

SUBMIT BIDS TO:	CITY OF TUSCALOOSA P.O. BOX 2089 TUSCALOOSA, AL 35403	PURCHASING OFFICE 2201 UNIV. BLVD. TUSCALOOSA, AL 35401	INVITATION TO BID CITY OF TUSCALOOSA										
BID TITLE ASSORTED WATER SUPPLIES 2016		BID NO. 32010-090816-1											
PAGE 1 OF 38 PAGES	BIDS WILL BE OPENED AT 2:00 PM ON SEPTEMBER 8, 2016 IN THE OFFICE OF THE PURCHASING AGENT, 2201 UNIVERSITY BLVD. TUSCALOOSA, AL 35401 AND MAY NOT BE WITHDRAWN FOR THIRTY (30) DAYS AFTER SUCH DATE & TIME.		ISSUE DATE 08/19/2016										
 <p style="text-align: center;">MAYOR WALTER MADDOX</p> <p style="text-align: center;">COUNCIL MEMBERS</p> <table border="0" style="width: 100%;"> <tr> <td>PHYLLIS W. ODOM</td> <td>MATTHEW CALDERONE</td> </tr> <tr> <td>HARRISON TAYLOR</td> <td>KIP TYNER</td> </tr> <tr> <td>CYNTHIA LEE ALMOND</td> <td>EDDIE PUGH</td> </tr> <tr> <td>SONYA McKINSTRY</td> <td></td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td>CITY CLERK TONY MEGGS</td> <td>PURCHASING AGENT DAVID COGGINS</td> </tr> </table>		PHYLLIS W. ODOM	MATTHEW CALDERONE	HARRISON TAYLOR	KIP TYNER	CYNTHIA LEE ALMOND	EDDIE PUGH	SONYA McKINSTRY		CITY CLERK TONY MEGGS	PURCHASING AGENT DAVID COGGINS	Vendor Information (SECTION TO BE COMPLETED BY VENDOR) <hr/> Company Name (Please Print) <hr/> Phone Number Fax Number <hr/> Email Address	
PHYLLIS W. ODOM	MATTHEW CALDERONE												
HARRISON TAYLOR	KIP TYNER												
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GENERAL CONDITIONS OF INVITATIONS TO BID

1. **PREPARATION OF BIDS**
Bids will be prepared in accordance with the following:
 - (a) Our enclosed Bid Proposal Form is to be used in submitting your bid.
 - (b) All information required by the Bid form shall be furnished. The bidder shall print or type his name and manually sign the schedule and each continuation sheet on which any entry is made.
 - (c) Unit prices shall be shown and where there is an error in extension of price, the unit price shall govern.
 - (d) Proposed delivery time must be shown and shall include Sundays and holidays.
 - (e) Bidder will not include federal taxes nor State of Alabama sales, excise, and use taxes in bid prices as the City is exempt from payment of such taxes. An exemption certificate will be signed where applicable upon request.
 - (f) Bidders shall thoroughly examine the drawings, specifications, schedule, instructions and all other contract documents.
 - (g) Bidders shall make all investigations necessary to thoroughly inform themselves regarding plant and facilities for delivery of material and equipment as required by the bid conditions. No plea of ignorance by the bidder of conditions that exist or that may hereafter exist as a result of failure or omission on the part of the bidder to make the necessary examinations and investigations, or failure to fulfill in every detail the requirements of the contract documents, will be accepted as a basis for varying the requirements of the City or the compensation to the vendor.
 - (h) Bidders are advised that all City Contracts are subject to all legal requirements provided for in the Purchasing ordinance and/or State and Federal Statutes.

2. **DESCRIPTION OF SUPPLIES**
 - (a) Any manufacturer's names, trade names, brand name, or catalog numbers used in specifications are for the purpose of describing and establishing general quality levels. SUCH REFERENCES ARE NOT INTENDED TO BE RESTRICTIVE. Bids will be considered for any brand which meets the quality of the specifications listed for any items.
 - (b) Bidders are required to state exactly what they intend to furnish, otherwise they shall be required to furnish the items as specified.
 - (c) Bidders will submit, with their proposal, data necessary to evaluate and determine the quality of the item(s) they are bidding.

3. **SUBMISSION OF BIDS**
 - (a) Bids and changes thereto shall be enclosed in sealed envelopes addressed to David Coggins, Purchasing Agent, 2201 University Blvd., Tuscaloosa, Alabama. The name and address of the bidder, the date and hour of the bid opening and the material or service bid on shall be placed on the outside of the envelope.
 - (b) Bids must be submitted on the forms furnished. Telegraphic bids will not be considered.

4. **REJECTION OF BIDS**
 - (a) The City may reject a bid if:
 1. The bidder misstates or conceals any material fact in the bid, or if,
 2. The bid does not strictly conform to the law or requirement of bid, or if,
 3. The bid is conditional, except that the bidder may qualify his bid for acceptance by the City on an "all or none" basis, or a "low item" basis. An "all or none" basis bid must include all items upon which bids are invited.
 - (b) The City may, however, reject all bids whenever it is deemed in the best interest of the City. The City may also waive any minor informalities or irregularities in any bid.

5. **WITHDRAWAL OF BIDS**
 - (a) Bids may not be withdrawn after the time set for the bid opening for a period of time as specified.
 - (b) Bids may be withdrawn prior to the time set for the bid opening.

6. LATE BIDS OR MODIFICATIONS

- (a) Bids and modifications received after the time set for the bid opening will not be considered.
- (b) Modifications in writing received prior to the time set for the bid opening will be accepted.

7. CLARIFICATIONS OR OBJECTION TO BID SPECIFICATIONS

If any person contemplating submitting a bid for this contract is in doubt as to the true meaning of the specifications or other bid documents of any part thereof, he may submit to the Purchasing Agent on or before five (5) days prior to scheduled opening a request for clarification. All such requests for information shall be made in writing and the person submitting the request will be responsible for its prompt delivery. Any objection to the specifications and requirements as set forth in this bid must be filed in writing with the Purchasing Agent on or before five (5) days prior to scheduled opening.

8. DISCOUNTS

- (a) Bidders may offer a cash discount for prompt payment; however, such discounts shall NOT be considered in determining the lowest net cost for bid evaluation purposes. Bidders are encouraged to reflect cash discounts in the unit prices quoted.
- (b) In connection with any discount offered, time will be computed from the date of receipt of supplies or services or from the date a correct invoice is received, whichever is the later date. Payment is deemed to be made on the date of mailing of the check.

9. SAMPLES

Samples, when required, must be submitted within the time specified at no expense to the City of Tuscaloosa. If not destroyed or used up during testing, samples will be returned upon request at the bidder's expense, unless stated otherwise in Special Conditions or Specifications. Each individual sample must be labeled with bidder's name and manufacturer's brand name and number.

10. AWARD OF CONTRACT

- (a) The contract will be awarded to the lowest responsible bidder based upon the following factors: quality; conformity with specifications; purpose for which required; terms of delivery; transportation charges; dates of delivery.
- (b) The city reserves the right to accept and award item by item, and/or by group, or in the aggregate, unless the bidder qualifies his bid by specified limitations. Re Par.4(a)3.
- (c) If two or more bids received are for the same total amount or unit price, quality and service being equal, the contract shall be awarded to a local bidder.
- (d) Prices quoted must be FOB Tuscaloosa with all transportation charges prepaid unless otherwise specified in the Invitation to Bid.
- (e) A written award of acceptance (Purchase Order), mailed or otherwise furnished to the successful bidder shall result in a binding contract.

11. DELIVERY

- (a) Deliveries are to be FOB Destination unless otherwise specified in the Invitation to Bids.
- (b) Deliveries are to be made during regular business hours.

12. CONDITION OF MATERIALS AND PACKAGING

All items furnished must be new and free from defects. No others will be accepted under the terms and intent of this bid. All containers shall be new and suitable for storage or shipment, and price bid shall include standard commercial packaging.

13. CLAIMS

Successful bidder(s) will be responsible for making any and all claims against carriers for missing or damaged items.

14. LOCAL, STATE, AND FEDERAL COMPLIANCE REQUIREMENTS

Bidders shall comply with all local, state, and federal directives, orders and laws as applicable to this bid and subsequent contract(s).

15. PROVISION FOR OTHER AGENCIES

Unless otherwise stipulated by the bidder, the bidder agrees when submitting his bid to make available to all City agencies, departments, and in-city municipalities the bid prices he submits, in accordance with the bid terms and conditions, should any said department, agency, or municipality wish to buy under this proposal.

16. COLLUSION

The bidder, by affixing his signature to this proposal, agrees to the following: "Bidder certifies that his bid is made without previous understanding, agreement, or connection with any person, firm, or corporation making a bid for the same items and is in all respects fair, without outside control, collusion, fraud, or otherwise illegal action".

17. VARIANCE IN CONDITIONS

Any and all special conditions and specifications attached hereto which vary from General Conditions shall have precedence.

18. MINORITY / DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

The City of Tuscaloosa has voluntarily adopted a Minority / Disadvantaged Business Enterprise ("MBE/DBE/WBE") Program called Tuscaloosa Builds, which is designed to encourage the participation and development of minority and disadvantaged business enterprises and to promote equal business opportunities to the fullest extent allowed by state and federal law. To learn more about this program, visit <http://www.tuscaloosarecovery.com/blog/category/tuscaloosa-builds/>.

** PRELIMINARY BID TAB WILL BE POSTED ON THE CITY'S WEBSITE ONCE AVAILABLE.

SPECIAL CONDITIONS

The General Conditions of Invitations to Bid and any Special Conditions stated shall be considered as part of the specifications of the bid.

Reference to brand names and numbers is descriptive, but not restrictive, unless otherwise specified. Bids on equivalent items meeting the standards of quality thereby indicated will be considered, providing the bid clearly describes the article offered and indicates how it differs from the referenced brands. **Descriptive literature and manufacturer's specifications plus any supplemental information necessary for comparison purposes must be submitted with the bid or the bid on that item will be rejected.** Reference to literature submitted with a previous bid or on file with the Division of Purchasing will not satisfy this requirement.

The burden is on the bidder to demonstrate that the item bid is equivalent to the item specified in the ITB. Any exceptions taken to any item(s) must be fully explained in written detail on bidders' letterhead and attached to the bid when submitted.

Awards shall be made or contracts entered into with the lowest responsible bidder(s) meeting all specifications and terms and conditions established by the Division of Purchasing. The Division of Purchasing reserves the right to determine the lowest responsible bidder on the basis of an individual item or group of items. Delivery dates may be a factor in awards.

NOTE: Local Bidder Preference WILL NOT be used to determine bid awards. Please keep this in mind when preparing bids.

Questions concerning the bid process should be directed to David Coggins at (205) 248-5186 or dcoggins@tuscaloosa.com (e-mail is preferred). Questions concerning Specifications should be directed to Michelle Jones at (205) 248-5953

Any addendums issued for this bid will be posted on the City Of Tuscaloosa website at <http://www.tuscaloosa.com/e-services/bids>. It is the responsibility of the bidder to check this page for any addendums before submitting their bid.

The term of this contract shall be for a period of one (1) year, from October 1, 2016 through September 30, 2017.

Vendor to submit the following:

- Signed Special Conditions page
- Any necessary descriptive literature and/or specifications information as outlined above, in Specifications, and/or elsewhere in this document
- Completed and signed Bidder's Response Form
- Signed Bid Item Work Sheets with submitted bids

NOTE: Sheet(s) submitted without Company Name & Signature WILL NOT be considered for bid award.

Bid submissions shall be submitted in a sealed envelope and addressed to: David Coggins, Purchasing Agent, 2201 University Blvd., Tuscaloosa, Alabama. The name and address of the bidder, the date and hour of the bid opening and the Bid Title shall be placed on the outside of the envelope.

SPECIAL NOTES:

Awarded vendors not honoring bid prices for the entire contract period will be removed from the bidder mailing database for a period of twelve (12) months beginning from the date of the new contract award date. The vendor will not be allowed to do business under a City contract during this period.

The successful bidder shall guarantee full delivery within 30 days of receipt of order. If deliveries are not made at the time agreed upon, the City reserves the right to cancel and purchase from the next lowest bidder. Consistent failure to meet delivery times will constitute grounds for the termination of the awarded section of the contract. This declaration can result in the rejection of any future bids submitted by the vendor.

VENDOR MUST SUBMIT AN ORIGINAL BID AND ONE COMPLETE COPY OR THE BID MAY BE REJECTED.

MATERIAL SPECIFICATIONS

PIPE, COPPER

All copper pipe must be equivalent to the following:

- Pipe to be seamless.
- Must conform to ASTM Specification B-88-62 "TYPE K SOFT"
- ¾" & 1" pipe must be in 60 foot rolls only.
- 2" pipe to be in 40 or 60 foot rolls as requested by purchaser.
- Price must be on a per foot basis.

PIPE, PVC PRESSURE

All PVC Pipe must be equivalent to or better than the following:

- SDR 21 - CL 200 PVC
- ASTM - D1784-69 PVC Resins
- ASTM - D72.2-67 for PVC Pipe
- P.S. - 22-70 for PVC Pipe

All pipe to be in 20' lengths.

Gaskets are to be permanently attached to couplings.

Sufficient lubricant must be supplied with pipe.

Bids must be on a price per linear foot basis.

PIPE TO BE ORDERED AS NEEDED.

PIPE, DUCTILE IRON

Compression type joint, i.e. Fastite, Superbell-tite push-on, slip-on. Rated 350 psig working pressure.

Pipe must meet requirements of ANSI, AWWA C150/A21.50, and Federal Specifications.

Plain end of pipe should be beveled.

Pipe must come complete with gaskets and joint lubricant.

Pipe is to be cement lined in accordance with Specifications ASA A21.4 (AWWA C104) and/or Federal Specifications WW-P-421B.

Pipe is to have a bituminous seal coat.

Bids must be on a price per linear foot basis.

PIPE TO BE ORDERED AS NEEDED.

APPROVED MANUFACTURERS

American Cast Iron Pipe Co.

U. S. Pipe

FITTINGS, DUCTILE IRON, MECHANICAL JOINT

All fittings need to be Ductile Iron.

All fittings are to have mechanical joint ends.

Must meet all applicable terms and provisions of standards ANSI/AWWA C153/A21.53-84 and ANSI/AWWA C111 ANSI A21.11 (current revisions). Specifications and Federal Specifications WW-p-421B.

Plain ends of all mechanical joint fittings to be beveled.

All mechanical joint fittings 4 through 12 inch must be at least 250 psig working pressure.

All mechanical joint fittings size 14", 16", 24", 30" and 36" must be at least 250 psig working pressure.

Mechanical joint fittings are to have a bituminous seal coat.

NOTE: Fittings are to be compact or standard (NO LONG RADIUS) and consist of tees, bends, wye branches, crosses, reducers and increasers, etc., without accessories.

Bids must be on a price per fitting less accessories basis to be acceptable.

Bids for mechanical joint caps and plugs and restrained joint plugs must include center tapped with a 2 inch iron pipe thread tap.

FITTINGS TO BE ORDERED AS NEEDED.

Fittings shall be bid on less accessories and fitting shall be shipped less accessories.

APPROVED MANUFACTURERS:

- American Cast Iron Pipe
- Clow
- U. S. Pipe
- Tyler Union Foundry

FITTINGS, DUCTILE IRON, FLANGED JOINT

All fittings need to be Ductile Iron.

All fittings are to have flanged ends.

Must meet all applicable requirements to ANSI/AWWA C110/A21.10 (current revisions) Specifications and Federal Specifications WW-p-421B.

All flanged fittings 4 through 12 inch must be at least 250 psig working pressure.

All flanged fittings size 14", 16", 24", 30", and 36" must be at least 250 psig working pressure.

Flanges are to be ANSI Class 125 B16.1.

Flanged fittings are to come without accessories.

Flanged fittings are to have a bituminous seal coat.

NOTE: Fittings consist of tees, bends, wye branches, crosses, reducers and increasers, etc.

Bids must be on a price per fitting less accessories basis to be acceptable.

Bids for flanged joint caps and plugs must include center tapped with a 2 inch iron pipe thread tap.

Fittings to be compact or standard (NO LONG RADIUS)

FITTINGS ARE TO BE ORDERED AS NEEDED.

Fittings shall be bid on less accessories and fittings shipped less accessories.

APPROVED MANUFACTURERS

American Cast Iron Pipe

Clow

U. S. Pipe

Tyler Union Foundry

TAPPING SLEEVES, STAINLESS STEEL

Tapping sleeve shall be fabricated from 304 Stainless Steel or its equivalent, CF8 Cast Stainless Steel. They shall have a pass through bolt design and provide 360 deg. seal around the pipe. Sleeve shall be fully passivized to return the stainless steel to its highest corrosion resistance. Flange outlets shall be indexed per MSS-SP60 to accept tapping valve. The lugs shall have a pass-through bolt design, to avoid alignment problems and allow tightening from either side of the pipe. Bolts shall not be integrally welded to the sleeve. Bolting lug shall be triangular design with a maximum of 3" bolt center spacing. Bolting hardware shall be a minimum of 304 Stainless Steel.

Body: Stainless Steel, 18-8 Type 304

Flange: CF8 Cast Stainless Steel - equivalent to 18-8 Type 304 Stainless Steel. ANSI 150lb. Drilling, recessed for tapping valve per MSS-SP 60.

Bolts: Stainless Steel, 18-8 Type 304

Branch Outlet: Schedule 10 Stainless Steel Pipe

Gasket: Full circumferential Virgin Styrene-Butadiene Rubber (SBR) - Compounded for use with water, salt solutions, mild acids and bases. Per ASTM D-2000 M4AA 607. Standard temperature range from -40 deg. to 150 deg. F (-40 deg. to 65 deg. C) constant, maximum intermittent 180 deg. F (82 deg. C).

Sleeve pressure rating with standard CF8 cast stainless steel flange: Sleeves 4" – 24" nominal pipe sizes: 175 PSI working pressure, hydrostatic test pressure of 218 PSI (pressures per ANSI/AWWA C207 Standard).

APPROVED MANUFACTURERS:

JCM

Ford Meter Box

Romac

TAPPING SLEEVES, MECHANICAL JOINT DUCTILE IRON

Tapping sleeves shall be ductile iron construction meeting ASTM A536. Sleeve shall be coated with asphaltic varnish in compliance with NSF-61. Tapping sleeves shall be of the mechanical joint type. The mechanical joint ends shall be sealed by neoprene gaskets, compressed tightly around mains by means of a second flange or gland bolted to the end flange of the sleeve. Gasket and its seat inside the end flange of the sleeve shall be tapered or wedge shaped. The gasket shall be totally confined to prevent cold-flow when gland is tightened.

Tapping sleeves shall be suitable for use on pipe with AWWA specifications as follows: C102-53, C105-53, and C108-53.

Tapping sleeves shall have a working pressure of 200 psig.

The side outlet or branch connection outlet shall be machined and with a machined recess to match the machined projection of the tapping valve flange to assure correct alignment.

The longitudinal or side gaskets shall be of neoprene and shall be confined in a cored groove.

APPROVED MANUFACTURERS:

American 2800-C
Mueller H-615

GLANDS, MEGALUG

Mechanical joint restraint shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases.

Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536-80. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices. The mechanical joint restraint device shall have a working pressure of at least 250 psig with a minimum safety factor of 2:1 and shall be EBAA Iron, Inc., MEGALUG, UNIFLANGE or approved equal.

APPROVED MANUFACTURERS:

EBAA Iron, Inc.
Tyler Union Foundry
Sigma
Ford Meter Box

COUPLINGS FOR 4" - 36" PIPE

Couplings should meet the specifications set forth in AWWA Standard C219

Followers shall meet Ductile Iron ASTM A536 or Steel ASTM A36
Middle ring shall meet Ductile Iron ASTM A536 or Steel ASTM A36

Middle ring lengths stated for Items 900 - 929 are ***minimum acceptable lengths***.

Gaskets Styrene Butadiene Rubber (SBR) for water in accordance with ASTM D2000

Bolts minimum 5/8 inch and shall meet AWWA C111, ANSI A21.11 or ASTM A242

Minimum corrosion resistant shop coat NSF 61 approved

APPROVED MANUFACTURERS:

Ford Meter Box
JCM Industries
Romac Industries

VALVES, PRESSURE REGULATING

Sizes - 3/4", 1", 1 1/2" and 2".

Pressure reducers to have spring range of 24 - 75 psi.

Pressure reducers are to be preset at 50 psi.

Shall have all bronze body and bell housing.

Shall have a built in by-pass to prevent buildup of excessive system pressure caused.

Shall be serviceable in-line.

Shall be Female Iron Pipe thread by Female Iron Pipe Thread (FIP x FIP).

APPROVED MANUFACTURERS:

Watts

Wilkins

VALVES, GATE 2" – 3" (Ductile Iron Cast)

All gate valves must comply with the latest revision of AWWA Standard C-509/C-515 for Water Works Distribution Resilient Seat Valves.

All gate valves must have "O" Ring seals.

All gate valves must open left (counterclockwise) with 2" square operating wrench nut.

All gate valves should have a minimum working pressure of 200 psi and prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to the requirements of ANSI/AWWA C-509/C-515 (and UL/FM where applicable).

All gate valves to be non-rising stem.

All 2" and 3" gate valves are to have threaded ends in accordance with ASME B16.4, Class 125.

The stem must be capable of being removed without disassembly of the valve and shall interchange with all valves of the same nominal pipe size, as produced by each representative manufacturer.

The valve shall be coated with an applied fusion-bonded epoxy coating in accordance with AWWA C-550 and be NSF 61 certified.

APPROVED MANUFACTURERS

American Cast Iron Pipe

Clow

U. S. Pipe

M & H Valve Company

Mueller

VALVES, GATE 4" AND LARGER (Ductile Iron Cast)

All gate valves must comply with the latest revision of AWWA Standard C-509/C-515 for Water Works Distribution Resilient Seat Valves.

All gate valves must have "O" Ring seals.

All gate valves must open left (counterclockwise) with 2" square operating wrench nut.

All gate valves should have a minimum working pressure of 200 psi and prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to the requirements of ANSI/AWWA C-509/C-515 (and UL/FM where applicable).

All gate valves to be non-rising stem.

All gate valves to have mechanical joint ends or flanged ends.

The stem must be capable of being removed without disassembly of the valve and shall interchange with all valves of the same nominal pipe size, as produced by each representative manufacturer.

The valve shall be coated with an applied fusion-bonded epoxy coating in accordance with AWWA C-550 and be NSF 61 certified.

APPROVED MANUFACTURERS

- American Cast Iron Pipe
- Clow
- U. S. Pipe
- M & H Valve Company
- Mueller

VALVES, TAPPING

All tapping valves shall comply with AWWA Specifications C-509 for resilient seat valves and the following design specifications.

All tapping valves are to be non-rising stem - open left.

Tapping valves 12 inch and smaller shall have a working pressure of 200 psig and tested at 400 psig and tap valves 14" and larger shall have a working pressure of 150 psig and test pressure of 300 psig.

All tapping valves shall be furnished with "O" Ring seals.

Tapping valves shall have an outlet end connection of the mechanical joint type. Inlet ends shall have an inlet flange for attaching to a sleeve or cross. A machine projection on this flange shall be made with a machined recess in the tapping sleeve outlet flange to assure correct alignment.

Seat opening of tapping valves shall be larger than the nominal size to permit full diameter cuts to be made.

All valves to have tap sleeve ends complete with bolts, glands and 1/8" thick rubber gaskets.

APPROVED MANUFACTURERS

- American Cast Iron Pipe
- Clow
- U. S. Pipe
- M & H Valve Company
- Mueller

VALVES, BRONZE GATE (Stockham B103 or equal)

Valves to have non-rising stem - inside screw type solid wedge disc.

Valve Body, bonnet and disc to be bronze meeting ASTM Specifications B-62.

Packing Nut and Stuffing Box to be bronze meeting ASTM Specifications B-584.

Packing Gland to be brass.

Hand wheel to be malleable iron meeting ASTM Specifications A-197.

Hand wheel nut to be steel.

Full port opening - disc to recess completely into bonnet.

Packing to be non-asbestos Kevlar with Teflon.

APPROVED MANUFACTURERS:

Stockham

Crane

Milwaukee

VALVE BOXES

Valve boxes shall be adjustable from 18" to 24" and 24" to 36".

Valve boxes shall be made from cast iron.

Valve boxes tops shall have the word "water" cast into the top.

The inside diameter shall be at least 5 1/4".

The adjustable top shall be the screw type.

The valve box top must have 2 slots for hooks to open top.

The bottom section must have a flair bottom to prevent settling.

Valve boxes shall be shipped fully assembled.

APPROVED MANUFACTURERS:

Opelika Foundry #4905

Tyler-Union Foundry #6850

Bingham & Taylor #4905

BACKFLOW PREVENTERS

All types, General Specifications

ALL BACKFLOW PREVENTERS 3" AND LARGER SHALL COME COMPLETE WITH RESILIENT SEAT (RS) GATE VALVES.

Shall have replaceable seats.

Shall be serviceable in-line.

Backflow preventers shall consist of two independently operating, internally loaded check valves.

All Backflow Preventers/Check Valve assemblies shall conform to applicable sections of the ANSI/AWWA, ASSE and USC Foundation for Cross-Connection Control and Hydraulic Research.

DOUBLE CHECK VALVE BACKFLOW PREVENTER 2-1/2" – 12"

Double Check Valve Backflow Preventers shall conform to ANSI/AWWA C510, and ASSE 1015, latest revisions. All assemblies shall be approved by both ASSE and the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research, and shall be supplied only in approved configurations, including shut-off valves.

Double Check Valve Backflow Preventers shall consist of two line-sized independently acting check valves, internally force loaded to a

normal closed position, designed and constructed to operate under intermittent or continuous pressure conditions. Body shall be stainless steel and contain necessary test cocks.

Unless specified otherwise at the time of order, all assemblies shall be supplied with non-rising stem gate valves.

Approved Manufacturers/Models (or Part Numbers)

1. Ames Series 2000SS
2. Conbraco DCLF 4A
3. Watts 774
4. Wilkins 350AST

DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER 2-1/2" – 12"

Double Detector Check Valve Backflow Preventers shall conform ANSI/AWWA C510, and ASSE 1015 and 1048, latest revisions. All assemblies shall be approved by both ASSE and the University of Southern California Foundation for Cross-CoMction Control and Hydraulic Research, and shall be supplied only in approved configurations, including shut-off valves.

The Double Detector Check Backflow Preventer shall be composed of a line-sized approved Double Check Backflow Preventer assembly with piping for a by-pass water meter and a meter-sized approved Double Check Backflow Preventer. All assemblies shall be supplied complete. By-pass meter will be a standard 5/8" x 3/4" meter. By-pass piping shall be constructed of brass and shall include properly spaced meter nut connections for insertion of water meter with no modifications. Assembly shall be designed such that by-pass meter shall register all low flow demands of 3 CF or less, with static pressure drop across by-pass assembly at least 2 psi less than static pressure drop across the line size assembly in order to assure accurate measurement of low flow demands. Check valves should be accessible from the top of the device for maintenance without removing the device from in-line. All assemblies shall be supplied with O.S. & Y. gate valves.

Approved Manufacturer/Models (or Part Numbers)

1. Ames 3000SS
2. Conbraco DCDA2LF 4A
3. Watts 774DCDA
4. Wilkins 350ASTDA

REDUCED PRESSURE ZONE DOUBLE CHECK VALVE BACKFLOW PREVENTER

Reduced Pressure Zone Double Check Valve Backflow Preventers ANSI/AWWA C511, and ASSE 1013, latest revisions. All assemblies shall be approved by both ASSE and the University of Southern California Foundation for Cross-CoMction Control of Hydraulic Research, and shall be supplied only in approved Configurations, including shut-off valves.

Reduced Pressure Zone Double Check Valve Backflow Preventors shall consist of two line-sized independently acting check valves, internally force loaded to a normal closed position, and separated by an intermediate chamber (or zone) in which there is a hydraulically operated relief means for venting atmosphere, which is internally force loaded to a normally open position.

Unless specified otherwise at the time of order, all assemblies shall be supplied with non-rising stem gate valves.

- 1-1/2" & 2" assemblies shall be constructed of Lead-Free Brass.
- 2-1/2" – 12" assemblies shall have stainless steel bodies.

Approved Manufacturers/Models (or Part Numbers)

- | 1-1/2" & 2" | 2-1/2" – 12" |
|--------------------|--------------------|
| 1. Ames 4000B | 1. Ames 4000SS |
| 2. Conbraco RPLF4A | 2. Conbraco RPLF4A |
| 3. Watts LF009 | 3. Watts 994 |
| 4. Wilkins 375XL | 4. Wilkins 375AST |

DUAL CHECK VALVE BACKFLOW PREVENTER

Dual Check Valve Backflow Preventers shall conform to ANSI/AWWA C506, and ANSI/ASSE 1024, latest revisions.

Dual Check Valve Backflow Preventers shall consist of two independently acting poppet type check valves, internally force loaded to a normal closed position, designed and constructed to operate under intermittent or continuous pressure conditions. Unless otherwise specified, Dual Check Valves shall be of the straight-body design and shall be designed such that check assemblies may be field replaced without removal of valve body from line. Rated working pressure for Dual Check Valves shall be a minimum of 175 psi.

Unless specified otherwise at the time of order, Dual Check Valves shall show female iron pipe threads on inlet connections as well as outlet (FIP x FIP).

Approved Manufacturers/Models (or Part Numbers)

<u>3/4" – 1"</u>	<u>1-1/2" – 2"</u>
1. A.Y. McDonald 711	1. Ames LF2000B
2. Conbraco DUCLF4N	2. Conbraco DCLF4A
3. Watts LF7	3. Watts LF007
4. Wilkins 700XL	4. 350XL

IMPORTANT INFORMATION: No-Lead Brass Fittings

a. All fittings and valves shall be manufactured in accordance with AWWA Standard C-800, latest revision, and as further specified in these technical specifications.

a.i Exception: Any brass part of the fitting or valve in contact with potable water shall be made of a "No-Lead Brass", defined for this specification as UNS Copper Alloy No. C89520 or C89833 in accordance with the chemical and mechanical requirements of ASTM B584 and AWWA C-800. This "No-Lead Brass" alloy shall not contain more than nine one hundredths of one percent (0.25% or less) total lead content by weight.

a.ii Any Brass part of the fitting or valve not in contact with potable water shall be made of 85-5- 5-5 brass as defined for this specification as UNS Copper Alloy C83600 per ASTM B62, ASTM B584 and AWWA C-800.

MALE IRON PIPE X COMPRESSION ADAPTERS

All adapters shall fully comply with the AWWA C800 specifications.

All adapters shall have FULL 3/4" or 1" opening.

Adapters shall have compression nut with gripper ring and gasket providing a water tight seal by compressing of gasket around tubing and compressing the gripper ring providing high pull out resistance.

Compression nuts requiring a split type clamp with screw or bolt will not be accepted.

CURB STOPS

Curb valves shall be of the closed bottom design and sealed against external leakage at the top and port by utilizing non-adjustable resilient seals. Shut off shall be affected by a resilient pressure actuated seal placed in the key or plug as to completely enclose the inlet port flow way in the closed position. All curb valves shall have the open/closed positions controlled by check lugs which are integral parts of the key and the body. Curbs Stops shall be of a 300 psi rating.

Curb Stops shall have compression nut with gripper ring and gasket providing a water tight seal by compressing gasket around tubing and compressing the gripper ring providing high pull out resistance.

Compression nuts requiring a split type clamp with screw or bolt will not be accepted.

Valves for the respective installation (s) must have the following laying lengths to facilitate change-outs at a minimum of cost and time:

FIP X FIP VALVES	SIZE	LENGTH (IN.)
	3/4"	3.21" + or - 0.0625
	1"	3.96" + or - 0.0625
COMPRESSION X FIP	3/4"	.84" + or - 0.0625
	1"	4.35" + or - 0.0625

NOTE: ALL CURB VALVE OPENINGS SHALL BE **FULL PORT OPENING**.

(3/4" X 3/4" X 3/4") AND (1" X 1" X 1")

Curb Stops shall be Ball Valve type with Lock Wing.

METER COUPLINGS

All meter couplings shall be fully machined both inside and out, meeting ASTM B-62, with each component easily interchanging with all existing meters/meter couplings. Laying lengths shall be specified at time of ordering or the 2 1/2" length shall be supplied unless notified.

NOTE: Meter couplings to be full opening.

3/4" coupling to have 3/4" inside diameter opening.

1" coupling to have 1" inside diameter opening.

CORPORATION STOP

All components of the corporation stops shall be manufactured of certified ingot, conforming to AWWA C-800.

The stem and retaining nut shall be so designed that failure from over-tightening of the nut results in thread stripping rather than stem fracture.

Corporation stops shall be of a 300 psi rating.

Corporation Stops shall have compression nut with gripper ring and gasket providing a water tight seal by compressing of gasket around tubing and compressing the gripper ring providing high pull out resistance

Compression nuts requiring a split type clamp with screw or bolt will not be accepted.

Corporation stops shall be **ball valve** type.

ALL CORPORATION STOPS TO BE **FULL PORT OPENINGS**

METER, WATER - ELECTROMAGNETIC

5/8" - 1" ELECTROMAGNETIC WATER METERS

Meters shall be electromagnetic flow measurement technology with an operating range as shown below in **Specifications**.

Must conform to the following standards as most recently revised: American Water Works Standard C-700 and C-710 for accuracy and pressure loss requirements; NSF Standard 61 Annex G.

Construction

External housing shall be thermal plastic. The encased measuring device shall be comprised of a polyphenylene sulfide alloy flow tube with externally-threaded spud ends. Embedded in the flow tube shall be magnetic flow sensors and a replaceable strainer screen. The register shall be all electronic, programmable, and hermetically sealed with a tempered glass cover. The meter system shall have a twenty

(20) year life cycle, along with a twenty (20) year battery life guarantee. Meter must prevent removal of the register and have a means to indicate any attempt to tamper with the meter.

Electronic register

- Must read in cubic feet
- Must have AMR output from a single register
- Must be supplied with three AMR connections (red, green, black wires)
- Connection between register and meter transceiver unit shall be accomplished with use of all three terminals & Touch Coupler connection (or approved equivalent)
- AMR output data format shall be 7-bit ASCII (American Standard Code of Information Interchange) digital, plus an even parity bit
- Upon AMR interrogation the meter shall transmit a reading (# of digits customer specified) and an eight (8) digit register identification number which is to be factory programmed as to protect the system integrity and eliminate possible field programming duplication
- AMR resolution units fully programmable
- Highest AMR Resolution Required: 5/8" – 1" = .1 (Hundredths) Cubic Feet & 4" – 8" = 1 (Single) Cubic Foot
- Integral data logging capability
 - 1056 data points minimum
 - Interval available: 15 minutes, hourly, or daily
 - Logged information to include date, time, hourly max flow, hourly consumption, max flow, average flow, average consumption, and total consumption
- Large, easy-to-read LCD display that includes battery life and empty pipe indicators
- 20-year battery life and accuracy guarantee

Performance

Meters shall operate up to a working pressure of 200 pounds per square inch, without leakage or damage to any parts. Accuracy shall not be affected by variations in pressure up to 200 psi. The meter shall be accurate and perform for twenty (20) years from date of shipment.

AMR/AMI Systems

Meter must be compatible with current Sensus (or approved equivalent) AMR/AMI systems.

Specifications

Service	Measurement of cold water with flow in one direction only
Normal Operating Flow Range (100% +/- 1.5% of actual throughput)	5/8" (DN 15mm) size: 0.11 to 25 gpm (0.02 m ³ h to 5.7 m ³ h) 3/4" (DN 20 mm) size: 0.11 to 35 gpm (0.02 m ³ h to 8.0 m ³ h) 1" (DN 25mm) size: 0.4 to 55 gpm (0.09 m ³ h to 12.5 m ³ h)
Low Flow Registration (95%-101.5%)	5/8" (DN 15mm) size: 0.03 gpm (0.007 m ³ h) 3/4" (DN 20 mm) size: 0.03 gpm (0.007 m ³ h) 1" (DN 25mm) size: 0.11 gpm (0.025 m ³ h)
Maximum Pressure Loss	5/8" (DN 15mm) size: 4 psi at 15 gpm (0.3 bar at 3.4 m ³ h) 3/4" (DN 20 mm) size: 2 psi at 15 gpm (0.1 bar at 3.4 m ³ h) 1" (DN 25mm) size: 2 psi at 25 gpm (0.1 bar at 5.7 m ³ h)
Maximum Operating Pressure	200 psi (13.8 bar)

Guarantee

All meters will be guaranteed to perform accuracy levels above for a period of 20 years from the date of shipment.

Intent

Subject meter specifications are designed to establish minimum guidelines for selecting an extremely critical metering device. Areas of concern to be evaluated in the selection process include, but are not limited to, ease of installation, operational features and benefits, readability, and future system maintenance expense. A design which reflects longevity of proper operation in all elements and high degree of sustained accuracy within the entire range of the meter assembly is to be considered mandatory. Enhanced accuracy levels and performance are desired and will not be compromised.

METER, WATER – TURBINE**1 1/2" - 10" TURBINE WATER METERS**

The meter package shall meet or exceed all requirements of ANSI/AWWA Standard C701 for Class II turbine meter assemblies as well as ANSI/AWWA C700 Residential Standard. Each meter assembly shall be performance tested to ensure compliance.

Maincases

The meter main case shall be of epoxy coated ductile iron composition. The epoxy coating shall be provided as standard fusion-bonded and adhere to NSF for No-lead regulation compliance.

A built-in test port is mandatory. Must be available in these various laying length options:

1 1/2" – 13", 2" – 15 1/4" & 17", 3" – 17" & 19", 4" – 20" & 23", 6" – 24" & 27", 8" – 31 1/8", 10" – 41 1/8"

Performance

The meter assembly shall have performance capability of continuous operation up to the rated maximum flows as listed below without affecting long-term accuracy or causing any undue component wear. The meter assembly shall also provide a 25% flow capacity in excess of the maximum flows listed for intermittent flow demands. Maximum headloss through the meter / strainer assembly shall not exceed those listed in the **Operating Characteristics** table per meter size.

Measuring Chamber

The measuring chamber shall consist of a measuring element, removable housing, and an all-electronic register. The measuring element shall be mounted on a horizontal, stationary stainless steel shaft with sleeve bearings and be essentially weightless in water (only one moving part). The measuring element comes integrated with the advanced Floating Ball Technology design. The measuring chamber shall be capable of operating within the above listed accuracy limits without calibration when transferred from one main case to another of the same size. The measuring shall be so configured to capture all flows as specified below, without the requirement of an automatic valve. Meters with manual calibration adjusters will not be accepted.

Operating Characteristics

Meter Size	Low Flow (95% Min)	Operating Range (98.5-101.5%)	Intermittent Flows (98.5-101.5%)	Pressure Loss (Not to Exceed)
1 1/2"	0.75 gpm	1.25 to 160 gpm	200 gpm	6.9 psi @ 160 gpm
2"	1.0 gpm	1.5 to 200 gpm	250 gpm	7.0 psi @ 200 gpm
3"	1.5 gpm	2.5 to 500 gpm	650 gpm	5.1 psi @ 500 gpm
4"	2.0 gpm	3.0 to 1000 gpm	1250 gpm	8.7 psi @ 1000 gpm
6"	2.5 gpm	4.0 to 2000 gpm	2500 gpm	8.2 psi @ 2000 gpm
8"	4.0 gpm	5.0 to 3500 gpm	4700 gpm	5.1 psi @ 3500 gpm
10"	5.0 gpm	6.0 to 5500 gpm	7000 gpm	7.2 psi @ 5500 gpm

Direct Magnetic Drive System

The direct magnetic drive shall occur between the motion of the measuring element blade position and the electronic register. The direct drive system with Floating Ball Technology is designed to extend service life, enhance low flow sensitivity and provide extended flow capacity and overall accuracy of the meter assembly. Any and all additional intermediate, magnetic or mechanical, drive couplings or gearing are not acceptable.

Electronic Register

- Must read in cubic feet
- Must have AMR & pulse outputs from a single register
- Must be supplied with three AMR connections (red, green, black wires)
- Connection between register and meter transceiver unit shall be accomplished with use of all three terminals & Touch Coupler connection (or approved equivalent)
- AMR output data format shall be 7-bit ASCII (American Standard Code of Information Interchange) digital, plus an even parity bit
- Upon AMR interrogation the meter shall transmit a reading (# of digits customer specified) and an eight (8) digit register identification number which is to be factory programmed as to protect the system integrity and eliminate possible field programming duplication
- AMR resolution units fully programmable
- Highest AMR Resolution Required: 1.5" – 3" = .1 (Tenths) Cubic Feet & 4" – 10" = 1 (Single) Cubic Feet
- Pulse output frequency fully programmable
- Highest Pulse Resolution Required: 1.5" – 3" = .1 (Tenths) Cubic Feet & 4" – 10" = 1 (Single) Cubic Feet
- Integral data logging capability
- Integral resettable meter accuracy testing feature
- Large, easy-to-read LCD display
- 10-year battery life guarantee

Maximum Operating Pressure

The meter assembly shall operate properly without leakage, damage, or malfunction up to a maximum working pressure of 200 pounds per square inch (psig).

Strainers

The meter strainer shall be integral and cast as part of the meter’s main case. The strainer’s screen shall have a minimum net open area of at least two (2) times the pipe opening and be a V-shaped configuration for the purpose of maintaining a full unobstructed flow pattern. The strainer body shall be a coated ductile iron fusion-bonded epoxy identical to that of the meter’s main case. All fasteners shall be stainless steel capable of maintaining the following static pressure ratings and physical dimensions:

Meter Size	Maximum Operating Pressure	Centerline to Strainer Base	Overall Length (Not to Exceed)
1 1/2"	200 psig	2 5/16"	13"
2"	200 psig	2 5/16"	17"
3"	200 psig	4 1/8"	19"
4"	200 psig	4 3/4"	23"
6"	200 psig	5 3/4"	27"
8"	200 psig	6 3/4"	30 1/8"
10"	200 psig	8 1/2"	41 1/8"

Straightening Vanes

A straightening vane assembly is mandatory and shall be positioned directly upstream of the measuring element. The straightening vane assembly shall be an integral component of the measuring chamber.

Connections

Flanges for the 1-1/2" and 2" size meter assemblies shall be of the 2-bolt oval flange configuration. The 3", 4", 6", 8" & 10" size meter assemblies shall have flanges of the Class 125 round type, flat faced and shall conform to ANSI B16.1 for specified diameter, drilling and thickness.

Certifications and Markings

All sizes of meter packages shall display the sizes, model, manufacturer name, and direction of flow. Such display shall be cast on the side of the meter main case.

Guarantee

All meters will be guaranteed against defects in materials and workmanship for a period of one (1) year from the date of shipment.

Intent

Subject meter specifications are designed to establish minimum guidelines for selecting an extremely critical metering device. Areas of concern to be evaluated in the selection process include, but are not limited to, ease of installation, operational features and benefits, readability, and future system maintenance expense. A design which reflects longevity of proper operation in all elements and high degree of sustained accuracy within the entire range of the meter assembly is to be considered mandatory. Enhanced accuracy levels and performance are desired and will not be compromised.

METER, WATER – COMPOUND**1 1/2" - 10" COMPOUND WATER METERS**

The meter package shall meet or exceed all requirements of ANSI/AWWA Standard C701 and C702 for Class II compound and turbine meter assemblies. Each meter assembly shall be performance tested to ensure compliance.

Maincases

The meter main case shall be of epoxy coated ductile iron composition. The epoxy coating shall be provided as standard fusion-bonded and adhere to NSF for No-lead regulation compliance. A built-in test port is mandatory. Must be available in these various laying length options: 1-1/2" – 13", 2" – 15 1/4" & 17", 3" – 17" & 19", 4" – 20" & 23", 6" – 24" & 27", 8" – 31-1/8", 10" – 41-1/8"

Performance

The meter assembly shall have performance capability of continuous operation up to the rated maximum flows as listed below without affecting long-term accuracy or causing any undue component wear. The meter assembly shall also provide a 25% flow capacity in excess of the maximum flows listed for intermittent flow demands. Maximum head loss through the meter / strainer assembly shall not exceed those listed in the following table per meter size.

Measuring Chamber

The measuring chamber shall consist of a measuring element, removable housing, and an all-electronic register. The measuring element shall be mounted on a horizontal, stationary stainless steel shaft with sleeve bearings and be essentially weightless in water (only one moving part). The measuring element comes integrated with the advanced Floating Ball Technology design. The measuring chamber shall be capable of operating within the above listed accuracy limits without calibration when transferred from one main case to another of the same size. The measuring shall be so configured to capture all flows as specified above, without the requirement of an automatic valve. Meters with manual calibration adjusters will not be accepted.

Operating Characteristics

Meter Size	Low Flow (95% Min)	Operating Range (98.5-101.5%)	Intermittent Flows (98.5-101.5%)	Pressure Loss (Not to Exceed)
1 1/2"	0.25 gpm	0.5 to 160 gpm	200 gpm	6.9 psi @ 160 gpm
2"	0.25 gpm	0.5 to 160 gpm	200 gpm	4.3 psi @ 160 gpm
3"	0.5 gpm	1.0 to 400 gpm	500 gpm	3.2 psi @ 400 gpm
4"	0.75 gpm	1.5 to 800 gpm	1000 gpm	6.4 psi @ 800 gpm
6"	1.5 gpm	3.0 to 1600 gpm	2000 gpm	5.5 psi @ 1600 gpm
8"	2.5 gpm	4.0 to 2700 gpm	3400 gpm	4.0 psi @ 2700 gpm
10"	3.5 gpm	5.0 to 4000 gpm	5000 gpm	4.5 psi @ 4000 gpm

Direct Magnetic Drive System

The direct magnetic drive shall occur between the motion of the measuring element blade position and the electronic register. The direct drive system with Floating Ball Technology is designed to extend service life, enhance low flow sensitivity and provide extended flow capacity and overall accuracy of the meter assembly. Any and all additional intermediate, magnetic or mechanical, drive couplings or gearing are not acceptable.

Electronic Register

- Must Read in Cubic Feet
- Must have AMR & Pulse outputs from a single register
- Must be supplied with three AMR connections (Red, Green, Black wires)
- Connection between register and meter transceiver unit shall be accomplished with use of all three terminals & Touch Coupler connection (or approved equivalent)
- AMR output data format shall be 7-bit ASCII (American Standard Code of Information Interchange) digital, plus an even parity bit
- Upon AMR interrogation the meter shall transmit a reading (# of Digits Customer specified) and an eight (8) digit register identification number which is to be factory programmed as to protect the system integrity and eliminate possible field programming duplication
- AMR resolution units fully programmable
- Highest AMR Resolution Required: 1.5" – 3" = .1 (Tenths) Cubic Feet & 4" – 10" = 1 (Single) Cubic Feet
- Pulse output frequency fully programmable
- Highest Pulse Resolution Required: 1.5" – 3" = .1 (Tenths) Cubic Feet & 4" – 10" = 1 (Single) Cubic Feet
- Integral data logging capability
- Integral resettable meter accuracy testing feature
- Large, easy-to-read LCD display
- 10-year battery life guarantee

Maximum Operating Pressure

The meter assembly shall operate properly without leakage, damage, or malfunction up to a maximum working pressure of 200 pounds per square inch (psig).

Strainers

The meter strainer shall be integral and cast as part of the meter's main case. The strainer's screen shall have a minimum net open area of at least two (2) times the pipe opening and be a V-shaped configuration for the purpose of maintaining a full unobstructed flow pattern. The strainer body shall be a coated ductile iron fusion-bonded epoxy identical to that of the meter's main case. All fasteners shall be stainless steel capable of maintaining the following static pressure ratings and physical dimensions:

Meter Size	Maximum Operating Pressure	Centerline to Strainer Base	Overall Length (Not to Exceed)
1 1/2"	200 psig	2 5/16"	13"
2"	200 psig	2 5/16"	15 1/4"
3"	200 psig	4 1/8"	17"
4"	200 psig	4 3/4"	20"
6"	200 psig	5 3/4"	24"
8"	200 psig	6 3/4"	30 1/8"
10"	200 psig	8 1/2"	41 1/8"

Straightening Vanes

A straightening vane assembly is mandatory and shall be positioned directly upstream of the measuring element. The straightening vane assembly shall be an integral component of the measuring chamber.

Connections

Flanges for the 1-1/2" and 2" size meter assemblies shall be of the 2-bolt oval flange configuration. The 3" and 4" size meter assemblies shall have flanges of the Class 125 round type, flat faced and shall conform to ANSI B16.1 for specified diameter, drilling and thickness.

Certifications and Markings

All sizes of meter packages shall display the sizes, model, manufacturer name, and direction of flow. Such display shall be cast on the side of the meter main case.

Guarantee

All meters will be guaranteed against defects in materials and workmanship for a period of one (1) year from the date of shipment.

Intent

Subject meter specifications are designed to establish minimum guidelines for selecting an extremely critical metering device. Areas of concern to be evaluated in the selection process include, but are not limited to, ease of installation, operational features and benefits, readability, and future system maintenance expense. A design which reflects longevity of proper operation in all elements and high degree of sustained accuracy within the entire range of the meter assembly is to be considered mandatory. Enhanced accuracy levels and performance are desired and will not be compromised.

METER VAULTS

Panel vaults must be constructed of reinforced polymer concrete manufactured in molded structural shapes. The inner surface should consist of a heavy gel coat of polyester resin to provide a smooth non-abrasive working surface. The surface is to be backed by a double layer of heavy weave fiberglass type material.

Each enclosure shall include a one-piece collar to keep the enclosure square during backfill operation or after the ground settles.

The lid shall be a non-locking type with a logo "WATER" imprinted.

Cover shall have a service load of approximately 8,000# over a 10 inch square.

Meter vaults shall be CDR MODEL WA00(SIZE) - one piece only or approved equal.

Meter Vaults 3' x 5' x 3' and larger shall be delivered on individual pallets.

NO DOUBLE STACKED VAULTS WILL BE ACCEPTED.

METER BOXES

STANDARD METER BOXES

- PLASTIC METER BOX (10" X 15" X 10") WITH SOLID, DROP ON, C.I. LID

JUMBO METER BOXES

- JUMBO METER BOXES (13" X 20" X 12") WITH SOLID, DROP ON, C.I. LID

APPROVED MANUFACTURERS:

CARSON – MODEL 1220-12 OR APPROVED EQUAL

SOLID CAST IRON LIDS:

RUSSELL – MODEL LC2115

OR APPROVED EQUAL

METER BOXES FOR USE IN CONCRETE

- 11" X 18" X 12" METER BOX & D I LID WITH MAXIMUM READER(MSP)
- 13" X 24" X 12" METER BOX & D I LID WITH MAXIMUM READER(MSP)

APPROVED MANUFACTURER:

MID-STATES PLASTICS – MODEL BCF SERIES

OR APPROVED EQUAL

FIRE HYDRANT

Fire hydrants with M.J. Shoe and fire hydrants with Flanged Shoe will be bid.

All fire hydrants must have test pressure of 300 psig and working pressure of 175 psig.

All fire hydrants must have 4 1/2" valve opening.

All fire hydrants must have 3'0", 3'6", 4'0", 5'0" bury.

All fire hydrants must have two (2) 2 1/2 hose MOZ GA NS and One (1) 4 1/2" Pumper NOZ GA 4-556.

All fire hydrants must have 1 1/2" Pent open left operating nut (bronze).

All fire hydrants must have 6" M.J. or Flanged Shoe complete with gland and plain rubber gaskets.

All fire hydrants must comply with AWWA Specifications C-502.

All fire hydrants must be painted with fire hydrant red enameled paint completely.

All fire hydrants must be equipped with safety flange (break away traffic model).

All fire hydrants must be equipped with the following:

- Non-kinking chains on nozzle caps with rubber gasket seal or "O" ring seals.
- Double drain valves and double drain openings
- Bronze seat ring with compression type main valve
- Positive stop stem (eliminates over-travel of stem)

The hydrant main valve shall close with the pressure and all operating parts including the stem operating nut, hold down nut, valve top, drain ring, and seat shall be all-bronze.

Friction losses through the hydrant shall not exceed 5.0 psig at 1000 gpm through the pumper nozzle and 2.0 psig through two hose nozzles at 500 gpm, when simultaneously tested as outlined by AWWA C-502. Hydrants shall be such that easy installation of extensions can be accommodated either at the ground line or to connection, without shutting off the water.

All hydrants shall utilize integral cast flanges. The hydrant shall have a 6" inlet connection of the mechanical joint type, suitable for all classes of cast iron or ductile iron pipe, unless otherwise noted.

The bonnet assembly shall be one-piece and provided with an oil reservoir and lubrication system that automatically circulates lubricant to all threads and bearing surfaces each time the hydrant is operated. The system shall be completely sealed from the waterway and all external contaminants by two (2) O-ring stem seals and a weather shield attached directly to the operating nut. Hydrants shall be factory pre-filled with a lubricant suitable for a working temperature range of a -60 degree Fahrenheit to a +150 degree Fahrenheit.

The drain valve system shall be fully automatic and free of springs, toggles, or other devices, requiring field adjustment. Both the valve seat ring and drain ring shall have no less than two (2) openings that are forced-flushed during opening and closing cycles, but are sealed when the hydrant is fully open.

Hydrant shall have a three foot bury unless otherwise noted, with the painting and coating as prescribed in AWWA C-502, with the color painted red enamel above the ground line. The cast iron components below ground shall be asphalt varnish and subscribing to the current standards and practices.

Each proposal shall include an expanded view of the hydrant, which shows all parts and their proper locations. A price list of repair parts may be requested for review purposes.

APPROVED MANUFACTURERS AND MODELS

American Cast Iron Pipe Co.	Mark 73
Mueller Company	Centurion
M & H Valve Company	Model 129
Clow Valve Company	Medallion
U. S. Pipe Company	Metropolitan 250 M-94

WASTEWATER SUPPLIES

PIPE, P V C SEWER

All PVC Pipe sizes 4"-12" must be equivalent to or better than the following:

- SDR 26 - Heavy wall sewer pipe
- ASTM D-3034 and F-679
- ASTM F477 and ASTM D3139.
- ASTM D-3034 and ASTM D-2729 Standards
- All pipe to be in 14' lengths.

Gaskets are to be permanently attached to couplings.
Sufficient lubricant must be supplied with pipe.
Bids must be on a price per linear foot basis. PIPE TO BE ORDERED AS NEEDED.

FITTINGS, P V C SEWER

4" through 18" gasket SDR 26 HW sewer fittings shall be manufactured in accordance with ASTM D 3034 and F1336 standards.

Fitting gaskets shall comply with ASTM F 477 or ASTM F 913.

Fitting gaskets shall be locked firmly in position to prevent displacement.

4" through 8" fittings shall be injection molded from virgin PVC compound having a minimum cell classification of 12454-B in accordance with, and certified by the National Sanitation Foundation (NSF), to meet ASTM D 1784.

10" through 15" gasket SDR 26 sewer fittings may be injection molded or fabricated from pipe meeting the requirements of ASTM D 3034.

Gasket joints of all fitting sizes must comply with ASTM D 3212 Internal Pressure Test (exfiltration) and Vacuum Test (infiltration) at 5 degrees of gasket joint deflection. Gasket SDR 26 sewer fittings shall be certified by the National Sanitation Foundation (NSF) to meet ASTM D 3034.

FITTINGS ARE TO BE ORDERED AS NEEDED

STAINLESS STEEL SHIELDED/SHEAR RING REPAIR COUPLINGS

1.0 Flexible Transition Couplings These shall be manufactured from elastomeric materials that comply with the applicable requirements of ASTM C 1173 Standard Specification for Flexible Transition Couplings.

2.0 The **purpose** of Flexible Transition Couplings is to form a leak proof joint between sections plain end pipe or fittings of the same or different materials such as cast iron, clay, ductile iron, concrete and plastic pipe in sizes ranging from 1 1/4" up to 30" with larger sizes available upon request.

3.0 Stainless Steel Hose Clamps Hose clamps should be constructed of series 300 premium grade stainless steel, including the housing and screw to insure a positive seal ranging in size from 1 1/16" through 21". The stainless steel hose clamps shall be tested to withstand the required minimum torque of 60 in-lbs and maximum free running torque of 4 in-lbs as to the applicable requirements in ASTM C 1173.

4.0 Stainless Steel Bolt Clamps Bolt clamps should be constructed of 316 stainless steel, to include the band, nut and screw. The stainless steel bolt clamps range in sizes from 4" through 15" and meet the required minimum torque of 60 in-lbs and maximum free running torque of 4 in-lbs as to the applicable requirements in ASTM C 1173.

5.0 Stainless Steel Shear Ring Shear rings should be manufactured from all series 300 premium grade stainless steel construction to ensure extra rigidity and strength, and provide protection in even the most unstable ground conditions. The shear rings need to be available for several types of piping, in the most popular sizes. They should be available in thicknesses of 0.007" and 0.012". Shear ring couplings need to be manufactured to conform to the functional requirements of ASTM C 1173.

6.0 Sealing Resistance Flexible Transition Couplings shall show no visible leakage while under an internal hydrostatic pressure of 4.3 psi as to the applicable requirements of ASTM C 1173.

7.0 Durometer Hardness Testing Flexible Transition Couplings shall have a shore "A" durometer (hardness) of 50-75 as to the applicable requirements of ASTM C 1173 and ASTM Test Method D 2240.

8.0 Marking Flexible Transition Couplings shall be marked with the manufacturers name or trademark, or both. The type and size of pipe for which the coupling is intended of the manufacturer's product number shall be marked on or attached to each coupling as to the applicable requirements of ASTM C 1173.

APPROVED MANUFACTURERS:

Fernco
Mission Rubber
Indiana Seal

MANHOLE FRAME AND COVER

- MATERIAL: Grey Iron castings shall conform to the requirements of AASHTO M 105 Class 35 B or ASTM A 48 Class 35 B, unless otherwise specified.
- MANUFACTURING: Castings shall be manufactured true to pattern and component parts shall fit together in a satisfactory manner. They shall be smooth and well cleaned by shot blasting. Circular manhole rings, covers and grates shall be furnished with machined horizontal bearing surfaces unless otherwise specified.
- TOLERANCES: As cast dimensions may vary by plus or minus 1/16 inch per foot in critical areas relating to fit, load bearing capacity and drainage openings. Non-critical dimensions may be modified slightly to facilitate proper casting techniques, without notice. Notwithstanding these tolerances, all rings, covers, frames, grates, and curb hoods of the same nominal size are interchangeable.
- WEIGHTS: Casting weights are accurate, and shall be within plus or minus 5% of the specified weight.

NOTE: Frame and cover castings shall be clearly marked with the manufacturer’s name, product catalog number and Made in the USA in cast letters.

APPROVED MANUFACTURERS AND MODELS:
Vulcan Foundry No. V-1344-1
U.S. Foundry No. USF 420
with City of Tuscaloosa Logo or approved equal.

WATERTIGHT FRAME AND COVER

- MATERIAL: Grey Iron castings shall conform to the requirements of AASHTO M 105 Class 35 B or ASTM A 48 Class 35 B, unless otherwise specified.
- MANUFACTURING: Castings shall be manufactured true to pattern and component parts shall fit together in a satisfactory manner. They shall be smooth and well cleaned by shot blasting. Circular manhole rings, covers and grates shall be furnished with machined horizontal bearing surfaces unless otherwise specified.
- TOLERANCES: As cast dimensions may vary by plus or minus 1/16 inch per foot in critical areas relating to fit, load bearing capacity and drainage openings. Non-critical dimensions may be modified slightly to facilitate proper casting techniques, without notice. Notwithstanding these tolerances, all rings, covers, frames, grates, and curb hoods of the same nominal size are interchangeable.
- WEIGHTS: Casting weights are accurate, and shall be within plus or minus 5% of the specified weight.

NOTE: MANHOLE RIM AND COVER SHALL BE WATERTIGHT.
Approx. weight of frame and cover – 350 lbs. minimum.

APPROVED MANUFACTURERS AND MODELS:
East Jordan Iron Works No. V-2358
US Foundry No. 1452
Or approved equal.

PRECAST CONCRETE MANHOLES

(1.) Precast concrete manholes shall be of reinforced concrete sections manufactured in accordance with ASTM C 478, latest revision. In addition, the fine aggregate used shall be natural silica sand. The concrete when tested in compression shall be not less than 4,000 psi and absorption shall not exceed 9%. Minimum wall thickness of the manhole riser sections shall be as follows:

I.D. Wall th.

48" 5"

60" 6"

72" 7"

84" 8"

96" 9"

Cone sections shall be made with minimum wall thicknesses of 5" at the bottom and 8" at the top. The minimum thickness of the bottom slab shall be 6" for all manhole diameters. Manhole diameters to be used shall be as indicated on the plans.

(2.) Joints between the manhole sections will be made with offset joints with rubber gaskets or preformed butyl sealants. Rubber gaskets shall meet the requirements of ASTM C 443, latest revision. Sealants shall meet ASTM C 990 and AASHTO M-198B.

(3.) Steel reinforcement shall conform to ASTM A-82 or A-185. The circumferential reinforcement may consist of either one or two lines of steel. The total steel area per vertical foot shall not be less than 0.0025 times the inside diameter in inches.

(4.) For purposes of handling and placement: The 48" diameter manholes shall have lift inserts which shall be cast in each section. Two lift holes shall be cast in sections larger than 48" in diameter.

(5.) Openings for inlet and discharge sewer pipes shall be provided in the manhole base section and in the riser section for drop-manholes. Openings shall be at positions and elevations as indicated on the plans or predetermined in the field, and may be cast into the manhole wall or mechanically cored on completed sections. Where pipes are to be sealed into the manhole wall with mortar, openings shall be large enough to permit such variations in both horizontal and vertical position as field conditions may dictate. Cored openings shall be sized to accommodate the flexible manhole sleeve specified for the project.

A.) Mortar for sealing pipes into manholes shall be a non-shrink or hydraulic cement grout.

B.) Flexible manhole connectors suitable for use in precast or cored openings utilizing pre-molded shapes positioned with expansion rings shall comply with the requirements of ASTM C 923. Flexible connectors shall be installed as recommended by the manufacturer.

(6.) Manhole steps shall be reinforced plastic step complying with the requirements of ASTM C 478.

APPROVED MANUFACTURERS:

Hanson Pipe & Products
 Sherman-Dixie Concrete Industries
 Foley Products
 Or approved equals.

BID ITEM WORK SHEETS

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	COPPER PIPE			
100	3/4" COPPER PIPE TYPE K SOFT	11770		
101	1" COPPER PIPE TYPE K SOFT	5650		
	RED BRASS PIPE			
105	2" RED BRASS PIPE (SEAMLESS) (12' LONG)	614		
	P.V.C. PIPE			
115	2" PVC PIPE, CLASS 200	22960		
118	6" PVC PIPE, CLASS 200	1274		
	DUCTILE IRON PIPE - CLASS 50			
125	12" CLASS 50 - D. I. PIPE	5748		
127	16" CLASS 50 - D. I. PIPE	1180		
128	24" CLASS 50 - D. I. PIPE	80		
130	36" CLASS 50 - D. I. PIPE	482		
	DUCTILE IRON PIPE - CLASS 51 AND 52			
131	4" CLASS 51 - D. I. PIPE	1440		
132	6" CLASS 52 - D. I. PIPE	10820		
133	8" CLASS 52 - D. I. PIPE	18240		
134	10" CLASS 52 - D. I. PIPE	108		
136	14" CLASS 52 - D. I. PIPE	0		
137	16" CLASS 52 - D. I. PIPE	0		
	MECHANICAL JOINT TEES			
200	4" Run x 4" Branch M. J. Tees	3		
201	6" Run x 4" Branch M. J. Tees	10		
202	6" Run x 6" Branch M. J. Tees	33		
203	8" Run x 4" Branch M. J. Tees	18		
204	8" Run x 6" Branch M. J. Tees	45		
205	8" Run x 8" Branch M. J. Tees	28		
210	12" Run x 4" Branch M. J. Tees	1		
211	12" Run x 6" Branch M. J. Tees	26		
212	12" Run x 8" Branch M. J. Tees	7		
214	12" Run x 12" Branch M. J. Tees	3		
215	16" Run x 4" Branch M. J. Tees	0		
216	16" Run x 6" Branch M. J. Tees	1		
217	16" Run x 8" Branch M. J. Tees	0		
218	16" Run x 10" Branch M. J. Tees	0		
219	16" Run x 12" Branch M. J. Tees	1		
220	16" Run x 16" Branch M. J. Tees	0		
	MECHANICAL JOINT REDUCERS			
240	6" x 4" Concentric M. J. Reducers	11		
241	8" x 4" Concentric M. J. Reducers	0		
242	8" x 6" Concentric M. J. Reducers	15		
246	12" x 4" Concentric M. J. Reducers	0		
247	12" x 6" Concentric M. J. Reducers	1		
248	12" x 8" Concentric M. J. Reducers	0		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	MECHANICAL JOINT BENDS			
332	4" 90 Degree Mechanical Joint Bend	11		
333	6" 90 Degree Mechanical Joint Bend	36		
334	8" 90 Degree Mechanical Joint Bend	2		
336	12" 90 Degree Mechanical Joint Bend	3		
337	16" 90 Degree Mechanical Joint Bend	1		
341	4" 45 Degree Mechanical Joint Bend	17		
342	6" 45 Degree Mechanical Joint Bend	63		
343	8" 45 Degree Mechanical Joint Bend	52		
345	12" 45 Degree Mechanical Joint Bend	28		
346	16" 45 Degree Mechanical Joint Bend	12		
350	4" 22 1/2 Degree Mechanical Joint Bend	5		
351	6" 22 1/2 Degree Mechanical Joint Bend	24		
352	8" 22 1/2 Degree Mechanical Joint Bend	31		
354	12" 22 1/2 Degree Mechanical Joint Bend	14		
355	16" 22 1/2 Degree Mechanical Joint Bend	5		
359	4" 11 1/4 Degree Mechanical Joint Bend	0		
360	6" 11 1/4 Degree Mechanical Joint Bend	11		
361	8" 11 1/4 Degree Mechanical Joint Bend	17		
363	12" 11 1/4 Degree Mechanical Joint Bend	2		
364	16" 11 1/4 Degree Mechanical Joint Bend	2		
	ANCHOR COUPLINGS			
368	4" X 12" ANCHOR COUPLINGS, DUCTILE IRON	34		
369	6" X 12" ANCHOR COUPLINGS, DUCTILE IRON	232		
370	8" X 12" ANCHOR COUPLINGS, DUCTILE IRON	87		
371	12" X 12" ANCHOR COUPLINGS, DUCTILE IRON	24		
	MECHANICAL JOINT TAPT PLUGS			
372	4" MJ Plug with 2" IPT Tap	32		
373	6" MJ Plug with 2" IPT Tap	31		
374	8" MJ Plug with 2" IPT Tap	34		
376	12" MJ Plug with 2" IPT Tap	6		
377	16" MJ Plug with 2" IPT Tap	1		
	MECHANICAL JOINT TAPT CAPS			
388	4" MJ Cap with 2" IPT Tap	5		
389	6" MJ Cap with 2" IPT Tap	7		
390	8" MJ Cap with 2" IPT Tap	5		
392	12" MJ Cap with 2" IPT Tap	9		
393	16" MJ Cap with 2" IPT Tap	2		
	FLANGED FITTINGS			
3404	3" 90 Degree Flanged Bend	8		
493	3" 90 Degree Flanged Bend	0		
494	3" 90 Degree Flanged Bend	11		
3405	3" Run x 3" Branched Flanged Tee	8		
	MECHANICAL JOINT SLEEVES			
537	4" Solid M.J. Sleeves	4		
538	6" Solid M.J. Sleeves	9		
539	8" Solid M.J. Sleeves	12		
540	12" Solid M.J. Sleeves	3		
541	16" Solid M.J. Sleeves	11		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	TAP SLEEVES, DUCTILE IRON			
600	4" X 4" TAP SLEEVE (American #AFC-2800 or equal)	0		
601	6" X 4" TAP SLEEVE (American #AFC-2800 or equal)	0		
602	6" X 6" TAP SLEEVE (American #AFC-2800 or equal)	1		
603	8" X 4" TAP SLEEVE (American #AFC-2800 or equal)	0		
604	8" X 6" TAP SLEEVE (American #AFC-2800 or equal)	0		
605	8" X 8" TAP SLEEVE (American #AFC-2800 or equal)	3		
609	12" X 4" TAP SLEEVE (American #AFC-2800 or equal)	0		
610	12" X 6" TAP SLEEVE (American #AFC-2800 or equal)	0		
611	12" X 8" TAP SLEEVE (American #AFC-2800 or equal)	0		
612	12" X 12" TAP SLEEVE (American #AFC-2800 or equal)	1		
617	16" X 4" TAP SLEEVE (American #AFC-2800 or equal)	0		
618	16" X 6" TAP SLEEVE (American #AFC-2800 or equal)	2		
619	16" X 8" TAP SLEEVE (American #AFC-2800 or equal)	3		
620	16" x 12" TAP SLEEVE (American #AFC-2800 or equal)	0		
621	16" X 16" TAP SLEEVE (American #AFC-2800 or equal)	1		
623	24" X 6" TAP SLEEVE (American #AFC-2800 or equal)	0		
624	24" X 8" TAP SLEEVE (American #AFC-2800 or equal)	2		
625	24 X 12 TAP SLEEVE (American #AFC-2800 or equal)	1		
	TAP SLEEVES, STAINLESS STEEL			
3350	6" X 4" SS TAP SLEEVE (JCM #432 or equal)(OD 7.05-7.40)	0		
3351	6" X 6" SS TAP SLEEVE (JCM #432 or equal)(OD 7.05-7.40)	0		
3352	8" X 4" SS TAP SLEEVE (JCM #432 or equal)(OD 8.98-9.37)	0		
3353	8" X 6" SS TAP SLEEVE (JCM #432 or equal)(OD 8.98-9.37)	2		
3354	8" X 8" SS TAP SLEEVE (JCM #432 or equal)(OD 8.98-9.37)	2		
3355	12" X 4" SS TAP SLEEVE (JCM #432 or equal)(OD 13.10-13.50)	1		
3356	12" X 6" SS TAP SLEEVE (JCM #432 or equal)(OD 13.10-13.50)	3		
3357	12" X 8" SS TAP SLEEVE (JCM #432 or equal)(OD 13.10-13.50)	1		
3358	12" X 12" SS TAP SLEEVE (JCM #432 or equal)(OD 13.10-13.50)	0		
3383	6" X 6" SS TAP SLEEVE DI(JCM #432 or equal)(OD 6.83-7.16)	17		
3386	4" X 4" SS TAP SLEEVE DI/CI(JCM #432 or equal)(OD 4.74-5.0)	0		
3421	6" X 4" SS TAP SLEEVE DI(JCM #432 or equal)(OD 6.83-7.16)	3		
	RESTRAINED GLANDS			
643	4" MEGALUG RESTRAINED GLAND, DUCTILE IRON	83		
644	6" MEGALUG RESTRAINED GLAND, DUCTILE IRON	534		
645	8" MEGALUG RESTRAINED GLAND, DUCTILE IRON	474		
3242	10" MEGALUG RESTRAINED GLAND, DUCTILE IRON	0		
646	12" MEGALUG RESTRAINED GLAND, DUCTILE IRON	209		
647	16" MEGALUG RESTRAINED GLAND, DUCTILE IRON	46		
	GATE VALVES			
707	24" GATE VALVES - (M.J.) (American Series 2500 RS or equal)	2		
708	30" GATE VALVES - (M.J.) (American Series 2500 RS or equal)	0		
709	36" GATE VALVES - (M.J.) (American Series 2500 RS or equal)	2		
710	4" GATE VALVES - (M.J.) (American Series 865 RS or equal)	20		
711	6" GATE VALVES - (M.J.) (American Series 865 RS or equal)	127		
712	8" GATE VALVES - (M.J.) (American Series 865 RS or equal)	60		
713	10" GATE VALVES - (M.J.) (American Series 865 RS or equal)	5		
714	12" GATE VALVES - (M.J.) (American Series 865 RS or equal)	22		
3277	16" GATE VALVES - (M.J.) (American Series 865 RS or equal)	5		
3414	3" GATE VALVES (FLANGED) (American Series 865 RS or equal)	14		
724	4" GATE VALVES (FLANGED) (American Series 865 RS or equal)	0		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
725	6" GATE VALVES (FLANGED) (American Series 865 RS or equal)	6		
726	8" GATE VALVES (FLANGED) (American Series 865 RS or equal)	0		
734	4" TAPPING VALVES (American Series 865 RS or equal)	5		
735	6" TAPPING VALVES (American Series 865 RS or equal)	29		
736	8" TAPPING VALVES (American Series 865 RS or equal)	9		
738	12" TAPPING VALVES (American Series 865 RS or equal)	3		
3301	16" TAPPING VALVES (American Series 865 RS or equal)	0		
3462	2" GATE VALVE (THREADED) (American Series 2500 RS or equal)	106		
	DETECTOR CHECK ASSEMBLY WITH O S & Y VALVES			
3325	2 1/2" DCDA OSY DETECTOR CHECK (38" long)	0		
3326	3" DCDA OSY DETECTOR CHECK (38" long)	0		
3320	4" 774 Double Check Detector Assembly (40" long)	4		
3300	6" 774 DOUBLE CHECK DETECTOR ASSEMBLY (38" long)	27		
3304	8" 774 DCDA OSY Detector Check Valve (52 1/2" long)	3		
	VALVE ACCESSORIES			
757	VALVE BOXES, 18" X 24" SCREW TYPE W/LIDS (5 1/4" DIA.)	536		
759	1" RISERS FOR 5 1/4" VALVE BOXES	76		
760	1 1/2" RISERS FOR 5 1/4" VALVE BOXES	165		
764	2" VALVE BOX RISERS FOR 7" VALVE BOX	31		
3439	5 1/4" VALVE BOX LID ONLY	29		
3431	6" RISER FOR 5 1/4" VALVE BOX	8		
	FLANGE PACKS			
3406	3" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	59		
800	4" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	30		
801	6" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	163		
802	8" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	18		
803	10" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	0		
804	12" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	2		
805	16" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	10		
806	24" FLANGE PACK (BOLTS, NUTS, & FULL FACE GASKET)	0		
	TEE BOLTS & ACCESSORIES			
819	3/4" X 3 1/2" LONG T-HEAD BOLT WITH HEAVY HEX NUT	2797		
820	3/4" X 4" LONG T-HEAD BOLT WITH HEAVY HEX NUT	8839		
821	3/4" X 4 1/2" LONG T-HEAD BOLT WITH HEAVY HEX NUT	3211		
822	3/4" X 5" LONG T-HEAD BOLT WITH HEAVY HEX NUT	1130		
823	DUCTILE LUGS DUCTILE IRON (MEETING ASTM A536-80)	1665		
826	3/4" HEAVY HEX NUTS	1739		
3032	3/4" ZINC PLATED ALL THREAD ROD	6280		
	MECHANICAL JOINT GASKETS			
828	4" MJ GASKET FOR 4" NOMINAL DIAMETER FITTINGS	209		
829	6" MJ GASKET FOR 6" NOMINAL DIAMETER FITTINGS	936		
830	8" MJ GASKET FOR 8" NOMINAL DIAMETER FITTINGS	718		
831	10" MJ GASKET FOR 8" NOMINAL DIAMETER FITTINGS	30		
832	12" MJ GASKET FOR 12" NOMINAL DIAMETER FITTINGS	262		
834	16" MJ GASKET FOR 16" NOMINAL DIAMETER FITTINGS	45		
836	24" MJ GASKET FOR 24" NOMINAL DIAMETER FITTINGS	36		
837	36" MJ GASKET FOR 36" NOMINAL DIAMETER FITTINGS	28		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	BRONZE METER FLANGES			
844	1 1/2" BRONZE METER FLANGES WITH BOLTS & GASKETS	97		
845	2" BRONZE METER FLANGES WITH BOLTS & GASKETS	109		
846	3" BRONZE METER FLANGES WITH BOLTS & GASKETS	2		
	BOLTED DRESSER COUPLINGS FOR C. I. PIPE			
900	4" DRESSER COUPLINGS STYLE 138 (C.I.) (7" M. RING)	5		
901	6" DRESSER COUPLINGS STYLE 138 (C.I.) (7" M. RING)	3		
902	6" DRESSER COUPLINGS STYLE 138 (C.I.) (12" M. RING)	11		
903	8" DRESSER COUPLINGS STYLE 138 (C.I.) (7" M. RING)	5		
904	8" DRESSER COUPLINGS STYLE 138 (C.I.) (12" M. RING)	21		
905	10" DRESSER COUPLINGS STYLE 138 (C.I.) (12" M. RING)	1		
906	12" DRESSER COUPLINGS STYLE 138 (C.I.) (12" M. RING)	2		
907	12" DRESSER COUPLINGS STYLE 40 (C.I.) (16" M. RING)	0		
908	14" DRESSER COUPLINGS STYLE 38 (C.I.) (12" M. RING)	0		
909	14" DRESSER COUPLING STYLE 40 (C. I.) (16" M. RING)	0		
910	16" DRESSER COUPLINGS STYLE 38 (C.I.) (12" M. RING)	0		
911	16" DRESSER COUPLING STYLE 40 (C. I.) (16" M. RING)	0		
913	24" DRESSER COUPLING STYLE 40 (C. I.) (16" M. RING)	1		
914	30" DRESSER COUPLINGS STYLE 40 (C.I.) (16" M. RING)	0		
915	36" DRESSER COUPLINGS STYLE 40 (C.I.) (16" M. RING)	0		
3426	2" Dresser Coupling For 2" Or 2 1/2" Copper (PART # 2000-0303-260)	41		
3424	3" HyMax Dresser Coupling Range (Part #2000-0433-260)	4		
3484	4" HyMax Dresser Coupling Range (4.25-5.63)	10		
3488	8" HYMAX DRESSER COUPLING (OD 8.54-9.84)	2		
3489	6" Hymax Dresser Coupling (O.D. 6.42-7.68)	6		
	FULL CIRCLE REPAIR CLAMPS FOR C. I. PIPE			
930	4" X 6" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	2		
931	4" X 12" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	0		
932	4" X 18" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	1		
933	6" X 6" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	13		
934	6" X 12" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	10		
935	6" X 18" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	1		
936	8" X 6" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	2		
937	8" X 12" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	3		
938	8" X 18" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	0		
940	10" X 12" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	0		
941	10" X 18" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	0		
942	12" X 6" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	0		
943	12" X 12" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE	0		
944	12" X 18" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE (2-BAND)	0		
945	14" X 18" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE (2-BAND)	0		
946	16" X 18" DRESSER STYLE 360 REPAIR CLAMPS - CI PIPE (2-BAND)	0		
	REPAIR CLAMPS FOR STEEL PIPE			
951	1/2" X 3" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	5		
952	1/2" X 6" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	0		
953	3/4" X 3" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	85		
954	3/4" X 6" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	0		
955	1" X 3" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	32		
956	1" X 6" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	3		
957	1 1/4" X 3" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	11		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
958	1 1/4" X 6" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	7		
959	1 1/2" X 3" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	26		
960	1 1/2" X 6" HANDIBAND STYLE REPAIR CLAMP FOR STEEL	3		
961	2" X 3" REPAIR CLAMP FOR STEEL	134		
962	2" X 6" REPAIR CLAMP FOR STEEL	29		
963	2" X 7-1/2" FULL CIRCLE REPAIR CLAMP (FOR STEEL)	0		
966	2" x 12" FULL CIRCLE REPAIR CLAMPS (FOR STEEL)	5		
3419	3" X 7" REPAIR CLAMP (FOR STEEL) O.D.3.46-3.70	5		
970	4" X 12" FULL CIRCLE REPAIR CLAMPS (FOR STEEL)	0		
972	6" X 6" FULL CIRCLE REPAIR CLAMPS (FOR STEEL)	1		
973	6" X 12" FULL CIRCLE REPAIR CLAMPS (FOR STEEL)			
	FLANGED ADAPTERS			
3408	3" DRESSER STYLE 128 FLANGED ADAPTERS	7		
1003	4" DRESSER STYLE 128 FLANGED ADAPTERS	7		
1004	6" DRESSER STYLE 128 FLANGED ADAPTERS	33		
1005	8" DRESSER STYLE 128 FLANGED ADAPTERS	4		
1006	12" DRESSER STYLE 128 FLANGED ADAPTERS	0		
1007	16" DRESSER STYLE 128 FLANGED ADAPTERS	0		
	GALVANIZED COMPRESSION COUPLINGS			
1247	1/2" GALV. STYLE 65 COMPRESSION COUPLINGS	12		
1248	3/4" GALV. STYLE 65 COMPRESSION COUPLINGS	126		
1249	1" GALV. STYLE 65 COMPRESSION COUPLINGS	71		
1250	1 1/4" GALV. STYLE 65 COMPRESSION COUPLINGS	3		
1251	1 1/2" GALV. STYLE 65 COMPRESSION COUPLINGS	13		
1252	2" GALV. STYLE 65 COMPRESSION COUPLINGS (LONG)	313		
3541	2" GALV. STYLE 65 COMPRESSION COUPLINGS (SHORT)	0		
	BRASS PLUGS			
1301	3/4" BRASS PLUG	9		
1302	1" BRASS PLUG	15		
1303	1 1/4" BRASS PLUG	3		
1304	1 1/2" BRASS PLUG	3		
1305	2" BRASS PLUG	79		
	BRASS CAPS			
1308	3/4" BRASS CAPS	4		
1309	1" BRASS CAPS	3		
1310	1 1/4" BRASS CAPS	1		
1311	1 1/2" BRASS CAPS	0		
1312	2" BRASS CAPS	20		
	BRASS BUSHINGS			
1313	3/4" X 1/2" BRASS BUSHINGS	40		
1315	1" X 3/4" BRASS BUSHINGS	590		
1317	1 1/4" X 3/4" BRASS BUSHINGS	5		
1320	1 1/2" X 3/4" BRASS BUSHINGS	3		
1321	1 1/2" X 1" BRASS BUSHINGS	4		
1323	2" X 1 1/2" BRASS BUSHINGS	0		
1324	2" X 3/4" BRASS BUSHINGS	43		
1325	2" X 1" BRASS BUSHINGS	19		
1327	2" X 1 1/2" BRASS BUSHINGS	48		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	BRASS REDUCERS			
1332	1" X 3/4" BRASS REDUCERS	7		
1341	2" X 3/4" BRASS REDUCERS	3		
1342	2" X 1" BRASS REDUCERS	7		
	BRASS NIPPLES			
1348	1/2" X 2" BRASS NIPPLES	24		
1349	1/2" X 4" BRASS NIPPLES	7		
1350	1/2" X 6" BRASS NIPPLES	2		
3276	3/4" X CLOSE" BRASS NIPPLES	650		
1351	3/4" X 2" BRASS NIPPLES	20		
1352	3/4" X 4" BRASS NIPPLES	80		
1353	3/4" X 6" BRASS NIPPLES	62		
3233	1" X CLOSE" BRASS NIPPLES	69		
1354	1" X 2" BRASS NIPPLES	21		
1355	1" X 4" BRASS NIPPLES	35		
1356	1" X 6" BRASS NIPPLES	18		
1359	1 1/4" X 4" BRASS NIPPLES	0		
1360	1 1/4" X 6" BRASS NIPPLES	3		
1362	1 1/2" X 2" BRASS NIPPLES	72		
1364	1 1/2" X 6" BRASS NIPPLES	76		
3437	1 1/2" X 12" BRASS NIPPLES	9		
1366	2" X 2 1/2" BRASS NIPPLES	187		
1367	2" X 4" BRASS NIPPLES	56		
1368	2" X 6" BRASS NIPPLES	352		
1369	2" X 8" BRASS NIPPLES	111		
1370	2" X 12" BRASS NIPPLES	169		
	BRASS BENDS			
1396	1/2" BRASS 90 DEGREE ELLS	3		
1397	3/4" BRASS 90 DEGREE ELLS	57		
1398	1" BRASS 90 DEGREE ELLS	15		
1400	1 1/2" BRASS 90 DEGREE ELLS	13		
1401	2" BRASS 90 DEGREE ELLS	265		
1416	1 1/2" BRASS 45 DEGREE ELLS	4		
1417	2" BRASS 45 DEGREE ELLS	72		
	BRASS TEES			
1421	3/4" BRASS TEES	5		
1423	1" BRASS TEES	2		
1425	1" X 3/4" BRASS TEES	0		
1437	2" X 1" BRASS TEES	3		
1440	2" X 2" BRASS TEES	34		
	BRASS COUPLINGS			
1447	1/2" BRASS COUPLINGS	1		
1448	3/4" BRASS COUPLINGS	118		
1449	1" BRASS COUPLINGS	14		
1451	1-1/2" BRASS COUPLINGS	2		
1452	2" BRASS COUPLINGS	94		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	BRONZE SADDLES			
1606	2" X 3/4" BRONZE SADDLES, CC THREAD FOR PVC PIPE (MCDONALD 3892)	248		
1607	2" X 1" BRONZE SADDLES, CC THREAD FOR PVC PIPE (MCDONALD 3892)	83		
	DOUBLE STRAP TAP SADDLES			
1612	4" X 2" TAP SADDLES, I.P.T. DOUBLE STRAP FOR C.I. PIPE	8		
1613	6" X 2" TAP SADDLES, I.P.T. DOUBLE STRAP, FOR C.I. PIPE	29		
1614	8" X 2" TAP SADDLES, I.P.T. DOUBLE STRAP, FOR C.I. PIPE	10		
1616	12" X 2" TAP SADDLES, I.P.T. DOUBLE STRAP, FOR C.I. PIPE	5		
1618	16" X 2" TAP SADDLES, I.P.T. DOUBLE STRAP, FOR C.I. PIPE	5		
1619	24" X 2" TAP SADDLES, I.P.T. DOUBLE STRAP, FOR C.I. PIPE	3		
1621	36" X 2" TAP SADDLES, I.P.T. THREAD, FOR C.I. PIPE	0		
	CURB STOPS (BALL STYLE – CURB STOP W/LOCKWING)			
1700	3/4" COMP X FIP CURB STOP MCDONALD 6102BWQ OR EQUAL	762		
1701	3/4" FIP X FIP CURB STOP MCDONALD 6101BW OR EQUAL	129		
1702	1" COMP X FIP CURB STOPS MCDONALD 6102BWQ OR EQUAL	267		
1703	1" FIP X FIP CURB STOPS MCDONALD 6101BW OR EQUAL	19		
1704	2" FIP X FIP CURB STOP MCDONALD 6101BW OR EQUAL	111		
1731	3/4" COPPER FLARE X F.I.P. CURB STOPS MCDONALD 6102 OR EQUAL	48		
1732	1" COPPER FLARE X F.I.P. CURB STOPS MCDONALD 5102 OR EQUAL	7		
	SPIGOTS			
1707	3/4" SPIGOTS, ARROWHEAD OR EQUAL	295		
	CORPORATION STOPS			
1710	3/4" CORPORATION STOPS MCDONALD 4701BQ OR EQUAL	418		
1711	1" CORPORATION STOPS MCDONALD 4701BQ OR EQUAL	216		
3331	2" CORPORATION STOPS MCDONALD 4701BQ OR EQUAL	0		
	METER FITTINGS			
1708	3/4" MALE ADAPTER MCDONALD 4753Q OR EQUAL	239		
1709	3/4" FEMALE ADAPTER MCDONALD 4754Q OR EQUAL	44		
1714	3/4" METER COUPLING 1 1/2" LONG	560		
1715	3/4" METER COUPLING 2" LONG	762		
1716	3/4" METER COUPLING 2 1/2" LONG	228		
1717	3/4" METER COUPLING 2 3/4" LONG	108		
1719	1" METER COUPLING 1 1/2" LONG	90		
1720	1" METER COUPLING 2 1/2" LONG	277		
3542	3/4" METER COUPLING 3" LONG	0		
3543	3/4" METER COUPLING 3 1/4" LONG	0		
1722	1" MALE ADAPTER MCDONALD 4753Q OR EQUAL	65		
1723	1" FEMALE ADAPTER MCDONALD 4754Q OR EQUAL	26		
1724	3/4" 3-PART UNION MCDONALD 4758Q OR EQUAL	178		
1725	1" 3-PART UNION MCDONALD 4758Q OR EQUAL	65		
1726	1" X 1" X 1" COPPER COMPRESSION TEE MCDONALD 4760Q OR EQUAL	1		
1727	1" X 3/4" X 3/4" U-BRANCH MCDONALD 3795Q OR EQUAL	11		
1728	1" X 3/4" BRASS COMPRESSION WYE MCDONALD 4768Q OR EQUAL	5		
1729	3/4" COMP. X M.I.P. 90 DEGREE BEND MCDONALD 4779MQ OR EQUAL	60		
1730	1" COMP. X M.I.P. 90 DEGREE BEND MCDONALD 4779MQ OR EQUAL	37		
1733	3/4" BRASS COMPRESSION TEE MCDONALD 4760Q OR EQUAL	4		
1734	1" X 3/4" BRASS COMPRESSION TEE MCDONALD 4760Q OR EQUAL	0		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	METER WASHERS			
1739	1/16" X 3/4" FIBER METER WASHER	1490		
1740	1/32" X 3/4" FIBER METER WASHER	2100		
1743	1/16" X 1" FIBER METER WASHER	510		
1744	1/32" X 1" FIBER METER WASHER	550		
3230	3/4" X 1/8" RUBBER METER WASHER	70		
	METER SETTER			
3302	1 1/2" MCDONALD BYPASS ASSEMBLY	27		
3303	2" MCDONALD METER BYPASS (36" LONG)	20		
	WATER METERS			
1747	3/4" iPERL "S" METER	1225		
1748	3/4" iPERL METER	158		
1749	1" iPERL METER	196		
1750	1 1/2" SENSUS WATER METER, OMNI R2, CU. FT.	15		
3438	1 1/2" SENSUS WATER METER, OMNI C2, CU. FT. (13" LONG)	30		
1751	2" SENSUS WATER METER, OMNI R2, CU. FT.	13		
3283	1 1/2" SENSUS WATER METER, OMNI C2, CU. FT. (15 1/4" LONG)	24		
1752	3" SENSUS WATER METER, OMNI C2, CU. FT. (17" LONG)	7		
1754	4" SENSUS WATER METER, OMNI C2, CU. FT. (20" LONG)	2		
1755	6" SENSUS WATER METER, OMNI C2, CU. FT. (24" LONG)	2		
1756	2" SENSUS WATER METER, OMNI T2, CU. FT. (17")	0		
1757	3" SENSUS WATER METER, OMNI T2, CU. FT.	0		
1758	4" SENSUS WATER METER, OMNI T2, CU. FT. (23)	3		
1759	6" SENSUS WATER METER, OMNI T2, CU. FT.	2		
	METER VAULTS			
1762	2' X 3' X 30" METER VAULT	8		
1766	3' X 5' X 36" METER VAULT	19		
1768	4' X 6' X 48" METER VAULT (927 LB BODY, 391 LB FOR LIDS)	41		
1770	4' X 8' X 48" METER VAULT (2,000 LBS)	7		
	METER BOXES			
1772	PLASTIC METER BOX (10"X15"X10") (WITH SOLID C.I. LID)	140		
1773	JUMBO PLASTIC METER BOX (13"X20"X12") WITH SOLID C.I. LID	886		
	NOTE: RUSSELL MODEL LC 2115 LIDS OR APPROVED EQUAL			
3208	11"X18"X12" METER BOX & LID (MSP) (C.I. LID w/READER)	14		
3232	13"X24"X12" METER BOX & LID (MSP) (C.I. LID w/READER)	19		
	BACKFLOW PREVENTERS (See Specifications)			
1774	3/4" DUAL CHECK (FIP X FIP) BACKFLOW PREVENTERS	672		
1775	1" DUAL CHECK (FIP X FIP) BACKFLOW PREVENTERS	228		
3049	1 1/2" BACKFLOW PREVENTER(WATTS 007QT 16 3/4" long)	35		
1776	2" WILKINS #950 BACKFLOW PREVENTERS OR EQUAL (19 1/2" long)	40		
1777	2" WILKINS #975 BACKFLOW PREVENTERS OR EQUAL	0		
1778	3" WILKINS #950 BACKFLOW PREVENTERS OR EQUAL (40" long)	4		
1780	4" WILKINS #950 BACKFLOW PREVENTERS OR EQUAL (52" long)	2		
1781	4" WILKINS #975 BACKFLOW PREVENTERS OR EQUAL	0		
1782	6" WILKINS #950 BACKFLOW PREVENTERS OR EQUAL (63" long)	2		
1783	6" WILKINS #975 BACKFLOW PREVENTERS OR EQUAL	3		
1784	8" WILKINS #950 BACKFLOW PREVENTERS OR EQUAL	0		
1785	8" RPZ DOUBLE CHECK BACKFLOW PREVENTER	0		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	PRESSURE REDUCER VALVES			
1816	3/4" PRESSURE REDUCER VALVES WILKINS #600 OR EQUAL	317		
1817	1" PRESSURE REDUCER VALVES WILKINS #600 OR EQUAL	291		
1818	1" 1/2" PRESSURE REDUCER VALVES WILKINS #600 OR EQUAL	5		
1819	2" PRESSURE REDUCER VALVES WILKINS #600 OR EQUAL	7		
1820	3/4" PRESSURE REDUCER VALVES WILKINS #600HR OR EQUAL	4		
1823	2" PRESSURE REDUCER VALVES WILKINS #600HR OR EQUAL	0		
	FIRE HYDRANTS AND ACCESSORIES			
1900	FIRE HYDRANTS (SPECIFY BRAND AND MODEL) M. J. 3 FT. BURY	2		
1901	FIRE HYDRANTS (SPECIFY BRAND AND MODEL) M. J. 4 FT. BURY	18		
1902	FIRE HYDRANTS (SPECIFY BRAND AND MODEL) M. J. 5 FT. BURY	4		
3269	FIRE HYDRANT (SPECIFY BRAND AND MODEL) M.J. 3 FT - 6" BURY	53		
1903	FIRE HYDRANTS (SPECIFY BRAND AND MODEL) FLG 3 FT. BURY	4		
1904	FIRE HYDRANTS (SPECIFY BRAND AND MODEL) FLG 4 FT. BURY	1		
1905	FIRE HYDRANTS (SPECIFY BRAND AND MODEL) FLG 5 FT. BURY	0		
1906	12" FIRE HYDRANT EXTENSION FOR 4 1/2 AMERICAN HYDRANT	12		
1907	18" FIRE HYDRANT EXT. FOR 4 1/2" AMERICAN HYDRANT	0		
1908	24" FIRE HYDRANT EXT. FOR 4 1/2" AMERICAN HYDRANT	1		
1909	FIRE HYDRANT SAFETY FLANGE REPAIR KITS FOR AM. HYDRANT	21		
1910	FIRE HYDRANT SHOE REPAIR KITS FOR AMERICAN HYDRANT	0		
1911	12" FIRE HYDRANT EXTENSION FOR 4 1/2 CLOW HYDRANT	1		
1912	18" FIRE HYDRANT EXT. FOR 4 1/2" CLOW HYDRANT	0		
1913	24" FIRE HYDRANT EXT. FOR 4 1/2" CLOW HYDRANT	0		
1914	FIRE HYDRANT SAFETY FLANGE REPAIR KITS FOR CLOW HYDRANT	9		
1915	FIRE HYDRANT SHOE REPAIR KITS FOR CLOW HYDRANT	0		
1916	12" FIRE HYDRANT EXTENSION FOR 4 1/2 M & H HYDRANT	0		
1917	18" FIRE HYDRANT EXT. FOR 4 1/2" M & H HYDRANT	0		
1918	24" FIRE HYDRANT EXT. FOR 4 1/2" M & H HYDRANT	2		
1919	FIRE HYDRANT SAFETY FLANGE REPAIR KITS FOR M & H HYDRANT	4		
1920	FIRE HYDRANT SHOE REPAIR KITS FOR M & H HYDRANT	4		
1921	12" New Style Mueller Ext. A319-010	1		
1922	18" FIRE HYDRANT EXT. FOR 4 1/2" MUELLER HYDRANTS	0		
1923	24" FIRE HYDRANT EXT. FOR 4 1/2" MUELLER HYDRANTS	0		
1924	FIRE HYDRANT SAFETY FLANGE REPAIR KITS FOR MUELLER HYDRANTS	4		
1925	FIRE HYDRANT SHOE REPAIR KITS FOR MUELLER HYDRANTS	0		
3293	SAFETY REPAIR KIT(FOR M94 FIRE HYDRANT)	1		
3294	12" EXTENSION FOR USP M-94 F.H.	0		
	MARKING PAINT			
2000	APWA BLUE MARKING PAINT (17 OZ. INVERTED CANS) KRYLON OR EQUAL	427		
	PIPE LUBRICANT			
2001	PIPE LUBRICANT - 1 QUART CONTAINERS	25		
2002	PIPE LUBRICANT - 1 GALLON CONTAINERS	24		
2003	JOMAR PIPE LUBRICANT - PINT CONTAINERS JOMAR #400-104	47		
	MARKERS			
2004	WATER LINE MARKERS (66" X 2 1/2") CARSONITE OR EQUAL BLUE POST WITH WATERLINE BURIED BELOW DECALS	26		
7021	MANHOLE MARKERS (66" X 2 1/2") CARSONITE WHITE POST WITH GREEN DECAL	200		
	WARNING: SANITARY SEWER MANHOLE CALL BEFORE DIGGING			
	CITY OF TUSCALOOSA 1-205-248-5900			

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	DIAMOND SAW BLADES			
2007	14" DIAMOND BLADES FOR CONCRETE (12" X 1"ARBOR X 1/8"THICK)	58		
2008	14" DIAMOND BLADES FOR DUCTILE IRON PIPE (12" X 1"ARBOR X 1/8"THICK)	19		
	UNIFLANGE RESTRAINTS			
3160	2" UNIFLANGE 1300 - S	170		
3161	4" UNIFLANGE 1300 - C	6		
3162	6" UNIFLANGE 1300 - C	10		
3163	8" UNIFLANGE 1300 - C	15		
3164	10" UNIFLANGE 1300 - C	4		
3165	12" UNIFLANGE 1300 - C	5		
3167	16" UNIFLANGE 1300 - C	8		
	WASTE WATER ITEMS			
7000	GREEN MARKING PAINT	12		
7023	WATER PLUG (5 Gallon Pails)	10		
	ALL SEWER FITTINGS TO BE GASKETED SDR 26 HWS			
7024	4" PVC HW Sewer GXG Sanitary T-Y	0		
7025	6" PVC HW Sewer GXG Sanitary T-Y	0		
7026	8" PVC HW Sewer GXG Sanitary T-Y	0		
7027	6" X 4" PVC HW Sewer GXG Sanitary T-Y	0		
7028	4" PVC HW Sewer GXG Sanitary Wye	0		
7029	6" PVC HW Sewer GXG Sanitary Wye	0		
7030	8" PVC HW Sewer GXG Sanitary Wye	0		
7031	6" X 4" PVC HW Sewer GXG Sanitary Wye	5		
7032	4" PVC HW Sewer GXG 22-1/2 Deg Bend	0		
7033	6" PVC HW Sewer GXG 22-1/2 Deg Bend	0		
7034	8" PVC HW Sewer GXG 22-1/2 Deg Bend	0		
7035	4" HW Sewer GXG 45 Deg Bend	0		
7036	6" HW Sewer GXG 45 Deg Bend	0		
7037	8" HW Sewer GXG 45 Deg Bend	0		
7038	4" HW Sewer GXG 90 Deg Bend	0		
7039	6" HW Sewer GXG 90 Deg Bend	0		
7040	8" HW Sewer GXG 90 Deg Bend	0		
7041	4" HW Sewer GXG Coupling	0		
7042	6" HW Sewer GXG Coupling	0		
7043	8" HW Sewer GXG Coupling	0		
7044	4" HW Sewer SXG ST 45 Deg Bend	6		
7045	6" HW Sewer SXG ST 45 Deg Bend	0		
7046	8" HW Sewer SXG ST 45 Deg Bend	0		
7047	4" HW Sewer SXG ST 90 Deg Bend	0		
7048	6" HW Sewer SXG ST 90 Deg Bend	0		
7049	8" HW Sewer SXG ST 90 Deg Bend	0		
7050	4" PVC Sewer SW End Cap	4		
7051	6" PVC Sewer SW End Cap	0		
7052	4" PVC Sewer Spigot Plug	1		

ITEM #	ITEM DESCRIPTION	QTY USED 2015	MFR/PN	BID PRICE
	SEWER PIPE & RELATED ITEMS			
7058	4" PVC HW Sewer Pipe 14LF	0		
7059	6" PVC HW Sewer Pipe 14LF	28		
7060	8" PVC HW Sewer Pipe 14LF	42		
7061	10" PVC HW Sewer Pipe 14LF	0		
7062	12" PVC HW Sewer Pipe 14LF	0		
7090	10" DI CL-50 Pipe w/PERMOX Lining	40		
7120	16" DI CL-52 Pipe w/PERMOX Lining	100		
3531	10" MJ LONG SLEEVE W/ PERMOX Lining	4		
7138	16" MJ SOLID SLEEVE W/ PERMOX Lining	8		
7063	4" CLAY TO PVC FERNCO SHEAR COUPLING	36		
7064	6" CLAY TO PVC FERNCO SHEAR COUPLING	18		
7065	8" CLAY TO PVC FERNCO SHEAR COUPLING	5		
7066	10" CLAY TO PVC FERNCO SHEAR COUPLING	0		
7067	12" CLAY TO PVC FERNCO SHEAR COUPLING	2		
7068	15" CLAY TO PVC FERNCO SHEAR COUPLING	0		
7069	4" PVC TO PVC FERNCO SHEAR COUPLING	11		
7070	6" PVC TO PVC FERNCO SHEAR COUPLING	0		
7071	8" PVC TO PVC FERNCO SHEAR COUPLING	0		
7072	10" PVC TO PVC FERNCO SHEAR COUPLING	2		
7073	12" PVC TO PVC FERNCO SHEAR COUPLING	4		
7074	15" PVC TO PVC FERNCO SHEAR COUPLING	0		
	MANHOLE RINGS, COVERS, & RISERS			
7075	MANHOLE RING AND COVER, STANDARD, (VULCAN NO. V-1344 OR EQUAL)	109		
7076	MANHOLE RING AND COVER, WATERTIGHT, (EJIW NO. V-2358 OR EQUAL)	2		
7077	MANHOLE ECCENTRIC CONE SECTION 48" X 24"	2		
7078	MANHOLE RISER SECTION 48" X 32"	1		
7079	MANHOLE RISER SECTION 48" X 48"	3		
7080	MANHOLE ADJUSTMENT RING 3"	56		
7081	MANHOLE ADJUSTMENT RING 4"	10		
7090	MANHOLE RISER SECTION 48" X 24"	0		
7091	MANHOLE ECCENTRIC CONE TOP 48" X 36"	2		

BIDDER'S RESPONSE FORM

MESSAGE TO BIDDERS: Please review your bid documents for accuracy, completeness, required documentation, and necessary signatures before submitting. Please label the outer mailing/shipping package with the bid information as directed.

COMPANY NAME: _____

CONTACT PERSON: _____

COMPLETE MAILING ADDRESS: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME: _____

TELEPHONE NUMBER: _____

E-MAIL ADDRESS: _____

DELIVERY TIME: _____

COPIES SUBMITTED:

_____ **VENDOR MUST SUBMIT AN ORIGINAL BID AND ONE COMPLETE COPY OR THE BID MAY BE REJECTED.**

NOTE: BY SIGNING THIS CONTRACT, THE CONTRACTING PARTIES AFFIRM, FOR THE DURATION OF THE AGREEMENT, THAT THEY WILL NOT VIOLATE FEDERAL IMMIGRATION LAW OR KNOWINGLY EMPLOY, HIRE FOR EMPLOYMENT, OR CONTINUE TO EMPLOY AN UNAUTHORIZED ALIEN WITHIN THE STATE OF ALABAMA. FURTHERMORE, A CONTRACTING PARTY FOUND TO BE IN VIOLATION OF THIS PROVISION SHALL BE DEEMED IN BREACH OF THE AGREEMENT AND SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING THEREFROM.

FAILURE TO COMPLETE ALL OF THE ABOVE WITH AN AUTHORIZED SIGNATURE MAY SUBJECT BID TO REJECTION.

NON-BIDDER RESPONSE FORM

For purposes of maintaining accurate bidder's list and facilitating your firm's response to our invitation for bid, the City of Tuscaloosa is interested in ascertaining reasons for prospective bidders' failure to respond to invitations for bids. If your firm is not responding to this bid, please indicate the reason(s) by checking any appropriate item(s) below and returning this form to Mr. David Coggins, Purchasing Agent, 2201 University Blvd., Tuscaloosa, Alabama 35401. Failure to either submit a bid proposal or return this form may result in removal of your firm's name from our bidder's lists. Thank you for your cooperation.

We are not responding to this invitation for bid for the following reason(s):

___ Items or materials request not manufactured by us or not available to our company.

___ Our items or materials do not meet specifications.

___ Specifications not clearly understood or applicable (too vague, too rigid, etc.)

___ Quantities requested are too small.

___ Insufficient time allowed for preparation of bid.

___ Incorrect address used. Correct mailing address is:

___ Our branch/division handles this type of bid. Correct name and mailing address is:

___ Other reason(s): _____

Company Name: _____

Address: _____

City/State/Zip: _____

Signature: _____