

January 31, 2018

**INVITATION TO BID**

Sealed bids for a Well Parts will be received by the City Purchasing Agent until 10:00 AM, Wednesday, February 14, 2018. Bidders may obtain packets containing Instructions to Bidders, Proposal Forms, Detailed Specifications and Contract Forms at the Purchasing Department, 10th Floor Purchasing Department, 161 W. Michigan Avenue, Jackson, Michigan 49201, Telephone (517) 788-4020. Bid documents are also available on the City of Jackson website at [www.cityofjackson.org/departments/purchasing/bids.asp](http://www.cityofjackson.org/departments/purchasing/bids.asp).

In lieu of a pre-bid meeting, questions may be directed to Bob Koehn at the Jackson Water Treatment Plant, 517-788-4073.

Bidders will be required to show a State or Federal Equal Employment Opportunity Certificate of Compliance, or demonstrate the existence with standards for equal employment opportunity established by the City of Jackson.

The City of Jackson does not discriminate on the basis of religion, race, color, national origin, age, sex, height, weight, handicapped, or marital status as to: access, availability, employment, or participation in any of its programs and activities.

City of Jackson

By

\_\_\_\_\_  
Phil Hones  
Purchasing Agent

## **INSTRUCTIONS TO BIDDERS**

1. **PREPARATION AND SUBMISSION OF BID DOCUMENTS:** Execute the bid documents fully and properly and submit same in a sealed envelope marked *Well Parts* prior to *10:00 AM, Wednesday, February 14, 2018*, which is the time designated for the public opening and reading of bids.
2. **SIGNATURES:** All contracts, notifications, claims and statements must be signed as follows:
  - (a) **CORPORATIONS:** Signature of official shall be accompanied by a certified copy of the resolution of the Board of Directors authorizing the individual signing to bind the corporation. Each signature must be witnessed and notarized.
  - (b) **PARTNERSHIPS:** Signature of one partner shall be accompanied by a certified copy of the power of attorney authorizing and individual signing to bind all partners. If bid is signed by all partners no authorization is needed. Each signature must be witnessed and notarized.
  - (c) **INDIVIDUAL:** No authorization is needed, but signature must be witnessed and notarized.
3. **EQUAL EMPLOYMENT OPPORTUNITY:** All bidders shall complete the Equal Employment Opportunity Certification, Certification of Nonsegregated Facilities, and Non-Collusion Affidavit, found in Section P of the Proposal Forms.
4. **AWARD OF CONTRACT:**
  - (a) The City Council will be advised of the terms of all bids received and a recommendation will be made to the Council as to award of a contract to a bidder. The award if any will be made based upon the City Council's determination of the lowest responsible bid; and
  - (b) The City Council has the authority to reject any and all bids, and to accept or recommend the acceptance of other than the lowest responsive bid when the public interest is served thereby and such action is in the best interest of the City.
5. **CONTRACT:** Upon an affirmative vote of the City Council these bid documents shall constitute a contract between the City and the bidder to whom the contract is awarded, provided, however, that the contract shall not be deemed to be in force until an executed note of acceptance of the bidders proposal showing the date of City Council acceptance is mailed to the successful bidder.
6. **LIABILITY FOR TAXES:** Where the terms of this contract involve the lease of personal property to the City it is understood that the lessor shall be solely responsible for the payment of all taxes of any nature whatsoever that accrue upon the property during the term of the lease.
7. **DEFAULT TO THE CITY:** No bidder who is in default to the City shall be awarded a contract with the City.

8. PRE-OPENING INQUIRERS/RESPONSE: Any explanation desired by a prospective bidder regarding the meaning or interpretation of an Invitation for Bids and attachments must be requested in writing from the Purchasing Department at least three working days prior to the deadline for submission of bids.

Any explanation or interpretation concerning an Invitation for Bids and attachments shall be in writing and shall be furnished to all prospective bidders as an amendment to the Invitation for Bids and attachments.

Receipt of such amendment shall be acknowledged upon the bid by attachment thereto at the time of submission of bids.

No oral explanation or instruction of any kind or nature whatsoever given before the award of a contract to a bidder shall be binding.

9. CONFLICTING TERMS: If terms and conditions, if any, of seller (contractor) are inconsistent or conflict with the terms and conditions, instructions to bidders, specifications, or proposal sheet, or any other bid documents of the City of Jackson, the City's bid documents shall prevail.

10. TIME PERIOD: Bids may be withdrawn up to the time for opening announced in the item 1 of the Instructions To Bidders. Bids shall remain in effect for 60 days after the opening.

11. DISCOVERY OF ERROR: Upon the discovery of an obvious error in a bid document that could result in a change in the amount of a bid, the staff of the Purchasing Department shall contact the bidder in writing and advise the bidder that it has seven working days from the date of the letter to correct the error. This correction shall be in writing directed to the Purchasing Agent and shall be postmarked not later than seven working days from the date of the letter referred to in the first sentence of this paragraph.

If no correction is received in a timely fashion, then the Purchasing Agent shall reject the bid. If a correction is received and the Purchasing Department deems same to be appropriate and proper in every way, the Purchasing staff shall attach same to the original bid document and shall then proceed to tabulate the bids as corrected.

## CONTRACT COMPLIANCE

DATE: January 31, 2018  
TO: All Bidders  
FROM: City of Jackson  
SUBJECT: CONTRACT COMPLIANCE

The Commission of the City of Jackson, on 12/19/72, passed a resolution committing the City to a policy and procedure regarding compliance to affirmative hiring practices by contracting agencies doing business with the City of Jackson, effective 12/20/72.

The purpose of the policy and procedure is to ensure that all citizens of our community have the opportunity for the equality of treatment in service and employment.

The City requests that all bidders who will be doing business with the City in the amount of \$5,000 or more during any fiscal year, shall comply with the provisions of the Contract Compliance Policy.

Bidders will be required to show an Equal Employment Opportunity Certificate of Compliance or demonstrate compliance with standards for equal employment opportunity established by state and federal statute.

City Council of Jackson, Michigan

BIDDERS:

See Instructions to Bidders attached

City Department:

Water

Opening Date: 10:00 AM, Wednesday, February 14, 2018

Subject:

Well Parts

RETURN TO:

Purchasing Department  
10th Floor, City Hall  
161 West Michigan Avenue  
Jackson, Michigan 49201

MARK ENVELOPE:

Well Parts

Proposal: We propose to furnish all materials, equipment or tools required in accordance with the specifications and conditions contained herein in consideration of the sum or sums stated below and agree that this document and its attachments will constitute the contract if accepted by the City.

	<b>LUMP SUM BID</b>
Lump sum bid for well parts per the attached specifications	

**We propose to deliver the (Brand & Model)** \_\_\_\_\_

**no later than (Delivery Date)** \_\_\_\_\_

**All freight and delivery charges must be included in bid.**

I hereby state that all of the information I have provided is true, accurate, and complete and that I agree to be bound by the terms and conditions. I hereby state that I have the authority to submit this bid which will become a binding contract if accepted by the City of Jackson. I hereby state that I have not communicated with nor otherwise colluded with any other bidder, nor have I made any agreement with nor offered/accepted anything of value to/from an official or employee of the City of Jackson that would tend to destroy or hinder free competition.

I hereby state that I have read, understand and agree to be bound by all terms of this bid document.

Signed: \_\_\_\_\_

Name: \_\_\_\_\_  
(Type or Print)

Title: \_\_\_\_\_

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

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Firm Name: \_\_\_\_\_  
(If Any)

Address: \_\_\_\_\_  
(Street Address) (City) (State) (Zip)

## CONTRACT COMPLIANCE

DATE: January 31, 2018  
TO: All Bidders  
FROM: City of Jackson  
SUBJECT: CONTRACT COMPLIANCE

The Commission of the City of Jackson, on 12/19/72, passed a resolution committing the City to a policy and procedure regarding compliance to affirmative hiring practices by contracting agencies doing business with the City of Jackson, effective 12/20/72.

The purpose of the policy and procedure is to ensure that all citizens of our community have the opportunity for the equality of treatment in service and employment.

The City requests that all bidders who will be doing business with the City in the amount of \$5,000 or more during any fiscal year, shall comply with the provisions of the Contract Compliance Policy.

Bidders will be required to show an Equal Employment Opportunity Certificate of Compliance or demonstrate compliance with standards for equal employment opportunity established by state and federal statute.

City Council of Jackson, Michigan

**CONTRACT COMPLIANCE**

CERTIFICATION

\_\_\_\_\_ certifies that he/she/it will not discriminate against any employee or applicant for employment with respect to hire, tenure, term, conditions, or privileges or employment because race, religion or national origin, color, age, sex, height, weight, marital status, sexual orientation, gender identity, and physical or mental handicap.

In connection with this commitment \_\_\_\_\_ understands that he/she/it name will be reviewed by the State of Michigan, Department of Civil Rights for determination of its status as an awardable Bidder.

The undersigned hereby agrees that he/she/it will abide by the terms of any agreements made with the City of Jackson in order to achieve awardable status.

Dated: \_\_\_\_\_ By: \_\_\_\_\_  
(Company)

By: \_\_\_\_\_  
(Title)

\_\_\_\_\_  
Address

\_\_\_\_\_  
City

\_\_\_\_\_  
State

## NON-DISCRIMINATION CLAUSE FOR ALL CITY OF JACKSON CONTRACTS

In connection with the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee/employer for employment because of race, religion or national origin, color, age, sex, height, weight, marital status, sexual orientation, gender identity, and physical or mental handicap. The contractor will take affirmative action to ensure that minority applicants are employed, and that employees are treated during employment without regard to their race, religion, color, national origin, age, sex, height, weight, marital status or handicap. Such action shall include, but not be limited to, the following: layoff or termination, rates of pay or other forms of compensation, selection for training, upgrading or promotion, transfer or recruitment.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age, sex, height, weight, marital status or handicap. As a disclaimer, the contractor may state in the advertisement that he/she is an equal opportunity employer.
3. The contractor will furnish and file compliance reports with the City of Jackson as requested. Such reports shall elicit information as to the practices, policies, program and employment statistics for the contractor and said contractor shall permit access to all books, records and accounts regarding employment practices by agents and representatives of the City duly charged with investigative duties to assure compliance with this clause.
4. Breach of the covenants herein may be regarded as a material breach of the contract, or purchasing agreement.
5. The contractor will include, or incorporate by reference, the provisions of paragraphs (1) through (4) in every subcontract or purchase order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission and will provide in every subcontract or purchase order that said provisions will be binding upon each subcontractor or seller.



**EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION**

The undersigned understands and agrees that, as a Contractor for services, there shall be no discrimination against any employee or applicant for employment because of race, religion or national origin, color, age, sex, height, weight, marital status, sexual orientation, gender identity, and physical or mental handicap, including but no limited to employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation and selection for training.

The Contractor further agrees to the following:

- (a) It will assist and actively cooperate with the City in obtaining compliance of any subcontractors with the equal opportunity rules, regulations, and relevant orders.
- (2) It will furnish the City such information as might be required for the supervision of its compliance program, and will otherwise assist the City in the discharge of its responsibility for ensuring compliance.
- (3) In the event that the Contractor fails or refuses to comply with the equal opportunity regulations, the City may cause to be canceled, terminated, or suspended in whole or in part the contractual arrangement between the City and the Contractor.

NAME OF BIDDER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

SIGNED BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

**CERTIFICATION OF NONSEGREGATED FACILITIES**

The bidder certifies that he does not maintain or provide for his employees any segregated facilities and do not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certification from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his files.

Dated: \_\_\_\_\_ By: \_\_\_\_\_  
(Name of Bidder)

By: \_\_\_\_\_  
(Title)

\_\_\_\_\_  
Address

\_\_\_\_\_  
City

\_\_\_\_\_  
State

**NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

STATE OF \_\_\_\_\_)

ss

COUNTY OF \_\_\_\_\_)

\_\_\_\_\_, being first duly sworn, deposed and says that:

1. He is \_\_\_\_\_ of, \_\_\_\_\_ the Bidder that has submitted the attached bid;
2. He is fully informed respecting the preparation and contents of the attached bid and of all pertinent circumstances respected such bid;
3. Such bid is genuine and is not a collusive or sham bid;
4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached bid or of any other Bidder, or to fix any overhead, profit or cost element of the bid price or the bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Jackson or any person interested in the proposed contract; and
5. The price or prices quoted in the attached bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Dated: \_\_\_\_\_ By: \_\_\_\_\_  
(Company)

By: \_\_\_\_\_  
(Title)

Subscribed and sworn to before me, a Notary Public, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public, \_\_\_\_\_ County,  
My commission expires: \_\_\_\_\_



# City of Jackson Ethics Disclosure Form Vendors and Contractors

Name	Company
Telephone	Email Address

Contract or matter pending with the City:

---



---

I, \_\_\_\_\_, being duly sworn, and pursuant to City of Jackson Ordinance No. 2015-18, I hereby disclose and swear to the following (check all that apply and provide details below):

- I, or my company's owners, members, major shareholders, or corporate officers, have a financial interest in a contract or matter pending before Jackson City Council.
- A relative<sup>1</sup> or immediate family member<sup>2</sup> of myself or my company's owners, members, major shareholders, or corporate officers has a financial interest in a contract or matter pending before a City office, department, board, or commission.
- I, or my company's owners, members, major shareholders, or corporate officers, have an interest in real or personal property that is subject to a decision by the City regarding the purchase, sale, lease, zoning, property improvements, NOORPR or FVA registration, a development agreement, or a special tax designation or abatement.

Property address: \_\_\_\_\_

Property interest: \_\_\_\_\_

<sup>1</sup> Relative means any spouse, domestic partner, great grandparents, step great grandparents, grandparents, step grandparents, sons, stepsons, daughters, step daughters, grandsons, step grandsons, granddaughters, step granddaughters, brothers, step brothers, sisters, step sisters, and in-laws of a Public Employee, the Mayor, an Elected Official, an Appointed Official, a member of a Board or Commission, a Contractor, or an Advisor of the City.

<sup>2</sup> Immediate family member means a Public Employee, the Mayor, an Elected Official, an Appointed Official, a member of a Board or Commission, a Contractor, or an Advisor's spouse, domestic partner, individual who lives in the Public Employee's household or an individual claimed by a Public Employee or a Public Employee's spouse as a dependent under the United States Internal Revenue Code at 26 USC 1, et seq.

An immediate family member or relative of myself or my company's owners, members, major shareholders, or corporate officers, has a financial interest in real or personal property that is subject to a decision by the City regarding the purchase, sale, lease, zoning, property improvements, NOORPR or FVA registration, a development agreement, or a special tax designation or abatement.

Property address: \_\_\_\_\_

Property interest: \_\_\_\_\_

An immediate family member or relative of myself or my company's owners, members, major shareholders, or corporate officers, is employed by the City or making an application for employment to the City.

Relative name: \_\_\_\_\_

City Department: \_\_\_\_\_

I, or my company's owners, members, major shareholders, or corporate officers, have made campaign contributions in the last year to a candidate running for elective office with the City.

Name of Candidate: \_\_\_\_\_

Amount of Campaign Contribution: \_\_\_\_\_

The following entities and persons have a financial interest in the contract or matter identified above:

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

Additional information regarding any of the above:

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

None of the above apply.

Dated:

\_\_\_\_\_  
*Signature*

STATE OF MICHIGAN        )  
  ) SS  
COUNTY OF JACKSON     )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,  
By \_\_\_\_\_.

\_\_\_\_\_

## SPECIFICATIONS FOR WELL PARTS

20 each

8" Intermediate Column Pipe with Combination Couplings complete shall be 8" I.D. ASTM A-53 Grade B steel pipe with 8-threads per inch with 1/8" taper and faced parallel to permit the ends to but against the machined surfaces within the column couplings. The exact length of the intermediate column pipe shall be 9' 9-5/8". The column pipe shall be epoxy coated on the inside and outside except in the threaded area. The column couplings shall be attached properly to the pipes.

8" column pipe combination couplings, shall be ductile A-536 Grade 65-45-12. The coupling shall have an integrally cast spider hub to hold and accurately align the line shaft bearing. Each coupling shall be provided with a 1-1/2" X 2-3/4" snap in synthetic rubber bearing. Column pipe Coupling shall be for schedule 40 pipe and conform to turbine pump standards. The external shape of the bearing shall be such as to retain it in the coupling spider hub without use of auxiliary collars or rings. The internal shape of the bearing shall be a polygon to provide minimum friction contact to the shaft sleeves or equal. Replacement bearing shall be capable of being installed by hand without special tools. Couplings shall have an integrally cast spider hub to hold an accurately align water lubricated line shaft bearing or tube centering bushing as appropriate. Spider hub shall have a height of 2-3/8" to facilitate column pipe lengths of 9' 9-5/8" there by achieving center to center measurements of 10' 0". Machined butt face surface in coupling shall be exactly perpendicular to the center axis of the bearing hub. Width of butt face surface shall be that it will accept and totally cover the butt end of respective sized Schedule 40 Column Pipe. Outside diameter of column couplings shall be machined to a uniform diameter and include rounds on each end. Couplings shall be threaded to accept 8 threads per inch column pipe, threads shall have a taper of 1/8" per foot. Threads shall be CNC cut to National Bureau of Standards H-28 Class 3 Thread Specifications. Threading size in each coupling shall be verified by screwing into each thread, a precision, hardened and ground gauge. Finished couplings shall be solvent washed to remove all residues from threads and bores. Integrally cast spider hub for water-lubricated application shall accept line shaft bearings of variable diameters and hold said bearings in place without the use of external collars, lock rings or adhesives. The outside diameter of the bearing hub shall not exceed the outside diameter of the bearing plus 0.60", or equal. Bearings shall be totally uniform with flanged ends and shall not be slotted to facilitate easy installation. Line shaft bearing material shall be water resistant and made of SBR (Styrene Butadiene Rubber) with a Shore Hardness ranging from a low of 60 to a high of 90. Bearings shall be capable of operating in water up to 150 degrees Fahrenheit. The bearings shall be molded with an upper and lower flange such that it will snap into the bearing hub. Bearings shall have an internal spiral groove or vertical flutes with a surface area equal to 20% to 30% of the internal area of the

bearing. Groove shall have a depth of approximately 1/8 of an inch. Grooves shall be designated to provide maximum sand rejection or equal.

28 each Intermediate Line Shafts shall be 1-1/2" full diameter, ASTM A-108 grade 1045 steel ground and polished with a surface finish not to exceed 40 rms. The butting ends shall be machined, face and recessed square to the axis of the shaft to insure accurate alignment, the shaft shall be straight within 0.007 inches total indicator reading. The ends of the shaft shall be accurately threaded 1-1/2" in diameter, 8-threads per inch left hand with 2.25 inches of threads. Each shaft shall be provided with an ASTM A296 type 304 stainless steel sleeve and secured in position by a suitable adhesive. The shaft sleeve shall be positioned accurately 8.5 inches from the end of the shaft. Line shafting shall be interchangeable and have an exact length of 10' 0".

With 1-1/2" type 416 stainless steel Line Shaft Couplings shall be bored and threaded from solid stainless steel bars designed with a safety factor of 1-1/2 times that of the shaft. The threads shall be left hand to tighten during pump operation. The coupling shall be without vent holes.

2 each 8" Bottom Column pipe with Combination Couplings shall be 8" I.D. ASTM A-53 Grade B steel pipe with 8-threads per inch with 1/8" taper and faced parallel to permit the ends to butt against the machined surfaces within the column coupling and pump bowl discharge nozzle. The exact length of the bottom column pipe shall be exactly 4' 10-13/16". The column pipe shall be epoxy coated on the inside and outside except in the threaded area.

2 each 8" Top Column Pipe shall be 8" I.D. ASTM A-53 Grade B steel pipe with 8-threads per inch with a 1/8" taper and faced parallel to permit the end to butt against the machined surfaces within the column coupling and flange. The column pipe shall have holding lugs and shall have an exact length of 4' 9-13/16". The column pipe shall be epoxy coated on the inside and outside except in the threaded area.

12 10" Intermediate Column Pipe with Combination Couplings complete shall be 10" I.D. ASTM A-53 Grade B steel pipe with 8 threads per inch with 1/8" taper and faced parallel to permit the ends to butt against the machined surfaces within the column couplings. The exact length of the intermediate column pipe shall be 9' 9-5/8". The column pipe shall be epoxy coated on the inside and outside except in the threaded areas. The column coupling shall be attached properly to the pipes.

10" Column Pipe Combination Couplings shall be ductile iron A-536 Grade 65-45-12. The coupling shall have an integrally cast spider hub to hold and be provided with a 1-1/2" X 2-3/4" snap in synthetic rubber bearing. Column pipe coupling shall be for schedule 40 pipe and conform to turbine pump standards. The external shape of the bearing shall be such as to retain it in the coupling spider hub without use of auxiliary collars or rings.

The internal shape of the bearing shall be a polygon to provide minimum friction contact to the shaft sleeves or equal. Replacement bearing shall be capable of being installed by hand without special tools. Couplings shall have integrally cast spider hub to hold an accurately align water lubricated line shaft bearing or tube centering bushing as appropriate. Spider hub shall have a height of 2-3/8" to facilitate column pipe lengths of 9' 9-5/8" there by achieving center to center measurements of 10' 0". Machined butt face surface in coupling shall be exactly perpendicular to the center axis of bearing hub. Width of butt face shall be such that it will accept and totally cover the butt end respective sized Schedule 40 Column Pipe. Outside diameter of column couplings shall be machined to a uniform diameter and include rounds on each end. Couplings shall be threaded to accept 8-threads per inch column pipe, threads shall have a taper of 1/8" per foot. Threads shall be CNC cut to National Bureau of Standards H-28 Class 3 Thread Specifications. Threading size in each coupling shall be verified by screwing into each thread, a precision, hardened and ground gauge. Finished couplings shall be solvent washed to remove all residues from threads and bores. Integrally cast spider hub for water-lubricated application shall accept line shaft bearings of variable diameters and hold said bearings in place without the use of external collars, lock rings or adhesives. The outside diameter of the bearing hub shall not exceed the outside diameter of the bearing plus 0.60", or equal. Bearings shall be totally uniform with flanged ends and shall not be slotted to facilitate easy installation. Line shaft bearing material shall be water resistant and made of SBR (Styrene Butadiene Rubber) with a Shore Hardness ranging from a low of 60 to a high of 90. Bearings shall be capable of operating in water up to 150 degrees Fahrenheit. The bearings shall be molded with upper and lower flange such that it will snap into the bearing hub. Bearings shall have an internal spiral groove or vertical flutes with a surface area equal to 20% to 30% of the internal area of the bearing. The grooves shall have a depth of approximately 1/8 of an inch. Grooves shall be designed to provide maximum sand rejection or equal.

1        10" Bottom Column Pipe with Combination Couplings shall be 10" I.D. ASTM A-53 Grade B steel Pipe with 8-threads per inch with 1/8 taper and faced parallel to permit the ends to butt against the machined surfaces within the column coupling and pump bowl discharge nozzle. The exact length of the bottom column pipe shall be exactly 4' 10-13/16". The column couplings shall be attached properly to the pipes. The bottom column pipes shall be epoxy coated on the inside and outside except in the threaded areas.

1        Layne Turbine Pump or Equivalent  
Size: 12DHLC 3 Stg.  
Speed: 1760 rpm  
Design Point: 1400 US gpm, at 130 Ft. of Head



- 1 Layne Turbine Pump or Equivalent  
Size: 12RJMC 3 Stg.  
Speed: 1760 rpm  
Design Point: 1100 US gpm. At 169 Ft. of Head
  
- 1 Layne Turbine Pump or Equivalent  
Size: 10LHC 4 Stg.  
Speed: 1760 rpm  
Design Point: 1400 US gpm. At 108 Ft. of Head

General:

The manufacturer shall supply a sworn statement that all pipes and couplings furnished shall comply with the above standards referenced in these specifications.

Column pipes shall be schedule 40 and conform to turbine pump standards.

All component assemblies shall be interchangeable with existing turbine pumps. All shafting and shaft couplings shall be interchangeable with existing turbine pumps.

The City of Jackson reserves the right to accept any or reject any bid or pricing at its sole discretion.

All prices are to include freight to 740 E. Mansion St. Jackson, Michigan 49203.

Deliveries are to be made to: City of Jackson Water Treatment Plant at 740 E. Mansion St. Jackson, Michigan 49203

All parts shall be delivered on an open flatbed truck. The parts shall be delivered on April 20, 2018 or after a delivery date has been agreed to by Supplier and the City of Jackson.