification over the signature of the bidder was mailed prior to the closing time. If written confirmation is not received within two days from the closing time, no consideration will be given to a written modification.

The communication shall not reveal the bid price but shall provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened.

5. Ability and Experience of Bidder

No award will be made to any bidder who does not have at least two (2) years' experience in the supply and delivery of water distribution supplies and materials. The Owner's decision or judgment on these matters will be final, conclusive, and binding.

The Owner may make such investigations as it deems necessary, and the bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

6. Conditions of Work

Each bidder must familiarize himself fully with the specifications relating to providing materials. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract.

7. Addenda and Interpretations

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. All information given to bidders other than by means

of the plans, specifications, or by addenda, as described below, is given informally and shall not be used as the basis of a claim against the Owner.

Every request for such interpretation should be in writing addressed to Westford Water Department, 60 Forge Village Road, Westford, MA 01886, and to be given consideration must be received at least seven (7) calendar days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, when issued, will be mailed by certified mail with return receipt requested to all prospective bidders (at the respective address furnished by them for such purposes), or sent via facsimile or email if time requires. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

8. Laws and Regulations

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances or bylaws, and the rules and regulations of all authorities having jurisdiction shall apply to the contract throughout, and they will be deemed to be included in the Contract the same as though written out in full.

9. Obligation of Bidder

At the time of the opening of bids, each bidder will be presumed to have read and to be thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect of his bid.

10. Right to Reject Bid

The Owner reserves the right to waive any informalities in bids and to reject any and all bids, should the Owner deem it to be in the public interest to do so.

The Owner may also reject bids which in its sole judgment are incomplete, conditional, obscure or not responsive or which contain additions not called for, erasures not properly initialed, alterations, or similar irregularities.

11. Time for Completion

The successful general bidder must agree to supply materials between July 1, 2015 and June 30, 2016 (Fiscal Year 2016) to fully complete the project.

12. Comparison of Bids

Bids will be compared on the basis of prices set forth in the bid forms. Bidders shall quote unit prices for each item on the bid form, including delivery.

In the event that there is a discrepancy between the lump sum or unit prices written in words and figures, the prices written in words will govern.

The price shall include any and all fees and surcharges and shall be firm for the contract period.

13. Award of Contract

The Board of Selectmen are the awarding authority for this contract. Multiple contracts will be awarded to "the lowest responsible and eligible bidders" who offers the **lowest total price**, delivered, for each **item** on the Schedule of Prices pursuant to General Laws Chapter 30B, Section 5(g), as amended. Such a bidder shall possess the skill, ability and integrity necessary for the faithful performance of the work and shall otherwise comply with all applicable provisions of law. Contracts awarded shall be subject to availability of an appropriation for funding.

14. Statutes Regulating Competitive Bidding

Any bid which does not comply with the provisions of Massachusetts General Laws Chapter 30B, Sections 5(a) through 5(g), as amended, need not be accepted and the Owner may reject every such bid.

15. Contractor Records

The Contractor shall comply with the provisions of Massachusetts General Laws, Chapter 30, Section 39R concerning Contractor records.

**SECTION 00300**

**FORM OF GENERAL BID**

Bid of \_\_\_\_\_ (hereinafter called "Bidder")<sup>1</sup>

(\_\_\_\_) a corporation, organized and existing under the laws of the State of \_\_\_\_\_

(\_\_\_\_) a partnership

(\_\_\_\_) a joint venture

(\_\_\_\_) an individual

doing business as \_\_\_\_\_

To the **Westford Water Department, Town of Westford, Massachusetts** (hereinafter called "Owner").

Gentlemen:

A) The undersigned Bidder, in compliance with your invitation for bids for the project known as **Water Distribution Supplies and Materials**, having examined specifications and related documents, and being familiar with all of the conditions surrounding the supply and availability of materials, hereby proposes to furnish each item for which a unit price and total price is given in the bid form in accordance with the contract documents and the specifications within the time set forth below, and at the prices stated in the bid form. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this bid is a part.

The Bidder hereby agrees to provide materials between the dates of July 1, 2015 through June 30, 2016 (Fiscal Year 2016). All bid prices must remain firm throughout the contract term.

B) Bidder acknowledges receipt of and this bid includes the following addenda:

No. \_\_\_\_\_ Dated: \_\_\_\_\_ No. \_\_\_\_\_ Dated: \_\_\_\_\_

No. \_\_\_\_\_ Dated: \_\_\_\_\_ No. \_\_\_\_\_ Dated: \_\_\_\_\_

No. \_\_\_\_\_ Dated: \_\_\_\_\_ No. \_\_\_\_\_ Dated: \_\_\_\_\_

C) The Bidder agrees to supply materials described in the specifications for the following contract prices. Bidder shall fill out schedule of prices pages 00300-2 thru 00300-20. Bidder shall fill in the table on pages 00300-21 and 00300-22, placing the total price (from pages 00300-2 thru 00300-20) for the grouping of products for each item in both words and figures. All bid prices must remain firm throughout the contract term.

<sup>1</sup> Specify Corporation, Partnership or Individual as applicable.

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 1 - DUCTILE IRON PIPE</b>						
16" DUCTILE IRON PIPE	20	LF				
12" DUCTILE IRON PIPE	20	LF				
10" DUCTILE IRON PIPE	20	LF				
8" DUCTILE IRON PIPE	20	LF				
6" DUCTILE IRON PIPE	200	LF				
4" DUCTILE IRON PIPE	60	LF				
<b>Total Item 1 - DUCTILE IRON PIPE</b>						
<b>ITEM 2 - PVC PIPE</b>						
12" C-900- DR-18 PVC Pipe (Blue Brute)	40	LF				
10" C-900- DR-18 PVC Pipe (Blue Brute)	40	LF				
8" C-900- DR-18 PVC Pipe (Blue Brute)	100	LF				
6" C-900- DR-18 PVC Pipe (Blue Brute)	200	LF				
4" C-900- DR-18 PVC Pipe (Blue Brute)	60	LF				
<b>Total Item 2 - PVC PIPE</b>						
<b>ITEM 3 - PE TUBING</b>						
2" CTS POLYETHYLENE TUBING, 200PSI	200	LF				
1 1/2" CTS POLYETHYLENE TUBING, 200PSI	100	LF				
1 1/4" CTS POLYETHYLENE TUBING, 200PSI	60	LF				
1" CTS POLYETHYLENE TUBING, 200PSI	1000	LF				
3/4" CTS POLYETHYLENE TUBING, 200PSI	300	LF				
SERVICE LINE SLEEVE, 4" ID HDPE ASTM F810	2000	LF				
<b>Total Item 3 - PE TUBING</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 4 - MJ VALVES</b>						
16" BUTTERFLY VALVE	1	EA				
12" MJ GATE VALVE	1	EA				
10" MJ GATE VALVE	1	EA				
8" GATE VALVE	1	EA				
6" MJ GATE VALVE	8	EA				
4" MJ GATE VALVE	1	EA				
<b>Total Item 4 - MJ VALVES</b>						

**ITEM 5 - MJ FITTINGS (BENDS,SOLID SLEEVES, ETC)**

**Solid Sleeves**

16" MJ SOLID SLEEVE	2	EA				
12" MJ SOLID SLEEVE	2	EA				
10" MJ SOLID SLEEVE	2	EA				
8" MJ SOLID SLEEVE	2	EA				
6" MJ SOLID SLEEVE	2	EA				
4" MJ SOLID SLEEVE	2	EA				
<b>Subtotal Item 5 - MJ Fittings Solid Sleeves</b>						

**Bends**

16" MJ BEND, 90 DEG.	2	EA				
12" MJ BEND, 90 DEG.	2	EA				
10" MJ BEND, 90 DEG.	2	EA				
8" MJ BEND, 90 DEG.	2	EA				
6" MJ BEND, 90 DEG.	2	EA				
4" MJ BEND, 90 DEG.	2	EA				
16" MJ BEND, 45 DEG.	2	EA				
12" MJ BEND, 45 DEG.	2	EA				
10" MJ BEND, 45 DEG.	2	EA				

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 5 - MJ FITTINGS (BENDS,SOLID SLEEVES, ETC) CONTINUED</b>						
<b>Bends</b>						
8" MJ BEND, 45 DEG.	2	EA				
6" MJ BEND, 45 DEG.	2	EA				
4" MJ BEND, 45 DEG.	2	EA				
16" MJ BEND, 22 1/2 DEG.	2	EA				
12" MJ BEND, 22 1/2 DEG.	2	EA				
10" MJ BEND, 22 1/2 DEG.	2	EA				
8" MJ BEND, 22 1/2 DEG.	2	EA				
6" MJ BEND, 22 1/2 DEG.	2	EA				
4" MJ BEND, 22 1/2 DEG.	2	EA				
16" MJ BEND, 11 1/4 DEG.	2	EA				
12" MJ BEND, 11 1/4 DEG.	2	EA				
8" MJ BEND, 11 1/4 DEG.	2	EA				
6" MJ BEND, 11 1/4 DEG.	2	EA				
4" MJ BEND, 11 1/4 DEG.	2	EA				
<b>Subtotal Item 5 - MJ Fittings Bends</b>						
<b>Reducers</b>						
16" x 12" MJ REDUCER	2	EA				
12" X 8" MJ REDUCER	2	EA				
12" X 6" MJ REDUCER	2	EA				
12" X 4" MJ REDUCER	2	EA				
8" X 6" MJ REDUCER	2	EA				
8" X 4" MJ REDUCER	2	EA				
6" X 4" MJ REDUCER	2	EA				
<b>Subtotal Item 5 - MJ Fittings Reducers</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 5 - MJ FITTINGS (BENDS,SOLID SLEEVES, ETC) CONTINUED</b>						
<b>Tees</b>						
12" X 12" X 12" MJ TEE	1	EA				
12" X 12" X 10" MJ TEE	1	EA				
12" X 12" X 8" MJ TEE	1	EA				
12" X 12" X 6" MJ TEE	1	EA				
12" X 12" X 6" MJ SWIVEL TEE	1	EA				
10" X 10" X 6" MJ HYDRANT TEE	1	EA				
8" X 8" X 8" MJ TEE	1	EA				
8" X 8" X 6" MJ TEE	1	EA				
8" X 8" X 4" MJ TEE	1	EA				
8" X 6" SWIVEL TEE	4	EA				
6" X 6" X 6" MJ TEE	1	EA				
6" X 6" X 4" MJ TEE	1	EA				
6" X 6" MJ SWIVEL TEE	3	EA				
4" MJ TEE	1	EA				
<b>Subtotal Item 5 - MJ Fittings Tees</b>						
<b>Plugs</b>						
16" MJ PLUG	1	EA				
12" MJ PLUG	1	EA				
8" MJ PLUG	1	EA				
6" MJ PLUG	1	EA				
4" MJ PLUG	1	EA				
<b>Subtotal Item 5 - MJ Fittings Reducers</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
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**ITEM 5 - MJ FITTINGS (BENDS,SOLID SLEEVES, ETC) CONTINUED**

**Caps**

16" MJ CAP	1	EA				
12" MJ CAP	1	EA				
8" MJ CAP	1	EA				
6" MJ CAP	1	EA				
4" MJ CAP	1	EA				

**Subtotal Item 5 - MJ Fittings Reducers**

**Total Item 5 - MJ FITTINGS**

**ITEM 6 - RETAINER GLANDS**

16" MEGA-LUG MJ WITH/ACCESORY PACK CI/DI	4	EA				
12" MEGA-LUG MJ WITH/ACCESORY PACK CI/DI	4	EA				
10" MEGA-LUG MJ WITH/ACCESORY PACK CI/DI	4	EA				
8" MEGA-LUG MJ WITH/ACCESORY PACK CI/DI	6	EA				
6" MEGA-LUG MJ WITH/ACCESORY PACK CI/DI	8	EA				
4" MEGA-LUG MJ WITH/ACCESORY PACK CI/DI	4	EA				
12" GRIP RING MJ WITH ACCESSORY PACK C-900 PVC	4	EA				
10" GRIP RING MJ WITH ACCESSORY PACK C-900 PVC	4	EA				
8" GRIP RING MJ WITH ACCESSORY PACK C-900 PVC	6	EA				
6" GRIP RING MJ WITH ACCESSORY PACK C-900 PVC	8	EA				
4" GRIP RING MJ WITH ACCESSORY PACK C-900 PVC	4	EA				

**Total Item 6 - RETAINER GLANDS**

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 7 - GATE BOXES AND RISERS</b>						
GATE BOX COVER	60	EA				
LOCKING GATE BOX COVER	10	EA				
GATE BOX COMPLETE, 48" BOTTOM, 26" TOP W/COVER	25	EA				
GATE BOX TOP, 26" W/ COVER	20	EA				
GATE BOX BOTTOM, 48"	20	EA				
GATE BOX RISER, 1"	60	EA				
GATE BOX RISER, 1 1/2"	60	EA				
GATE BOX RISER, 2"	30	EA				
GATE BOX RISER, 4"	10	EA				
GATE BOX RISER, 12" ADJUSTABLE (Rise Rite style)	6	EA				
GATE BOX RISER, 18" ADJUSTABLE (Rise Rite style)	6	EA				
<b>Total Item 7 - GATE BOXES AND RISERS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 8 - SERVICE SADDLES</b>						
16"X 2" CC SERVICE SADDLE -STAINLESS STEEL BANDS	1	EA				
16" X 1.5" CC SERVICE SADDLE -STAINLESS STEEL BANDS	1	EA				
16" X 1" CC SERVICE SADDLE -STAINLESS STEEL BANDS	1	EA				
16" X 3/4" CC SERVICE SADDLE -STAINLESS STEEL BANDS	1	EA				
12" X 2" CC SERVICE SADDLE -STAINLESS STEEL BANDS	1	EA				
12" X 1.5" CC SERVICE SADDLE -STAINLESS STEEL BANDS	1	EA				
12"X 1" CC SERVICE SADDLE -STAINLESS STEEL BANDS	2	EA				
12"X 3/4" CC SERVICE SADDLE -STAINLESS STEEL BANDS	1	EA				
10" X 2" CC SERVICE SADDLE-STAINLESS STEEL BANDS	1	EA				
10" X 1.5" CC SERVICE SADDLE-STAINLESS STEEL BANDS	1	EA				
10" x 1" CC SERVICE SADDLE - STAINLESS STEEL BANDS	1	EA				
10" x 3/4" CC SERVICE SADDLE - STAINLESS STEEL BANDS	1	EA				
8" X 2" CC SERVICE SADDLE - STAINLESS STEEL BANDS	1	EA				
8" X 1.5" CC SERVICE SADDLE - STAINLESS STEEL BANDS	1	EA				
8" X 1" CC SERVICE SADDLE - STAINLESS STEEL BANDS	6	EA				
8" X 3/4" CC SERVICE SADDLE - STAINLESS STEEL BANDS	2	EA				
6" X 2" CC SERVICE SADDLE - STAINLESS STEEL BANDS	1	EA				
6" X 1 1/2" CC SERVICE SADDLE - STAINLESS STEEL BANDS	1	EA				
6" X 1" CC SERVICE SADDLE - STAINLESS STEEL BANDS	10	EA				
6" X 3/4" CC SERVICE SADDLE - STAINLESS STEEL BANDS	2	EA				
4" X 2" CC SERVICE SADDLE- STAINLESS STEEL BANDS	1	EA				
4" X 1 1/2" CC SERVICE SADDLE- STAINLESS STEEL BANDS	1	EA				
4" X 1" CC SERVICE SADDLE- STAINLESS STEEL BANDS	3	EA				
4" X 3/4" CC SERVICE SADDLE- STAINLESS STEEL BANDS	1	EA				
2" X 1" IP SERVICE SADDLE WITH STAINLESS STEEL BANDS	1	EA				
2" X 3/4" IP SERVICE SADDLE WITH STAINLESS STEEL BANDS	1	EA				
<b>Total Item 8 - SERVICE SADDLES</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 9 - REPAIR COUPLINGS</b>						
16" REPAIR COUPLING - HYMAX	2	EA				
12" DUCTILE IRON REPAIR COUPLINGS - HYMAX	2	EA				
12" DUCTILE IRON, RPR COUPLING, EPOXY COATED/EXTENDED RANGE (Romac Macro HP or equal)	2	EA				
10" DUCTILE IRON REPAIR COUPLINGS - HYMAX	2	EA				
10" DUCTILE IRON, RPR COUPLING, EPOXY COATED/EXTENDED RANGE (Romac Macro HP or equal)	2	EA				
8" DUCTILE IRON COUPLING - HYMAX	4	EA				
8" DUCTILE IRON, RPR COUPLING, EPOXY COATED/EXTENDED RANGE (Romac Macro HP or equal)	4	EA				
6" DUCTILE IRON COUPLING - HYMAX	4	EA				
6" DUCTILE IRON, RPR COUPLING, EPOXY COATED/EXTENDED RANGE (Romac Macro HP or equal)	4	EA				
4" DUCTILE IRON COUPLING - HYMAX	2	EA				
4" DUCTILE IRON, RPR COUPLING, EPOXY COATED/EXTENDED RANGE (Romac Macro HP or equal)	2	EA				
<b>Total Item 9 - REPAIR COUPLINGS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 10 - WRAP-AROUND REPAIR CLAMPS</b>						
16" STAINLESS STEEL REPAIR CLAMP DOUBLE BAND 12.5" LONG	1	EA				
16" STAINLESS STEEL REPAIR CLAMP DOUBLE BAND 15" LONG	1	EA				
12" ALL STAINLESS STEEL REPAIR CLAMP - 12.5" WIDE	1	EA				
12" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE	1	EA				
10" ALL STAINLESS STEEL REPAIR CLAMP - 12.5" WIDE	1	EA				
10" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE	1	EA				
8" ALL STAINLESS STEEL REPAIR CLAMP - 12.5" WIDE	4	EA				
8" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE	4	EA				
6" ALL STAINLESS STEEL REPAIR CLAMP - 12.5" WIDE	4	EA				
6" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE	4	EA				
4" ALL STAINLESS STEEL REPAIR CLAMP - 12.5" WIDE	2	EA				
4" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE	2	EA				
<b>Total Item 10 - WRAP-AROUND REPAIR CLAMPS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 11 - WRAP-AROUND REPAIR CLAMPS WITH TAP</b>						
12" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 2" CC TAP	1	EA				
12" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 1" CC TAP	1	EA				
10" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 2" CC TAP	1	EA				
10" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 1" CC TAP	1	EA				
8" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 2" CC TAP	1	EA				
8" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 1" CC TAP	1	EA				
6" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 2" CC TAP	1	EA				
6" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 1" CC TAP	1	EA				
4" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 2" CC TAP	1	EA				
4" ALL STAINLESS STEEL REPAIR CLAMP - 15" WIDE WITH 1" CC TAP	1	EA				
<b>Total Item 11 - WRAP-AROUND REPAIR CLAMPS WITH TAP</b>						
<b>ITEM 12 - CORPORATION STOPS (Ball Corp, Quick Joint, no lead)</b>						
2" CORPORATION, CC X CTQJ	2	EA				
1 1/2" CORPORATION, CC X CTQJ	2	EA				
1" CORPORATION, CC X CTQJ	24	EA				
3/4" CORPORATION, CC X CTQJ	24	EA				
<b>Total Item 12 - CORPORATION STOPS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 13 - CURB STOPS (Ball Curb, Quick Joint, no lead)</b>						
2" CURB STOP, FIP X FIP	2	EA				
2" CURB STOP, CTQJ X CTQJ	2	EA				
1 1/2" BALL CURB VALVE, CTQJ X CTQJ	2	EA				
1 1/2" BALL CURB VALVE, FIP X FIP	2	EA				
1" BALL CURB VALVE, CTQJ X CTQJ	24	EA				
1" BALL CURB VALVE, FIP X FIP	6	EA				
3/4" BALL CURB VALVE, CTQJ X CTQJ	24	EA				
3/4" BALL CURB VALVE, FIP X FIP	6	EA				
<b>Total Item 13 - CURB STOPS</b>						

**ITEM 14 - MALE ADAPTERS (Quick Joint, no lead)**

2" CTQJ X MIP	4	EA				
1 1/2" CTQJ X MIP	2	EA				
1" CTQJ X MIP	10	EA				
1" CTQJ X 3/4" MIP	6	EA				
3/4" CTQJ X 1" MIP	6	EA				
3/4" CTQJ X MIP	10	EA				
<b>Total Item 14 - MALE ADAPTERS</b>						

**ITEM 15 - FEMALE ADAPTERS (Quick Joint, no lead)**

2" CTQJ X FIP	4	EA				
1 1/2" CTQJ X FIP	2	EA				
1" CTQJ X FIP	10	EA				
1" CTQJ X 3/4" FIP	6	EA				
3/4" CTQJ X 1" FIP	6	EA				
3/4" CTQJ X FIP	10	EA				
<b>Total Item 15 - FEMALE ADAPTERS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 16 - 3 PART UNIONS (Quick Joint, no lead)</b>						
2" CTQJ BRASS UNION CTQJ X CTQJ	4	EA				
1 1/2" 3 PART UNION CTQJ X CTQJ	4	EA				
1" 3 PART UNION CTQJ X CTQJ	24	EA				
1" CTQJ X 3/4" CTQJ	10	EA				
3/4" 3 PART UNION CTQJ X CTQJ	10	EA				
<b>Total Item 16 - 3 PART UNIONS</b>						
<b>ITEM 17 - COMPRESSION BENDS (Quick Joint, no lead)</b>						
1" 90 DEG. BEND CTQJ X CTQJ	6	EA				
3/4" 90 DEG. BEND CTQJ X CTQJ	6	EA				
<b>Total Item 17 - COMPRESSION BENDS</b>						
<b>ITEM 18 - CURB BOXES</b>						
BUFFALO STYLE CURB BOX WITH COVER(48" bottom, 24" top)	60	EA				
BUFFALO STYLE CURB BOX EXTENSION 9"	30	EA				
BUFFALO STYLE CURB BOX EXTENSION 16"	16	EA				
BUFFALO STYLE CURB BOX COVER	12	EA				
12" CENTERING ROD FOR BUFFALO STYLE BOX	100	EA				
<b>Total Item 18 - CURB BOXES</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 19 - METER VALVES (no lead)</b>						
2" BALL VALVE, FLANGE X FIP w/handle	12	EA				
1 1/2" BALL VALVE, FLANGE X FIP w/handle	8	EA				
1" BALL VALVE, FIP X FIP W/ HANDLE	20	EA				
1" BALL VALVE WITH HANDLE, CTQJ X 3/4" meter swivel	20	EA				
1" 90 DEGREE BALL VALVE CTQJ X 3/4" meter swivel	50	EA				
3/4" CELLAR VALVE W/ HANDLE, FIP X FIP	10	EA				
3/4" CELLAR VALVE W/ HANDLE, CTQJ X 3/4" meter swivel	20	EA				
3/4" 90 DEGREE BALL VALVE CTQJ X 3/4" meter swivel	50	EA				
3/4" FIP X 3/4" meter swivel	20	EA				
<b>Total Item 19 - METER VALVES</b>						

<b>ITEM 20 - METER FLANGES (No lead)</b>						
2" BRONZE METER FLANGE X 2" FIP	4	EA				
1 1/2" BRONZE METER FLANGE X 1 1/2" FIP	4	EA				
METER ADAPTOR, 2" FLANGE X 1" METER NUT	4	EA				
METER ADAPTOR, 1 1/2" FLANGE X 1" METER NUT	4	EA				
<b>Total Item 20 - METER FLANGES</b>						

<b>ITEM 21 - METER SET FITTINGS (No lead)</b>						
1" CHECK VALVE FIP X FIP	40	EA				
1" CHECK VALVE 1" FIP x 3/4" METER SWIVEL (straight)	60	EA				
3/4" CHECK VALVE 3/4" FIP x 3/4" METER SWIVEL (straight)	60	EA				
1" CHECK VALVE 1" FIP x 3/4" METER SWIVEL (90 degree)	40	EA				
3/4" CHECK VALVE 3/4" FIP x 3/4" METER SWIVEL (90 degree)	40	EA				
1" MIP x 5/8" x 3/4" METER SWIVEL (1" METER SPUD)	40	EA				
3/4" MIP x 5/8" x 3/4" METER SWIVEL (3/4" METER SPUD)	40	EA				
<b>Total Item 21 - METER SET FITTINGS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 22 - BRASS WELL ADAPTERS (No lead)</b>						
1" MIP X 1" BARB	6	EA				
1" BARB X 3/4" MIP	6	EA				
3/4" FIP X 3/4" BARB	6	EA				
1" FIP X 3/4" BARB	6	EA				
<b>Total Item 22 - BRASS WELL ADAPTERS</b>						
<b>ITEM 23 - HYDRANTS</b>						
HYDRANT, 6' BURY (Clow or Mueller w/Yellow Body, white caps & bonnet) Open Left	1	EA				
HYDRANT, 5 1/2' BURY (Clow or Mueller w/Yellow Body, white caps & bonnet) Open Left	6	EA				
HYDRANT, 5' BURY (Clow or Mueller w/Yellow Body, white caps & bonnet) Open Left	1	EA				
Eclipse #2 Hydrant OL with 2" IP Inlet, 5' - 6" Bury	2	EA				
<b>Total Item 23 - HYDRANTS</b>						
<b>ITEM 24 - HYDRANT EXTENSION KITS</b>						
HYDT. EXTENSION KIT, 12" MUELLER	4	EA				
HYDT. EXTENSION KIT, 12" CLOW	4	EA				
HYDT. EXTENSION KIT, 6" MUELLER	6	EA				
HYDT. EXTENSION KIT, 6" CLOW	6	EA				
<b>Total Item 24 - HYDRANT EXTENSION KITS</b>						
<b>ITEM 25 - HYDRANT REPAIR KITS</b>						
HYDRANT REPAIR KIT - MUELLER 4 1/2"	6	EA				
HYDRANT REPAIR KIT - MUELLER 5 1/4"	6	EA				
HYDRANT REPAIR KIT - CLOW 5 1/4"	10	EA				
<b>Total Item 25 - HYDRANT EXTENSION KITS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.##
<b>ITEM 26 - THREADED BRASS (DOMESTIC, no lead)</b>						
2" BRASS IP, 90 DEG. BEND	4	EA				
2" BRASS IP, 45 DEG. BEND	4	EA				
1 1/2" BRASS IP, 90 DEG. BEND	4	EA				
1 1/2" BRASS IP, 45 DEG. BEND	4	EA				
1" BRASS IP, 90 DEG. BEND	4	EA				
3/4" BRASS IP, 90 DEG. BEND	4	EA				
2" X 6" BRASS NIPPLE	4	EA				
2" X 4" BRASS NIPPLE	4	EA				
2" X 3" BRASS NIPPLE	4	EA				
2" X CLOSE BRASS NIPPLE	4	EA				
1 1/2" X 6" BRASS NIPPLE	4	EA				
1 1/2" X 4" BRASS NIPPLE	4	EA				
1 1/2" X 3" BRASS NIPPLE	4	EA				
1 1/2" X 2" BRASS NIPPLE	4	EA				
1 1/2" X CLOSE BRASS NIPPLE	4	EA				
1" X 6" BRASS NIPPLE	4	EA				
1" X 4" BRASS NIPPLE	4	EA				
1" X 3" BRASS NIPPLE	4	EA				
1" X 2" BRASS NIPPLE	4	EA				
1" X CLOSE BRASS NIPPLE	4	EA				
3/4" X 6" BRASS NIPPLE	4	EA				
3/4" X 4" BRASS NIPPLE	4	EA				
3/4" X 3" BRASS NIPPLE	4	EA				
3/4" X 2" BRASS NIPPLE	4	EA				
3/4" X CLOSE BRASS NIPPLE	4	EA				
2" BRASS COUPLING	4	EA				
2" X 1 1/2" BRASS COUPLING	4	EA				

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 26 - THREADED BRASS (DOMESTIC, no lead) CONTINUED</b>						
2" X 1" BRASS COUPLING	4	EA				
2" X 3/4" BRASS COUPLING	4	EA				
1 1/2" BRASS COUPLING	4	EA				
1 1/2" X 1" BRASS COUPLING	4	EA				
1 1/2" X 3/4" BRASS COUPLING	4	EA				
1" BRASS COUPLING	4	EA				
1" X 3/4" BRASS COUPLING	4	EA				
3/4" BRASS COUPLING	4	EA				
2" X 1 1/2" BRASS BUSHING	4	EA				
2" X 1" BRASS BUSHING	4	EA				
2" X 3/4" BRASS BUSHING	4	EA				
1 1/2" X 1" BRASS BUSHING	4	EA				
1 1/2" X 3/4" BRASS BUSHING	4	EA				
1" X 3/4" BRASS BUSHING	4	EA				
2" PLUG, IP	4	EA				
1 1/2" PLUG, IP	4	EA				
1 1/4" PLUG, IP	4	EA				
1" PLUG, IP	4	EA				
1" CAPS	4	EA				
1" PLUG, CC	4	EA				
3/4" PLUG, IP	4	EA				
3/4" PLUG, CC	4	EA				
2" BRASS CAP	4	EA				
1 1/2" BRASS CAP	4	EA				
1 1/4" BRASS CAP	4	EA				
1" BRASS CAP	4	EA				
3/4" BRASS CAP	4	EA				

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 26 - THREADED BRASS (DOMESTIC, no lead) CONTINUED</b>						
2" BRASS TEE	4	EA				
1 1/2" BRASS TEE	4	EA				
1" BRASS TEE	4	EA				
3/4" BRASS TEE	4	EA				
<b>Total Item 26 - THREADED BRASS</b>						
<b>ITEM 27 - STAINLESS STEEL INSERTS</b>						
S.S. INSERT, FORD #55 2" CTS	12	EA				
S.S. INSERT 1 1/2" CTS	6	EA				
S.S. INSERT, FORD #52 1" CTS	12	EA				
S.S. INSERT, FORD #51 3/4" CTS	8	EA				
<b>Total Item 27 - STAINLESS STEEL INSERTS</b>						
<b>ITEM 28 - NEPTUNE METERS</b>						
METERS, 5/8" x 3/4" PROREAD C/F	20	EA				
METERS, 5/8" x 3/4" ECODER C/F	250	EA				
METERS, 5/8" x 3/4" ECODER C/F PIT						
METERS, NEPTUNE 5/8" X 3/4" T-10 PROREAD PIT	12	EA				
METERS, 3/4" TPA - T10 PROREAD C/F	6	EA				
METERS, 3/4" TPA - T10 ECODER C/F	40	EA				
METERS, 1" TPA - T10 PROREAD C/F	6	EA				
METERS, 1" TPA - T10 ECODER C/F	24	EA				
METERS, 1 1/2" T10 - ECODER FLANGED C/F	10	EA				
METERS, 2" T10 - ECODER FLANGED C/F	10	EA				
METERS, 2" NEPTUNE HPT TURBINE METER-ECODER	4	EA				
METERS, 3" NEPTUNE HPT TURBINE METER-ECODER CU. FT.	2	EA				
METERS, 4" NEPTUNE HPT TURBINE METER-ECODER CU. FT.	1	EA				
2" COMPOUND METER COMPLETE, C/F PIT ECODER	4	EA				

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 28 - NEPTUNE METERS CONTINUED</b>						
2" UME - UNITIZED MEASURING ELEMENT - COMPOUND	4	EA				
3" COMPOUND METER COMPLETE, C/F PIT ECODER	2	EA				
3" UME - UNITIZED MEASURING ELEMENT - COMPOUND	4	EA				
4" COMPOUND METER COMPLETE, C/F PIT ECODER	2	EA				
4" UME - UNITIZED MEASURING ELEMENT - COMPOUND	2	EA				
METERS, R900 WALL MIU ASSEMBLY - NEPTUNE	100	EA				
METERS, R900 PIT MIU ASSEMBLY - NEPTUNE	20	EA				
METERS, R900 REPLACEMENT BATTERY PACK	100	EA				
CHAMBER COMP 5/8" T-10 9400-000	30	EA				
CHAMBER COMP 3/4" T-10 9826-200	10	EA				
CHAMBER COMP 1" T-10 9826-300	10	EA				
METER WASHERS 5/8 x 3/4	1000	EA				
METER WASHERS 3/4	100	EA				
METER WASHERS 1"	400	EA				
METER WASHERS 1 1/2"	50	EA				
METER WASHERS 2"	50	EA				
METER WASHERS 3"	20	EA				
METER WASHERS 4"	20	EA				
METER WASHERS 6"	4	EA				
<b>Total Item 28 - NEPTUNE METERS</b>						

## Westford Water Department Water Distribution Supplies and Materials Schedule of Prices

DESCRIPTION	Quantity	Unit	Manufacturer	Manufacturer Model Number	Unit Price	Total Price \$#.#
<b>ITEM 29 - METER REGISTERS</b>						
ECODER REGISTERS 5/8"	30	EA				
ECODER REGISTERS 3/4"	20	EA				
ECODER REGISTERS 1"	10	EA				
ECODER REGISTERS 1 1/2"	6	EA				
ECODER REGISTERS 2"	6	EA				
ECODER REGISTERS 3"	2	EA				
ECODER REGISTERS 4"	2	EA				
PROREAD REGISTERS 5/8"	15	EA				
PROREAD REGISTERS 3/4"	10	EA				
PROREAD REGISTERS 1"	5	EA				
PROREAD REGISTERS 1 1/2"	3	EA				
PROREAD REGISTERS 2"	3	EA				
PROREAD REGISTERS 3"	1	EA				
PROREAD REGISTERS 4"	1	EA				
<b>Total Item 29 - METER REGISTERS</b>						

## WATER DISTRIBUTION SUPPLIES AND MATERIALS

Item No.	Item	Total Price in Words	Total Price \$#.##
1.	Ductile Iron Pipe		
2.	PVC Pipe		
3.	PE Tubing		
4.	MJ Valves		
5.	MJ Fittings (Solid Sleeves, Bends, Tees, Reducers, Plugs, Caps)		
6.	Retainer Glands		
7.	Gate Boxes and Risers		
8.	Service Saddles		
9.	Repair Couplings		
10.	Wrap-Around Repair Clamps		
11.	Wrap-Around Repair Clamps with Tap		
12.	Corporation Stops		
13.	Curb Stops		
14.	Male Adapters		

<b>Item No.</b>	<b>Item</b>	<b>Total in Words</b>	<b>Total \$#.#</b>
15.	Female Adapters		
16.	3 Part Unions		
17.	Compression Bends		
18.	Curb Boxes		
19.	Meter Valves		
20.	Meter Flanges		
21.	Meter Set Fittings		
22.	Brass Well Adapters		
23.	Hydrants		
24.	Hydrant Extension Kits		
25.	Hydrant Repair Kits		
26.	Threaded Brass		
27.	Stainless Steel Inserts		
28.	Neptune Meters		
29.	Meter Registers		



**TAX COMPLIANCE CERTIFICATION**

Pursuant to M.G.L. CH. 62C, Sec. 49A, I certify hereby in writing, under penalties of perjury, that to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting of child support.

\_\_\_\_\_  
Signature of individual submitting bid

\_\_\_\_\_  
Name of business

**CERTIFICATE OF NON-COLLUSION**

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

\_\_\_\_\_  
Signature of individual submitting bid

\_\_\_\_\_  
Name of business

**PUBLIC CONTRACTOR DEBARMENT**

The undersigned certifies under penalty of perjury that the below named contractor is not presently debarred from doing public construction work in the Commonwealth of Massachusetts under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

\_\_\_\_\_  
Signature of individual submitting bid

\_\_\_\_\_  
Name of business

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

Respectfully submitted:

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Type Name of Bidder)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Business Name)

\_\_\_\_\_  
(Business Street Address)

\_\_\_\_\_  
(City, State, Zip)

\_\_\_\_\_  
(Telephone Number)

**SECTION 00500**

**STANDARD GENERAL CONTRACT  
FOR GOODS**

Agreement effective the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_ by and between the TOWN OF Westford, 55 Main Street, Westford, MA 01886, a duly existing municipal corporation in the Commonwealth of Massachusetts, through its duly elected Board of Selectmen or its Town Manager as signed below, with no personal liability to themselves hereinafter referred to as the "Town" and (name & address)

\_\_\_\_\_ hereinafter referred to as the "Contractor".

**RECITALS**

WHEREAS the Contractor will furnish the Town with GOODS and;

WHEREAS the Town desires to obtain such from Contractor in a timely manner and;

WHEREAS it was one of the conditions of the award of this contract that a formal agreement should be executed, by the Contractor and Town, evidencing the terms of the award.

NOW THEREFORE in consideration of the mutual covenants contained the parties agree as follows:

ARTICLE I: Contractor shall furnish Town with: **“Water Distribution Supplies and Materials”**

**Items:** \_\_\_\_\_

subject to and in compliance with all conditions, covenants, stipulations, terms and provisions contained in the specifications, instructions to bidders and related documents, which if attached hereto are shown as lettered Exhibit(s) \_\_\_\_\_ and which are incorporated herein by reference, for the sum equal to the aggregate purchase price of that described above to be furnished by Contractor at the prices and rates specified in the proposal, which if also attached hereto is shown as Exhibit \_\_\_\_\_ and which is incorporated herein by reference.

ARTICLE II: Contractor shall commence the performance of this contract within \_\_\_\_\_ days of receiving written notice to proceed and shall have completed the work on or before \_\_\_\_\_ days after notice was received.

ARTICLE III: Contractor covenants and agrees to faithfully perform all of its obligations under this agreement and the incorporated documents hereto. Said performance shall be in a professional and workmanlike manner and in accordance with the standard of care and conduct that is generally acceptable in the business or profession.

ARTICLE IV: In addition to any other warranties or guarantees in any documents incorporated herein by reference, Contractor warrants that what is being provided, described above in Article I, as the subject matter of this contract, is fit for the use or purpose intended. Contractor further certifies the suitability, professionalism and capability of all individuals employed to furnish any services specified in Article I above.

ARTICLE V: The contractor shall purchase and maintain such insurance as will protect it and the Town from claims which arise out of or result from the Contractor's operations under the contract, whether such operations be by itself or by any subcontractor or anyone directly or indirectly employed by any of them. The insurance required shall be with a company authorized to do business in the Commonwealth of Massachusetts and satisfactory to the Town, and shall be written for limits of the liability satisfactory to the Town, and shall include insurance in the following amounts:

LIABILITY - \$1,000,000 MINIMUM  
UMBRELLA - \$1,000,000 MINIMUM  
WORKER'S COMPENSATION - per statutory requirements  
AUTO LIABILITY - \_\_\_\_\_

Certificates of Insurance acceptable to the Town, naming the Town as an additional insurer, shall be submitted to the Town simultaneously with the execution of the Contract.

ARTICLE VI: The Town has waived the cost of the building permits if required for this project. All permits must still be obtained by the appropriate Contractors as normally required.

ARTICLE VII: This project is Tax Exempt. The tax exemption number will be furnished to the General Contractor by the Owner after award of the contract.

ARTICLE VIII: Termination/Right to Stop Work. The Town may terminate this contract if (a) any material misrepresentation is 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 time specified 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 Town; (iv) failure to promptly re-perform, within reasonable time, the services that were rejected by the Town 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; and, (vii) any other acts specifically and expressly stated in this contract as constituting a basis for termination of this contract.

The Town may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work for such a period of time as it may determine to be appropriate for the convenience of the Town. The Town may terminate this Contract at any time, with or without cause, upon thirty (30) days written notice to the other party, sent by certified mail, to the usual place of business of the other party.

ARTICLE IX: Damages - From any sums due to the Contractor for performance of this contract, the Town may keep for its own the whole or any part of the amount for expenses, losses and damages incurred by the Town as a consequence of the need to hire a third party to perform the work required by this contract, including the cost of labor and equipment as a result of any event of default, failure, omission or mistake of the Contractor in performing the work as provided in this Contract.

It is further agreed by the Contractor that, in the event the Town is sued in a court of law or equity, or demand is made upon the Town for payment of any damages arising out of any errors or omissions on behalf of the Contractor, or the Contractor's performance or non-performance of this Contract, then the

Contractor, without reservation, shall indemnify and hold harmless the Town against any and all claims arising out of the Contractor's performance or non-performance of the Agreement.

ARTICLE X: Governing Ordinances and Laws - This contract is made subject to all the laws of the Commonwealth and the By-laws of the Town and if any such clause thereof does not conform to such Laws or Bylaws, such clause shall be void (the remainder of this Contract shall not be affected) and such Laws or By-laws shall be operative in lieu thereof.

ARTICLE XI: 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 Town may cancel, terminate or suspend the contract in whole or in part for any violation of this Article.

ARTICLE XII. Assignability: The Contractor shall not assign, sell, subcontract or transfer any interest in this contract without prior written consent of the Town.

ARTICLE XIII. Notice: Any notice to be given by either party to the other shall be deemed duly given if mailed, via certified mail, return receipt requested, as follows:

In the case of the Town to:

In the case of the Contractor to:

ARTICLE XIV. Amendments: This contract represents the entire agreement between the parties and the terms of this contract may not be altered or amended except by writing by the parties with the same formalities as this agreement.

ARTICLE XV. Severability: If any provision of this Agreement or any portion of such provision shall be held invalid or illegal, then the remainder of this Agreement or the remainder of such provision shall not be affected thereby.

ARTICLE XVI. Interpretation of Specifications and Contract Requirements: A decision of interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work by the Contractor, shall be made promptly and, in any event, no later than thirty days after the written submission for decision by the Town, but if such decision requires extended investigation and study, the Town shall, within thirty days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made.

ARTICLE XVII. Indemnification: The Contractor hereby assumes the entire responsibility and liability for any and all injuries to, or death of, all persons, including the Contractor's employees, and for any and all damage to property caused by, resulting from, or arising out of, any act, omission or neglect on the part of the Contractor or anyone directly or indirectly employed by the Contractor.

ARTICLE XVIII: The Town agrees to faithfully pay the Contractor, when due and payable, and under the terms of all such incorporated documents and instruments to this agreement, all such contracted sums.

IN WITNESS WHEREOF, the parties hereto have set their hand and seals to this Agreement on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Availability of Funds:

\_\_\_\_\_  
Town Accountant

Town of Westford by its  
Board of Selectmen or Town Administrator  
Date of Board Vote (if any) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Contractor:**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print

\_\_\_\_\_  
Title

Corporate Seal

## SECTION 02665

### TECHNICAL SPECIFICATIONS

#### 1. SCOPE OF SERVICES

- a. Under this specification, the Contractor shall furnish materials and shall deliver materials to the Westford Water Department, located at 60 Forge Village Road, Westford, MA 01886.

#### 2. MATERIALS MANUFACTURE LOCATION

- a. All materials shall be made in North America (USA, Canada, Mexico) unless otherwise specified.
- b. All materials shall meet the requirements of NSF 61 for use in Potable Water. All materials containing brass shall meet the requirements of NSF 61G/NSF 372 with regards to lead content insofar as they apply.

#### 3. DUCTILE IRON PIPE

- a. Ductile iron pipe shall be that of a manufacturer who can demonstrate at least 5 years of successful experience in manufacturing ductile iron pipe. The pipe shall be equipped with push-on type, restrained joint, or mechanical joint, as required.
- b. Ductile iron pipe shall conform to the latest edition of AWWA C150 and C151, Class 52 and shall have push-on joints. Pipe shall be double cement-lined with seal coat inside and out, conforming to ANSI A21.4/AWWA C104.
- c. Gaskets shall meet the material requirements of ANI/AWWA C111 for mechanical joint gaskets.
- d. Pipe shall be manufactured in the United States.
- e. All pipe shall have a bituminous outside coating in accordance with AWWA C151 and C110 respectively, latest edition.
- f. All pipe shall be cement-mortar lined and seal coated in accordance with AWWA C104, latest edition. Cement-mortar lining shall be double thickness.
- g. Minimum nominal length shall be no less than 18 feet.

#### 4. PIPE

- a. PVC pipe shall be that of a manufacturer who can demonstrate at least 5 years of successful experience in manufacturing PVC pipe. The pipe shall be of the push-on type with rubber gaskets.

- b. PVC pipe shall conform to the latest edition of AWWA C900.
- c. All pipe shall meet or exceed DR-18-150 psi working pressure standards.
- d. Minimum nominal length shall be no less than 20 feet.

5. PE TUBING

- a. Polyethylene tubing shall Polyethylene PE 3408, Class 200 tubing and shall conform to AWWA Specification C901 (latest version) and the latest revision of ASTM-D2737 and comply with NSF 61.
- b. The tubing shall be copper O.D. size (copper tube size – CTS) and suitable for use with standard industry brass compression fitting without special adapters.
- c. Tubing shall be Silver-Line Plastics Ultra-Pure II or approved equal.

6. MJ VALVES

a. Gate Valves – Resilient Seat with Gland

- 1. Resilient wedge gate valves shall be iron body, resilient seated type meeting the latest edition of AWWA C509 or AWWA C515 with mechanical joint ends.
- 2. The valves shall be designed for 200 psi working pressure and 400 psi test pressure.
- 3. Valves shall have corrosion resistant fusion-bonded interior and exterior epoxy coatings, iron disc with epoxy coating, and replaceable steel reinforced rubber seat.
- 4. Valves are to have a double O-ring seal stuffing box and a non-rising stem. Valves shall have a 2-inch square operating nut, and be Open Left (counter-clockwise to open).
- 5. Valves shall be as manufactured by Mueller Company, #A-2360-23, or approved equal.

b. Butterfly Valves

- 1. All butterfly valves shall be Class 150B, of the rubber-seated tight-closing type and shall meet or exceed AWWA Specification C-504-94, with latest revisions. Valves shall be designed for underground service.
- 2. Valves shall have mechanical joint ends. Standard M.J. accessories are also to be provided.
- 3. All valves shall be rated at 200 psi minimum working pressure and

hydrostatically tested at 400 psi.

4. Valves shall have thermosetting epoxy coating on the interior, and the vane. The coating shall meet all requirements of AWWA C-550 latest revision. All bodies and vanes shall be factory coated prior to assembly and tested. All ferrous surfaces of the valve body waterway and vane shall receive an epoxy coating with a minimum dry thickness of 8 mils. All exterior surfaces shall be coated with asphalt varnish.
5. Valves shall have a 2-inch square operating nut, and be Open Left (counter-clockwise to open).

## 7. MJ FITTINGS

- a. Fittings shall be compact ductile iron Class 350 Mechanical Joint, conforming to ASNI Specification A21.53 (AWWA C153), latest edition.
- b. Hydrant tees shall have a rotatable mechanical joint gland on the 6-inch plain end branch to provide positive valve restraint.
- c. Fitting shall be manufactured in the United States.
- d. All fittings shall be marked with the weight and shall have distinctly cast upon them the pressure rating, the manufacturer's identification, nominal diameter or openings and the number of degrees or fraction of the circle on all bends.
- e. The restraining mechanism shall consist of individually actuating wedges that increase their resistance to pull-out as external forces increase.
- f. The device shall be capable of full mechanical joint deflection during assembly and the flexibility of the joint shall be maintained after burial.

## 8. RETAINER GLANDS

- a. The joint restraint ring and its wedging components shall be made of grade 60-42-10 ductile iron conforming to ASTM A536-84.
- b. The wedges shall be ductile-iron heat treated to a minimum hardness of standardized mechanical joint bell conforming to AWWA A111 and AWWA C153 of the latest revision.
- c. Torque limiting twist-off nuts shall be used to insure proper actuation of the restraining wedges.
- d. The mechanical joint restraint shall have a rated working pressure of 350 psi. The devices shall be Listed by Underwriters Laboratories and Approved by Factory Mutual.

- e. Restraints for mechanical joints shall be Series 1100 Megalug as Manufactured by EBAA Iron, Stargrip Series 3000 as manufactured by Star Pipe Products, or approved equal. Restraining glands using set screws will not be accepted.
- f. Restraints for push-on joints shall be Stargrip Series 3100P as manufactured by Star Pipe Products, Series 1700 as manufactured by EBAA Iron, or approved equal.
- g. All retainer glands shall be manufactured in the USA.

9. GATE BOXES AND RISERS

- a. Gate boxes shall be cast iron, asphalt coated, sliding type, two-piece, adjustable with an overall assembly height of 39-60 inches.
- b. A minimum 6-inch overlap is required between sliding sections.
- c. The inside diameter of the bottom section shall be at least 5-1/4 inches and have a belled base. The top section shall be at least 6-1/8 inches in diameter and have top flanges.
- d. The bottom section shall be at least 36-inches in length. The top section shall be at least 26-inches in length and have a plain bottom.
- e. Cast iron covers shall have two (2) pick holes and the word "WATER" plainly cast in relief on the top cover. Covers shall have a minimum skirt of 2 inches and a minimum weight of 14 pounds.
- f. Gate valve boxes shall be manufactured in North America only.
- g. Gate valve box risers and extensions may be manufactured in North America or India.

10. SERVICE SADDLES

- a. Service Saddles shall be designed for use on asbestos-cement, cast iron, ductile iron, and PVC pipe.
- b. Saddle body shall be high strength ductile iron per ASTM A536. One side of saddle body shall have closed bolt lugs.
- c. Body shall have a NSF-61 approved fusion bonded epoxy coating.
- d. Band, bolts, nuts, and washers shall be 18-8 Type 304 Stainless Steel.
- e. Gaskets shall be EPDM rubber per ASTM D2000.
- f. Service outlet shall have CC threads conforming to AWWA Standard C800.

- g. Service saddles shall be Ford Meter Box FS101, FS202, FC101, FC202 or approved equal.

#### 11. REPAIR COUPLINGS

- a. Couplings are to be used in connecting two plain ends of cast, ductile iron, or asbestos cement pipe and shall be the stab type with compression ends, conforming to AWWA Standard C219.
- b. Center sleeves shall be carbon steel tubing conforming to ANSI/AWWA C200.
- c. Gaskets shall be multi-range two layered chloramine resistant EPDM gaskets, NSF-61 approved.
- d. One or two type 304 stainless steel bolts and nuts conforming to AWWA C219 shall be provided with each coupling, depending on the size.
- e. The interior and exterior surfaces shall be coated with an NSF-61 approved fusion bonded epoxy coating conforming to AWWA C213 section 4.5.
- f. The coupling shall provide a minimum deflection of 8 degrees (4 degrees per end), and up to a working pressure of 260 psi with zero leakage.
- g. Couplings shall be Hymax models 2000/2100, Romac Industries, Inc. Macro HP, Smith-Blair 421 Series or approved equal.

#### 12. WRAP-AROUND REPAIR CLAMPS

- a. Repair clamps shall be single section type and conform to AWWA Standard C230.
- b. Clamps shall be 18-8 Type 304 Stainless Steel, including the band, nuts, and studs. Lugs, sidebars, lifter bar, and armor shall be 18-8 Type 304 heavy gauge Stainless Steel. Armor shall be vulcanized and recessed into the gasket to ensure uniform compression against the pipe when secured.
- c. Nut threads should be coated to prevent galling. Studs and lugs shall be permanently attached to the clamp sidebar by means of a Metal Inert Gas (MIG) weld.
- d. Sidebars shall be Tungsten Inert Gas (TIG) welded to form a strong, permanent fusion with the repair clamp band.
- e. Gasket shall be gridded virgin Styrene Butadiene Rubber (SBR) compounded for water service and conform to ASTM D2000. Gaskets shall be suitable for temperatures of 150 degrees Fahrenheit continuous, 180 degrees Fahrenheit intermittent.

- f. Tapped repair clamps shall have a CC outlet tap that is fused to the clamp band by a fully passivated TIG weld.
- g. Repair clamps shall be Ford Meter Box FS Style or approved equal.

### 13. CORPORATION STOPS AND CURB STOPS

- a. All brass goods shall meet the requirements of the “Reduction of Lead in Drinking Water Act” and be identified as “Lead Free” with “NL” cast on the item.
- b. Brass goods shall be supplied with iron pipe threads, cc threads, or compression couplings as required.
- c. Corporation stops shall be Quick Connect “Quick Joint” (QJ) compression style and meet the most recent revision of the AWWA Standard “Threads for Underground Service Line Fittings” (AWWA C800).
- d. Corporation stops shall be “Open Left”, “Ball” style and have an operating nut 3/8 inches wide by 1-1/2 inches long (no square head type). Corporation Stops shall be Mueller Series 110 or approved equal.
- e. Curb Stops shall have “Quick Joints”. Curb Stops shall be “Open Left”, “Ball” style without drain and shall be Mueller Mark II Oriseal or approved equal.

### 14. CONNECTORS

- a. All brass goods shall meet the requirements of the “Reduction of Lead in Drinking Water Act” and be identified as “Lead Free” with “NL” cast on the item.
- b. Brass goods shall be supplied with iron pipe threads, cc threads, or compression couplings as required.
- c. Adapters shall have “quick joint” connections and be copper tube size (CTS). Adapters shall be able to joint Iron Pipe (IP) to Copper Tubing (CT) using a “quick joint” (QJ) connection on the copper tube side.
- d. Adapters shall be as manufactured by Ford Meter Box Company, Inc. or equal.
- e. Three Part Unions shall have “quick joints” and be for CT. Three Part Unions shall be as manufactured by Ford Meter Box Company, Inc. or equal.
- f. Compression Bends shall have “quick joints” and be for CT. Compression Bends shall be as manufactured by Ford Meter Box Company, Inc. or equal.

### 15. CURB BOXES

- a. Curb boxes and Curb Box Extensions shall be of the “Buffalo” type, cast-iron construction.

- b. Boxes shall be tar base enamel coated inside and out.
- c. Curb box lids shall be of extra heavy cast-iron construction with a brass pentagon plug.
- d. Inside diameter of the upper section shall be at least 2-1/2 inches for 3/4 inch and 1 inch curb stops and shall be at least 3 inches for 1-1/2 inch and 2 inch curb stops.
- e. The top section shall be slide type, a minimum of 24 inches long. The bottom section shall be slide type 1 OOE, a minimum of 54 inches long.
- f. Curb boxes and Curb Box Extensions shall be manufactured in North America.

16. METER VALVES AND FITTINGS

- a. All brass goods shall meet the requirements of the “Reduction of Lead in Drinking Water Act” and be identified as “Lead Free” with “NL” cast on the item.
- b. Brass goods shall be supplied with iron pipe threads, cc threads, or compression couplings as required.
- c. Meter valves shall be ball valves. They shall be equipped with either meter swivel nuts or handles, as indicated in Section 00300, page 14. Meter valves shall be as manufactured by Mueller Co. or approved equal.
- d. Meter set fitting shall be check valves, as indicated in Section 00300, page 14 with meter swivel nuts. Water meter spuds shall be designed to adapt a water meter to a national pipe thread standard.
- e. All meter valves and fittings (Items 19 – 21) shall be manufactured in the United States.

17. BRASS WELL ADAPTERS

- a. All brass goods shall meet the requirements of the “Reduction of Lead in Drinking Water Act” and be identified as “Lead Free” with “NL” cast on the item.
- b. Brass goods shall be supplied with iron pipe threads, cc threads, or compression couplings as required.
- c. Threaded Brass items shall be manufactured in the United States.

18. HYDRANTS

- a. Fire hydrants shall comply with AWWA Standards C502 and C550 (latest revisions), be listed by Underwriters Laboratories, and have Factory Mutual Research approval.

- b. Hydrants shall be the compression type, closing with the pressure, self-cleaning drain valve and drainage area shall be completely bronze or brass lined.
- c. Hydrants shall have a mechanical joint inlet connection, two 2-1/2 inch hose connections, and one 4-1/2 inch steamer connection with a valve opening 5-1/4 inches in diameter minimum and a standpipe with an 8-1/2" inch minimum diameter.
- d. Hydrants shall have National Standard Threads, 1-1/2" pentagonal operating nuts and nozzle caps with non-kink safety chains.
- e. Hydrants shall be manufactured with operating nut and thrust nut made of copper alloy with bearing located both above and below the thrust collar and with operating nut protected by a cast-iron weather shield.
- f. Nozzles shall lock mechanically into the barrel coupling by a stainless steel pin or screw.
- g. Hydrants shall be traffic model with dual drain ports, safety flange, and steel stem couplings and be able to be rotated 360 degrees.
- h. Hydrants shall be dry-top, center stem, 4-bolt bonnet construction and have an O-ring sealed lubrication reservoir that provides lubrication to all stem threads, bearing surfaces, and O-rings each time the hydrant is operated.
- i. Hydrants shall have mechanical joint shoes, 5'6" (street level shoulder areas) or 6'0" (raised sidewalk) depth of bury, 5-1/4 inch valve, and be marked with an arrow and the word "OPEN" to indicate the direction to turn the stem to open the hydrant. Hydrants shall Open LEFT.
- j. Hydrants shall be designed for 250 psi working pressure and tested to 500 psi Hydrostatic pressure.
- k. Hydrants exterior surfaces shall be factory epoxy or TGIC powder coated as follows: Body – Yellow, Bonnet – White, Nozzle Caps – White.
- l. Main valve and seat ring are to be removable through the upper barrel from above ground.
- m. Hydrants shall be manufactured in the United States and backed by a manufacturer's 10-year limited warranty.
- n. Hydrants shall be Mueller Super Centurion, Clow Medallion, or approved equal.

## 19. THREADED BRASS

- a. All brass goods shall meet the requirements of the "Reduction of Lead in Drinking Water Act" and be identified as "Lead Free" with "NL" cast on the item.

- b. Brass goods shall be supplied with iron pipe threads, cc threads, or compression couplings as required.
- c. Threaded Brass items shall be manufactured in the United States.

20. STAINLESS STEEL INSERTS

- a. Stainless steel inserts shall conform to AWWA C901.
- b. Stainless steel inserts shall be made of solid 304 tubular stainless steel conforming to ASTM 240.
- c. Stainless steel inserts shall be dimpled and flanged to retain placement within the service line.
- d. Stainless steel inserts shall be manufactured in the United States.
- e. Stainless steel inserts shall be as manufactured by Ford Meter Box Company, Inc. or equal.

21. NEPTUNE METERS

**THIS IS A PROPRIETARY ITEM. SUBSTITUTION OF PRODUCTS FROM OTHER MANUFACTURERS WILL NOT BE PERMITTED.**

Meters 5/8 inch to 2 inch

- a. Model: Neptune Model T10 for small meters.
- b. Type: 5/8 inch to 2 inch water meters shall be magnetic drive, positive displacement of the flat nutating disk type that conform to AWWA Standard C700 (latest revision), "Standard Specifications for Cold Water Meters" and be certified to the National Conference on Weights and Measures regulatory standards
- c. Cases
  - 1. The size, capacity, and meter lengths shall be as specified in AWWA Standard C700 (latest revision).
  - 2. The maximum number of disc nutations is not to exceed those specified in AWWA C700 (latest revision).
  - 3. All meters shall have a meter maincase and cover cast from NSF 61G/NSF 372 certified lead free alloy containing a minimum of 85 percent copper. The maincase markings shall be cast raised and shall indicate meter size, model, direction of flow, and NSF 61 certification. The meter serial number must be permanently affixed to the main case to aid in

identification and must be visible so that it can be read from directly above the water meter.

4. Maincases for 5/8, 3/4, and 1 inch meters shall be of the removable cast iron or bronze frost bottom type with the bottom cap secured by four (4) bolts on the 5/8 and 3/4 inch sizes and six (6) bolts of the 1 inch size. 1-1/2 and 2 inch maincases shall be made of lead free brass with a lead free brass cover secured to the maincase with eight (8) bolts.
5. All maincase bolts shall be of the of 300 series non-magnetic stainless steel to prevent corrosion.

d. Performance & Specifications

1. Meters shall be manufactured by Neptune.
2. High resolution, low flow leak detection.
3. Tamperproof seal pin.
4. Made from lead free high copper alloy.
5. NSF/ANSI 61, Annex G certified and Annex F compliant.
6. Electrical grounding continuity.
7. Ability to accept Tricon E digital pulse head with 4-20 milliAmp (mA) output.

Meters 2 inch to 4 inch

1. Model: Neptune High Performance Turbine Meter
2. Type: Meters shall be of the inline horizontal-axis type per AWWA Class II.
3. Capacity: The capacity of the meters in terms of normal operating range, maximum continuous flow, maximum loss of head, and maximum intermittent flow shall be as shown below:

Size	Normal Operating Range (gpm)	Maximum Continuous Flow (gpm)	Maximum Loss of Head at Max Cont Flow (psi)	Maximum Intermittent Flow (gpm)
1 1/2"	4 – 160	160	4	200
2"	4 – 200	200	4.5	250
3"	5 – 450	450	5	560
4"	10 – 1200	1200	5.5	1500
6"	20 – 2500	2500	5	3100
8"	35 – 4000	4000	5	5000
10"	50 – 6500	6500	3.5	8000

4. Size: The size of the meters shall be determined by the nominal size (in inches) of the opening in the inlet and outlet flanges. Overall lengths of the meters shall be as follows:

Meter Size	Laying Length	Meter/Strainer Combined Length
1 1/2"	10" (13" w/test spool)	—
2"	10"	17"
3"	12"	18"
4"	14"	21 1/2"
6"	18"	27"
8"	20"	30"
10"	26"	41"

5. The maincase and cover shall be cast from NSF/ANSI 61, Annex G and Annex F certified lead free alloy containing a minimum of 85% copper. The size, model, NSF 61 certification and arrows indicating direction of flow shall be cast in raised characters on the maincase or cover. The cover shall contain a calibration vane for the purpose of calibrating the turbine measuring element while the meter is in-line and under pressure. The calibration vane shall be mounted under the register or shall be covered by a protective cap that is attached in a tamper-resistant device.
6. External Bolts: Casing bolts shall be made of AISI Type 316 stainless steel.
7. Connections: Maincases shall be flanged. 2 inch sizes shall be oval flanged and 3 inch and 4 inch sizes shall be round flanged per Table 3, AWWA C701.
8. Unitized Measuring Element (UME): A UME is a complete assembly, factory calibrated to AWWA standards that includes the cover, registers, and both a turbine measuring element and a nutating disc chamber

assembly. It shall be easily field removable from the meter body without the requirement of unbolting flanges.

9. Strainer: A strainer shall be provided for the disc meter. It shall be easily removable and have an effective straining area of double the disc meter inlet.
10. Registration Accuracy: Registration accuracy over the normal operating range shall be 98.5% to 101.5%. Registration at the crossover shall not be less than 95% with direct reading registers. Registration at the crossover shall not be less than 90% with absolute encoder or generator remote registers.
11. Registration at the extended low flow rate shall not be less than 95%.
12. Remote Capability Options: All meters shall be equipped with encoder remote registers per AWWA C707 and shall meet all AWWA C702 performance standards.

#### Meters 3 inch to 4 inch

- a. Model: Neptune Tru/Flo Compound Meter.
- b. Type: Compound meters shall consist of a combination of an AWWA Class II turbine meter for measuring high rates of flow and a nutating disc type positive displacement meter for measuring low rates of flow enclosed in a single maincase. An automatic valve shall direct flows through the disc meter at low flow rates and through the turbine meter at high flow rates. At high flow rates, the automatic valve shall also serve to restrict the flow through the disc meter to minimize wear. shall be magnetic drive, positive displacement of the flat nutating disk type that conform to AWWA Standard C700 (latest revision), "Standard Specifications for Cold Water Meters" and be certified to the National Conference on Weights and Measures regulatory standards
- c. Case and Cover: The maincase and cover shall be cast from an NSF/ANSI 61, Annex G and Annex F certified lead free high copper alloy containing a minimum of 85% copper. The size, model, NSF certification and arrows indicating direction of flow shall be cast in raised characters on the maincase or cover. The covers all contain a stainless steel calibration vane for the purpose of calibrating the turbine measuring element while the meter is inline and under pressure. A test plug shall be located in the maincase or the cover for the purpose of field testing of the meter. The size, capacity, and meter lengths shall be as specified in AWWA Standard C700 (latest revision).
- d. External Bolts: Casing bolts shall be made of AISI Type 316 stainless steel.
- e. Connections: Maincases shall be flanged. The 3 inch and 4 inch meters shall be round flanged per Table 4, AWWA C702.

- f. Unitized Measuring Element (UME): A UME is a complete assembly, factory calibrated to AWWA standards that includes the cover, registers, and both a turbine measuring element and a nutating disc chamber assembly. It shall be easily field removable from the meter body without the requirement of unbolting flanges.
- g. Strainer: A strainer shall be provided for the disc meter. It shall be easily removable and have an effective straining area of double the disc meter inlet.
- h. Registration Accuracy: Registration accuracy over the normal operating range shall be 98.5% to 101.5%. Registration at the crossover shall not be less than 95% with direct reading registers. Registration at the crossover shall not be less than 90% with absolute encoder or generator remote registers.  
  
Registration at the extended low flow rate shall not be less than 95%.
- i. Remote Capability Options: All meters shall be equipped with encoder remote registers per AWWA C707 and shall meet all AWWA C702 performance standards.

22. METER REGISTERS

**THIS IS A PROPRIETARY ITEM. SUBSTITUTION OF PRODUCTS FROM OTHER MANUFACTURERS WILL NOT BE PERMITTED.**

- a. Model: Neptune ECODER.
- c. Performance & Specifications
  - 1. Heads shall read in cubic feet.
  - 2. Magnetic drive, low torque registration.
  - 3. Impact-resistant E-coder register.
  - 4. Date of manufacture, size, and model stamped on dial face.
- d. Model: Neptune ProRead (ARB VI).
- e. Performance & Specifications
  - 1. Heads shall read in cubic feet.
  - 2. Plastic polycarbonate enclosure, oil free design
  - 3. Magnetic drive, low torque registration.
  - 4. Date of manufacture, size, and model stamped on dial face.

23. METER INTERFACE UNITS (MIU)

**THIS IS A PROPRIETARY ITEM. SUBSTITUTION OF PRODUCTS FROM OTHER MANUFACTURERS WILL NOT BE PERMITTED.**

- a. Model: Neptune R900
- b. The MIUs must be compact electronic devices connected to the water meters. They shall interrogate the encoder register and transmit the meter reading and other information to a remote reading device. They shall be compatible with encoder registers using either Neptune ProRead/E-Coder protocol or Sensus-protocol (UI-1203). MIUs shall feature “auto detect” functionality to detect the type of encoder connected and shall not require reprogramming in the field. The same RF MIUs must be capable of being read by a walk-by handheld computer equipped with a RF receiver, a mobile system with an RF receiver mounted in a vehicle, and a fixed network data collection system. This shall allow an easy migration between the three meter reading systems without any change to the MIU devices or revisiting the site.
- c. The MIU shall log 96 days of hourly consumption data, available for retrieval via RF activation from the handheld data collection device.
- d. The MIUs shall be attached to new meters, or they shall retrofit existing meters in the field. The MIUs shall be manufactured in both wall and pit models. The wall MIU shall have the ability to be mounted in a basement or on the outside of a house. The pit MIU shall have the ability to be mounted in a pit or an underground vault and offer an optional through-the-pit-lid antenna. The wall and pit MIUs shall have a fully-potted, submersible design.
- f. Physical/Mechanical Requirements

1. Wall Unit

The MIU housing shall be constructed of a polycarbonate plastic compound and be capable of mounting both indoors and outdoors on wall or pole or attached directly to the meter. The device must be water resistant and capable of exposure to spray and splash. The device must be able to withstand a 200-hour salt fog test as specified in NEMA 4 standard.

The device shall provide a location for a tamper-deterrent seal. Tampering with the device functions or connections shall not be possible without causing visible damage to the device exterior or to the seal.

The device shall be capable of operating at temperatures of -22°F to +149°F (-30°C to +65°C) with operating humidity of 0 to 100% condensing.

The circuit board and the battery will be protected by a potting material.

The unit must retrofit to existing installations.

The MIU device must be protected against static discharge without loss of data per IEC 801-2, issue 2.

## 2. Pit Unit

For pit or vault applications, the MIU antenna shall be designed to be installed through the industry standard 1<sup>3</sup>/<sub>4</sub>" hole in the pit lid with no degradation of transmission range. The MIU antenna unit will be capable of mounting to various thicknesses of pit lids from 1/2" to 2 1/2".

The device shall be capable of operating at temperatures of -22°F to +149°F (-30°C to +65°C) and operating humidity of 0 to 100% condensing.

The range will not be affected when the pit is flooded.

The circuit board and the battery will be protected by a potting material.

The antenna shall be made of a metallic and polymer material to withstand traffic and shall have a dual seal connection to the MIU housing.

The MIU device must be protected against static discharge without loss of data per IEC 801-2, issue 2.

**\*\*END OF SPECIFICATION\*\***