

DATE: 7/21/2017

INVITATION TO BID
THIS IS NOT AN ORDER

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BID NO.: 50-00120430

JEFFERSON PARISH
PURCHASING DEPARTMENT
P.O. BOX 9
GRETNA, LA. 70054-0009
504-364-2678

VENDOR:

BUYER: SFOLSE@jeffparish.net

Bids will be received until 11:00 AM, 7/28/2017 via online at www.jeffparishbids.net or by hand delivery, USPS mail or other courier service to Purchasing Department, 200 Derbigny Street (General Government Building), Suite 4400, Gretna, LA 70053. For convenience, bidders may also submit bids in the East Bank Purchasing Department, Suite 404, Jefferson Parish Joseph S. Yenni Building, 1221 Elmwood Park Blvd., Jefferson LA 70123. However, if submitting bids on the day of bid opening, bidders must submit at the West Bank location only.

All bids submitted are subject to these instructions and general conditions and any special conditions and specifications contained herein, all of which are made part of this bid proposal reference. By submitting a bid, vendor agrees to comply with all provisions of Louisiana Law, as well be in compliance with the Jefferson Parish Code of Ordinances, Louisiana Code of Ethics, applicable Jefferson Parish ethical standards and Jefferson Parish Resolution No. 113646 and/or Resolution No. 113647. A copy of these resolutions may be obtained from the Office of the Parish Clerk, Suite 6700, Jefferson Parish General Government Building, 200 Derbigny Street, Gretna, LA 70053. You may also obtain a copy by visiting the Purchasing Department webpage at purchasing.jeffparish.net and clicking on On-line forms.

All vendors submitting bids should register as a Jefferson Parish vendor if not already yet registered. Registration forms may be downloaded from <http://purchasing.jeffparish.net> and by clicking on Vendor Information. Current W-9 forms with respective Tax Identification numbers and vendor applications may be submitted at any time; however, if your company is not registered and/or a current W-9 form is not on file, vendor registration is mandatory. Further, a current W-9 form and respective Tax Identification number must be supplied upon contract execution, should you be awarded a contract and/or issued purchase order. Failure to do so may result in delay of payment.

As per LSA-RS 47:301 et seq., all governmental bodies are excluded from payment of sales taxes to any Louisiana taxing body. Quotations shall be based on F.O.B. Delivered, anywhere within the Parish as designated by the Purchasing Department. JEFFERSON PARISH WILL ACCEPT ONE BID ONLY FROM EACH VENDOR. Items bid must meet specifications. JEFFERSON PARISH will accept one price for each item unless otherwise indicated. Two or more prices for one item will result in bid rejection. Bidders are required to complete, sign and return the bid form and/or complete and return the associated line item pricing forms as indicated. The price quoted for work shall be stated in figures. In the event there is a difference in unit prices and totals, the unit prices shall prevail.

JEFFERSON PARISH reserves the right to award contracts or place orders on a lump sum or individual item basis, or such combination, as shall in its judgment be in the best interest of JEFFERSON PARISH. Every contract or order shall be awarded to the LOWEST RESPONSIVE and RESPONSIBLE BIDDER, taking into consideration the CONFORMITY WITH THE SPECIFICATIONS and the DELIVERY AND/OR COMPLETION DATE

PROTESTS: Only those vendors that submitted a bid in response to this solicitation may submit a protest in writing to the Director of the Purchasing within 48 hours of bid opening. The Purchasing Director will review it in connection with the Parish Attorney's Office as appropriate and a written response will be provided as soon as possible.

JEFFERSON PARISH reserves the right to cancel all or any part of an order if not shipped promptly. No charges will be allowed for parking or cartage unless specified in the quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel at any time and for any reason by issuing a THIRTY (30) day written notice to the contractor.

JEFFERSON PARISH requires all products to be new (current) and all work must be performed according to standard practices for the project. Unless otherwise specified, no aftermarket parts will be accepted. Unless otherwise specified, all workmanship and materials must have at least one (1) year guaranty, in writing, from the date of delivery and/or acceptance of the project. Any deviations or alteration from the specifications must be indicated on the bid form for each item and upon request, product data for same must be submitted by the time specified by the Purchasing Department.

If this bid requires a pre-bid conference (see Additional Requirements section), bidders are advised that such conference will be held to allow bidders the opportunity to identify any discrepancies in the bid specifications and seek further clarification regarding instructions. The Purchasing Department will issue a written response to bidders' questions in the form of an Addendum.

All formal Addenda require written acknowledgment on the bid form by the bidder. Failure to acknowledge an Addendum on the bid form shall cause the bid to be rejected; JEFFERSON PARISH reserves the right to award bid to next lowest responsive and responsible bidder in this event.

USE OF BRAND NAMES AND STOCK NUMBERS: Where brand names and stock numbers are specified, it is for the purpose of establishing certain minimum standards of quality. Bids may be submitted for products of equal quality, provided brand names and stock numbers are specified. Complete product data may be required prior to award.

Quantities listed are for bidding purposes only. Actual requirements may be more or less than quantities listed.

Bidders are not to exclude from participation in, deny the benefits of, or subject to discrimination under any program or activity, any person in the United States on the grounds of race, color, national origin, or sex; nor discriminate on the basis of age under the Age Discrimination Act of 1975, or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973, or on the basis of religion, except that any exemption from such prohibition against discrimination on the basis of religion as provided in the Civil Rights Act of 1964, or Title VI and VII of the Act of April 11, 1968, shall also apply. This assurance includes compliance with the administrative requirements of the Revenue Sharing final handicapped discrimination provisions contained in Section 51.55 (c), (d), (e), and (k)(5) of the Regulations. New construction or renovation projects must comply with Section 504 of the 1973 Rehabilitation Act, as amended, in accordance with the American National Standard Institute's specifications (ANSI A1 17.1-1961).

Jefferson Parish and its partners as the recipients of federal funds are fully committed to awarding a contract(s) to firm(s) that will provide high quality services and that are dedicated to diversity and to containing costs. Thus, Jefferson Parish strongly encourages the involvement of minority and/or woman-owned business enterprises (DBE's, including MBE's, WBE's and SBE's) to stimulate participation in procurement and assistance programs.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

IN ACCORDANCE WITH STATE REGULATIONS JEFFERSON PARISH OFFERS ELECTRONIC PROCUREMENT TO ALL VENDORS

This electronic procurement system allows vendors the convenience of reviewing and submitting bids online. This is a secure site and authorized personnel have limited read access only. Bidders are encouraged to submit electronically using this free service; while the website accepts various file types, one single PDF file containing all appropriate and required bid documents is preferred. Bidders submitting uploaded images of bid responses are solely responsible for clarity. If uploaded images/documents are not legible, then bidder's submission will be rejected. Please note all requirements contained in this bid package for electronic bid submission.

Please visit our E-Procurement Page at www.jeffparishbids.net to register and view Jefferson Parish solicitations. For more information, please visit the Purchasing Department page at <http://purchasing.jeffparish.net>.

ADDITIONAL REQUIREMENTS FOR THIS BID

PLEASE MATCH THE NUMBERS PRINTED IN THIS BOX WITH THE CORRESPONDING INSTRUCTIONS BELOW.

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1. All bidders must attend the MANDATORY pre-bid conference and will be required to sign in and out as evidence of attendance. In accordance with LSA R.S. 38:2212(I), all prospective bidders shall be present at the beginning of the MANDATORY pre-bid conference and shall remain in attendance for the duration of the conference. Any prospective bidder who fails to attend the conference or remain for the duration shall be prohibited from submitting a bid for the project.
2. Attendance to this pre-bid conference is optional. However, failure to attend the pre-bid conference shall not relieve the bidder of responsibility for information discussed at the conference. Furthermore, failure to attend the pre-bid conference and inspection does not relieve the successful bidder from the necessity of furnishing materials or performing any work that may be required to complete the work in accordance with the specification with no additional cost to the owner.
3. Contractor must hold current applicable JEFFERSON PARISH licenses with the Department of Inspection and Code Enforcement. Contractor shall obtain any and all permits required by the JEFFERSON PARISH Department of Inspection and Code Enforcement. The contractor shall be responsible for the payment of these permits. All permits must be obtained prior to the start of the project. Contractor must also hold any and all applicable Federal and State licenses. Contractor shall be responsible for the payment of these permits and shall obtain them prior to the start of the project.
4. A LA State Contractor's License will be required in accordance with LSA R.S. 37-2150 et. seq. and such license number will be shown on the outside of the bid envelope. Failure to comply will cause the bid to be rejected. Additionally if submitting the bid electronically, then the license number must be entered in the appropriate field in the Electronic Procurement system. Failure to comply will cause the bid to be rejected.
5. It is the bidder's responsibility to visit the job site and evaluate the job before submitting a bid.
6. Job site must be clean and free of all litter and debris daily and upon completion of the contract. Passageways must be kept clean and free of material, equipment, and debris at all times. Flammable material must be removed from the job site daily because storage will not be permitted on the premises. Precautions must be exercised at all times to safeguard the welfare of JEFFERSON PARISH and the general public.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

7. **PUBLIC WORKS BIDS:** All awards for public works in excess of \$5,000.00 will be reduced to a formal contract which shall be recorded at the contractor's expense with the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. A price list of recordation costs may be obtained from the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. All awards in excess of \$25,000.00 will require both a performance and a payment bond. Unless otherwise stated in the bid specifications, the performance bond requirements shall be 100% of the contract price. Unless otherwise state in the bid specifications, the payment bond requirements shall be 100% of the contract price. Both bonds shall be supplied at the signing of the contract.
8. **NON-PUBLIC WORKS BIDS:** A performance bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The performance bond shall be supplied at the signing of the contract.
9. **NON-PUBLIC WORKS BIDS:** A payment bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The payment bond shall be supplied at the signing of the contract.
10. Unless otherwise stated in the bid specifications, the successful bidder will be required to procure standard insurance policies evidencing Parish-mandated insurance requirements as indicated on the attached "insurance requirements" sheet. All bidders must comply with the instructions in this sheet. Failure to comply will cause bid to be rejected.
11. A bid bond will be required with bid submission in the amount of 5% of the total bid, unless otherwise stated in the bid specifications. Acceptable forms shall be limited to cashier's check, certified check, or surety bid bond. All sureties must be in original format (no copies). If submitting a bid online, vendors must submit an electronic bid bond through the respective online clearinghouse bond management system(s) as indicated in the electronic bid solicitation on Central Auction House. No scanned paper copies of any bid bond will be accepted as part of the electronic bid submission.
12. This is a requirements contract to be provided on an as needed basis. JEFFERSON PARISH makes no representations on warranties with regard to minimum guaranteed quantities unless otherwise stated in the bid specifications.
13. Freight charges should be included in total cost when quoting. If not quoted FOB DELIVERED, freight must be quoted as a separate item. Bid may be rejected if not quoted FOB DELIVERED or if freight charges are not indicated on bid form.
14. **PUBLIC WORKS BIDS - Completed, Signed and Properly Notarized Affidavits Required;** This applies to all solicitations for construction, alteration or demolition of public buildings or projects, in conformity with the provisions contained in LSA-RS 38:2212.9, LSA-RS 38:2212.10, LSA-RS 38:2224, and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Conviction Affidavit, Non-Collusion Affidavit, Campaign Contribution Affidavit, Debt Disclosures Affidavit and E-Verify Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.
15. **NON PUBLIC WORK BIDS - Completed, Signed and Properly Notarized Affidavits Required** in conformity with the provisions contained in LSA – RS 38:2224 and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Collusion Affidavit, Debt Disclosures Affidavit and Campaign Contribution Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled NON PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.
16. The ensuing contract for this bid solicitation may be eligible for FEMA reimbursement and/or Federal funding/reimbursement. As such, the referenced appendix will be applicable accordingly and shall be considered a part of the bid documents. All applicable certifications must be duly completed, signed and submitted with bid submission. Failure to submit applicable certifications with bid submission will result in bid rejection.

It shall be the duty of every parish officer, employee, department, agency, special district, board, and commission; and the duty of every contractor, subcontractor, and licensee of the parish, and the duty of every applicant for certification of eligibility for a parish contract or program, to cooperate with the Inspector General in any investigation, audit, inspection, performance review, or hearing pursuant to Jefferson Parish Code of Ordinances Section 2-155.10(19). By submitting a bid, vendor acknowledges this and will abide by all provisions of the referenced Jefferson Parish Code of Ordinances.

DATE: 7/21/2017

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BID NO.: 50-00120430

JEFFERSON PARISH
PURCHASING DEPARTMENT
P.O. BOX 9
GRETNA, LA. 70054-0009
504-364-2678

VENDOR: _____

BUYER: SFOLSE

As per LSA-RS 47:301 et seq., all governmental bodies are excluded from payment of sales taxes to any Louisiana taxing body. Quotations shall be based on F.O.B. Agency warehouse or jobsite, anywhere within the Parish as designated by the Purchasing Department.

JEFFERSON PARISH reserves the right to cancel all or any part of an order if not shipped promptly. No charges will be allowed for parking or cartage unless specified in quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel at any time and for any reason by issuing a THIRTY (30) day written notice to the contractor.

JEFFERSON PARISH is expecting all products to be new and all work to be done in workman-like manner, according to standard practices. Any deviations or alteration from the specifications must be indicated on the bid form for each item and upon request, product data for same must be submitted by the time specified by the Purchasing Department.

DELIVERY: FOB JEFFERSON PARISH	
INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES	<u>4-6 WEEKS</u>
INDICATE STARTING TIME (IN DAYS) FOR CONSTRUCTION WORK	_____
INDICATE COMPLETION TIME (IN DAYS) FOR CONSTRUCTION WORK	_____

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: _____
NUMBER: _____
NUMBER: _____
NUMBER: _____

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) _____

*** ALL BIDDERS MUST COMPLETE SECTION BELOW ***	
FIRM NAME: <u>FLUID PROCESS & PUMPS</u>	
SIGNATURE: <u>Bill Bloom</u> (Must be signed here)	TITLE: <u>SALES</u>
PRINT OR TYPE NAME: <u>Bill Bloom</u>	
ADDRESS: <u>P.O. BOX 10608</u>	
CITY, STATE: <u>NEW ORLEANS, LA.</u>	ZIP: <u>70181</u>
TELEPHONE: <u>504 733-1330</u>	FAX: <u>504 736-9348</u>
EMAIL ADDRESS: <u>BB@FLUIDPROCESS.NET</u>	

TOTAL PRICE OF ALL BID ITEMS: \$ 28,120.00

INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00120430

SEALED BID

ITEM NUMBER	QUANTITY	U/M	DESCRIPTION OF ARTICLES	UNIT PRICE QUOTED	TOTALS
1	1.00	EA	<p>ONE TIME PURCHASE OF A HYDROMATIC PUMP FOR THE JEFFERSON PARISH EB DEPARTMENT OF SEWERAGE.</p> <p>0010-Hydromatic S8LXP5000FB pump with 50 foot cords, 50 hp, 460/3/60, 1150 rpm explosion-proof premium efficient submersible non clog sewerage pump and motor with 8 inch discharge to match the extising pumps dimensions and hydraulics.</p>	28,120. ⁰⁰	28,120. ⁰⁰

SPECIFICATIONS
8 INCH SUBMERSIBLE NON-CLOG SEWER PUMP
JEFFERSON PARISH DEPT. OF SEWERAGE
Elizabeth & West Napoleon Sewer Pump Station

PART 1 - GENERAL

1.1 GENERAL

The bidder shall supply one (1) submersible explosion-proof, premium efficiency, solids handling pump for the Elizabeth & West Napoleon Sewer Pump Station. The pump must fit into the existing rail system, utilize the existing sealing flange, and fit into the aluminum hatches at the station – with no modifications to the existing equipment. The pump must match the hydraulic performance limits listed in these specifications. The pump motor shall bear a S.S. nametag showing FM approval for Class I Division I explosion proof environments. The pump shall be supplied by a factory authorized agent.

1.2 OPERATING CONDITIONS

The pump shall be rated 50 H.P., 460 volts, 3 phase, 60 hertz, maximum 1150 R.P.M. The unit shall produce 2600 GPM at 57 feet TDH, with a minimum pump efficiency of 75 percent, and maximum input KW of 34.3. The pump shall be capable of handling a minimum 4 inch spherical solid. The pump shall be non-overloading throughout the entire range of operation without employing service factor. The pump shall have an auxiliary duty point of 3300 GPM @ 42 feet TDH, with a minimum 73 percent pump efficiency. The pump shall have a minimum shut off head of 115 feet. The pump motor shall reserve a minimum service factor of 1.3. The performance curve shall state in addition to head and capacity performance, the pump efficiency, solid handling capacity, and reflect motor service factor.

PART 2 – PRODUCTS

2.1 CONSTRUCTION

The pump shall be a centrifugal, non-clog, solids handling, submersible, wastewater type; model S8LXP as manufactured by Hydromatic Pumps, or approved equal. The pump volute, motor, and

seal housing shall be high quality gray cast iron, ASTM A-48, Class 30. The pump discharge shall be fitted with an 8 inch standard ASA 125-pound flange, faced and drilled. All external mating parts shall be machined and Buna N Rubber O-ring sealed on a beveled edge. Gaskets will not be accepted. All fasteners exposed to the pumped liquids shall be 300 series stainless steel.

2.2 ELECTRICAL POWER CORD

- A. The electrical power cord shall be 50 feet long and made of STW-A, water resistant 600 V, 60 degrees Celsius, UL, and CSA listed. It shall be dependent on amp draw for size. The pump shall have an independent sensor cord containing motor overtemp and moisture sensor wires.
- B. The pump shall be double protected with a compression fitting and epoxy potted area at the power cord entry to the pump. A separation between the junction box area of the pump and the motor by a stator lead sealing gland or terminal board will not be accepted.
- C. The power cable entry into the cord cap assembly shall first be made with a compression fitting. Each individual lead shall be stripped down to bare wire at staggered intervals, and each strand shall be individually separated. This area of the cord cap shall then be filled with an epoxy compound potting, which will prevent water contamination to gain entry, even in the event of wicking or capillary attraction.
- D. The power cord leads shall be connected to the motor leads with extra heavy connectors having brass inserts with a screwed wire to wire connection, rather than a terminal board that allows for possible leaks.
- E. The cord cap assembly, where bolted to the connection box assembly and the connection box assembly, where bolted to the motor housing shall each be sealed with a Buna N Rubber O-ring on a beveled edge, to assure proper sealing.

2.3 MOTOR

- A. The stator, rotor, and bearings shall be mounted in a sealed and oil filled submersible type housing. The stator windings shall

have a minimum Class H insulation (180 degrees Celsius or 356 degrees Fahrenheit), NEMA B design (3-phase). Air filled designs will not be accepted. Further protection shall be provided by "on winding" thermal sensors.

- B. The pump and motor shall be specifically designed so that they may be operated partially or completely submerged in the liquid being pumped.
- C. The motor stator shall be slip fit mounted into the watertight casing. Stators must be capable of being repaired or rewound at local motor service facilities. Heat shrink motor fits, will not be accepted. No special tools shall be required for pump and motor disassembly.
- D. Motor shall be equipped with integral heat sensors, one for each phase (three phase motor). The heat sensor(s) shall be a low resistance; bi-metal disc that is temperature sensitive. They shall be mounted directly on the stator windings. The sensors shall be connected in series with motor starter coil so that the pump ceases operation when an over-temperature condition is sensed. These sensors shall be used in conjunction with and supplemented by external motor over-current protection located at the control panel. The pump shall cease operation when the overload is tripped. The overload shall be manually reset.
- E. Motors shall have a service factor of 1.3 or greater.
- F. Cable Entry: The cable entry water seal design shall be such that it precludes specific torque requirements, to ensure a watertight and submersible seal. It shall permit no entry of water into any high voltage area, even if the cable is severed below the water level.
- G. Cooling System: Each pump shall be provided with an adequately designed cooling system. Water jackets or closed loop cooling systems will not be accepted.
- H. Motors shall conform to the NEMA Premium Efficiency Electric Motor Program.

Motors must meet or exceed the nominal energy efficiency levels listed in NEMA standards publication MG 1-2006, tables 12-12 and 12-13.

2.4 BEARINGS AND SHAFT

- A. An upper radial bearing and a lower thrust bearing shall be provided. These shall be heavy-duty single row ball bearings, which are permanently lubricated by the dielectric oil which fills the motor housing. Sealed grease packed bearings will not be accepted. Bearings that require lubrication according to a prescribed schedule will not be accepted. The upper radial bearing shall have a minimum B-10 life at the specified condition of 50,000 hours. The lower double row thrust bearing shall have a minimum B-10 life at the specified condition of 50,000 hours.

- B. The shaft shall be machined from a solid 416 series stainless steel forging. The design shall be of large diameter with minimum overhang, to reduce shaft deflection and prolong bearing life.

2.5 SEALS

- A. The pump shall have two mechanical seals, mounted in tandem, with an oil chamber between the seals. Seals shall be used with the rotating seal faces being carbon and the stationary seal faces to be silicone carbide. The lower seal shall be replaceable without disassembly of the seal chamber and without the use of special tools. Pump-out vanes shall be present on the backside of the impeller to keep contaminants out of the seal area. Units that require the use of foreign manufactured seals will not be accepted.

- B. The pump shall be equipped with a seal leak detection probe and warning system. This shall be designed to alert maintenance personnel of lower seal failure, without having to take the unit out of service for inspection or requiring access for checking seal chamber oil level and consistency.

- C. There shall be an electric probe or seal failure sensor installed in the seal chamber between the two tandem mechanical seals. The seal fail circuit shall use a probe that has no moving parts. If the lower seal fails, contaminants which enter the seal chamber shall be detected by the sensor and send a signal to the specified warning device.

D. Units equipped with opposed mechanical seals will not be accepted.

2.6 IMPELLER

- A. The impeller shall be of the two-vane, enclosed non-clogging design. It shall have pump-out vanes on the front and backside, to prevent grit and other materials from collecting in the seal area. Single vane design impellers which cannot be easily trimmed, do not maintain balance, and reduce seal and bearing life will not be accepted. Impeller shall not require coating. Because most impeller coatings do not remain beyond the very early life of the impeller, efficiency and other performance data submitted shall be based on performance with an uncoated impeller. Attempts to improve efficiency by coating impeller will not be acceptable. The impeller shall be manufactured from ductile iron ASTM A-536 material.
- B. Impellers shall be dynamically balanced. The tolerance values shall be according to the International Standard Organization grade 6.3 for rotors in rigid frames. The tolerance is to be split equally between the two balance planes, which are the two impeller shrouds.

RPM Tolerance

1150 .026 in. - oz./lb. of impeller weight

- C. The impeller shall be slip fit to a tapered shaft and key driven. A 300 series stainless steel washer and impeller bolt shall be used to fasten the impeller to the shaft. Straight end or threaded shafts for attachment of the impeller will not be accepted.

2.7 CASING

- A. The casing shall be of the end suction volute type, having sufficient strength and thickness to withstand all stress and strain from service at full operating pressure and load. The casing shall be of the centerline horizontal discharge type. The design shall be such that the pumps will be automatically connected to the discharge piping when lowered into position with the guide rails. The casing shall be accurately machined and bored for register fits with the suction and casing covers.
- B. A volute case wearing ring shall be provided to minimize impeller wear. The wear ring shall be 300 series stainless steel or bronze ASTM # B584-932, and held by 300 series stainless steel fasteners. The wear ring shall be easily replaceable in the field. Wear rings of any other material will not be accepted.

2.8 PAINTING

- A. The pump shall be painted after assembly and testing, with a dark green water reducible air dry enamel. The paint shall be applied in one

coat, covering all exterior surfaces. The pump shall be air dried after testing and before painting.

2.9 SERVICEABILITY

- A. The complete rotating assembly shall be capable of being removed from the volute without disturbing discharge piping or volute. The motor housing, seal housing with seal plate and impeller still attached to the shaft shall be capable of being lifted out of the volute case from the top as one assembly.

2.10 SUPPORT

- A. Though the pump may not require feet to support the unit while installed, the pump volute must have feet to support the unit when removed for service. Units which do not have feet upon which the unit can be supported when removed for service will not be accepted.

PART 3 - TESTING

- A. Commercial testing shall be required and include the following:

1. The pump shall be visually inspected to confirm that it is built in accordance with the specification as to HP, voltage, phase, and hertz.
2. The stator motor leads shall be tested for integrity, using a meg-ohm meter at the highest setting.
3. Pump shall be allowed to run dry to check for proper rotation.
4. Discharge piping shall be attached; the pump submerged in water and amp readings shall be taken in each leg to check for an imbalanced stator winding. If there is a significant difference in readings, the stator windings shall be checked with a bridge to determine if an unbalanced resistance exists. If so, the stator shall be replaced.
5. The pump shall be removed from the water, meg-ohm meter tested again, dried, and the motor housing filled with dielectric oil.

PART 4 - WARRANTY

- A. The pump unit or any part thereof shall be warranted against defects in material or workmanship for one year from date of installation, or 18 months from date of manufacture, whichever comes first. Defects shall be replaced at no charge with a new or manufactured part, F.O.B. factory or authorized warranty service station. The warranty shall not assume responsibility for removal, reinstallation or freight, nor shall it assume responsibility of incidental damages resulting from

the failure of the pump to perform. The warranty shall not apply to damage resulting from accident, alteration, misuse, or abuse.