

Town of Wascott  
PO Box 159  
Wascott, WI 54890

**BID**  
**For Wascott Fire Department**  
**Water Well and A Submersible Water Pump-2012**

**General Information:**

- 1) This project is for the drilling of a Water Well and a Submersible Water Pump at the Wascott Fire Department located at 7607 E County Road T, Wascott, WI.
- 2) All bids shall be placed in a sealed envelope and marked "Wascott Fire Department Water Well and Submersible Water Pump Bid".
- 3) Mail bids to Town of Wascott, PO Box 159, Wascott, WI 54890. **Bids are due by Noon, Monday, October 26, 2012. Bid opening shall be at 2:00 p.m. October 26, 2012,** at the Wascott Fire Department Hall, 7607 E County Road T, Wascott, WI 54890
- 4) The Bid must comply with all material requirements of the bid invitation and specifications. The Fire Department reserves the right to reject any bid determined to be nonresponsive. The Fire Department reserves the right to reject any or all bids or portions of bids as determined to be in the best interest of the Fire Department.
- 5) A written notice of award will be given to the successful bidder. The bidder(s) are required to execute the public contract and furnish required certificates of insurance within ten (10) calendar days from the date of the notice of award.
- 6) Payment shall be made within 30 days of receipt of a properly completed invoice or receipt and acceptance of the property or service.
- 7) If you have any questions, contact Chief Tom Michalek at 715/520-3473.

Town of Wascott  
PO Box 159  
Wascott, WI 54890

**BID PROPOSAL**  
**for**  
**Wascott Fire Department Water Well & Submersible Pump-2012**

Submitted by the undersigned bidder to the Town of Wascott, Wisconsin in accordance with the advertisement inviting bid proposals, which will be received until **Noon, Friday, October 26, 2012**, to furnish and deliver all materials, and to do and perform all work designated in accordance with the Contract documents.

The undersigned bidder, if awarded the Contract, agrees to complete the work as scheduled.

The undersigned bidder, submitting this proposal, hereby declares and agrees to be bound, and to perform the work, in accordance with all terms, conditions and requirements of the within and foregoing proposal, the Contract, the applicable specifications, the special provisions, and the Advertisement for Bid are made part hereof as fully and completely as if attached hereto.

**PROPOSAL Submitted By:** \_\_\_\_\_  
(Print Name of Bidder)

**Of** \_\_\_\_\_  
(Sole Owner, Co-Partnership of Corporation)

Note: If a corporation, incorporated under the laws of the State

of \_\_\_\_\_

**Signature of Bidder** \_\_\_\_\_

**Mailing Address** \_\_\_\_\_

**Phone** \_\_\_\_\_ **Email** \_\_\_\_\_

**BID SPECIFICATIONS**  
**For Wascott Fire Department**  
**Water Well and A Submersible Water Pump-2012**

**FD SUBMERSIBLE WELL PUMP-SPECIFICATIONS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Submersible Pumps.
- B. Pitless adapter for top of well. The well casing is 10 inch diameter.
- C. Variable Frequency Drive

**1.02 RELATED SECTIONS**

- A. Conditions of the Contract, Supplementary Conditions of the Contract, and all Division 01 Sections apply to the work of this Section.

**1.03 REFERENCES**

- A. The following documents, in their latest edition, form a part of this Section to the extent specified herein
  - 1. American Water Works Association- ANSI/ AWWA E101, Vertical Turbine Pumps- Line Shaft and Submersible Types.
  - 2. Wisconsin Department of Natural Resources- Water Well Construction Code

**1.04 DESIGN REQUIREMENTS**

- A. Conform to the following performance requirements:

- 1. Pump :
  - a. Capacity 200GPM
  - b. Head (TDH) 183 Feet (35)psi
  - c. 230 Volt Three Phase
  - d. Maximum Pump Speed 3500RPM
  - e. Estimated Motor Size 15hp
  - f. Column Diameter 4 Inches
  - g. Length of Column 100 Feet

- B. Final pumping conditions may be modified after the well is test pumped. For Bidding purposes, the information listed above shall be used.

**1.05 SUBMITTALS**

- A. Each Supplier furnishing quotations to Bidders, submit the following data to the Engineer about time of Bids:
  - 1. Pump data sheet.
  - 2. Pump Performance curve showing capacity, head, efficiency, and horsepower over complete range of bowl assembly.
  - 3. Motor performance showing efficiency and power factor at full, three-quarter, and one-half load.
- B. Shop drawings in accordance with Division 01.
- C. Operation and Maintenance Manuals in accordance with Division 01.

## **PART 2 PRODUCTS**

### **2.01 APPROVED MANUFACTURERS**

- A. Pump: Grundfos/Franklin providing pumps that conform to the material and performance Specifications here in.
- B. Motor: Franklin
- C. Pitless: Maas JX Pitless Unit.

### **2.02 PITLESS ADAPTER**

- A. Pitless unit same diameter as well casing for welding to casing.
- B. Plain end 4 inch steel pipe outlet, minimum 12 inch length and threaded 1 inch steel pipe outlet,  
minimum 12 inch length.
- C. Stainless Steel and brass mating surfaces.
- D. Center lifting pipe to top of pitless with hold-down mechanism.
- E. Large weatherproof terminal box below removable top section, with box connection for conduit size  
shown on Drawing.
- F. Screened well vent at top of pitless.
- G. Factory pressure test pitless to 250 psi and provide certified test results to Engineer.

### **2.03 COLUMN AND COUPLINGS**

- A. Column conforming to ASTM A53, Grade A, Schedule 40 steel pipe with taper threads.
- B. Uniform lengths of approximately 20 feet, except as needed to provide column length specified.
- C. Threaded ends, faced perpendicular to axis.
- D. Long taper thread couplings Type R and D, or API of ASTM A108, Grade 1020 Steel.
- E. Adapter section to pitless and/or pump discharge.

### **2.04 COLUMN CHECK VALVE**

- A. Manufacturer: Flowmatic 80 DIX.
- B. Ductile iron body, double guided ductile iron poppet with stainless steel spring and fasteners.

- C. Buna-N sealing member.
- D. Female threaded ends to fit specified column.

## 2.05 PUMP

- A. Multi-stage, turbine type with stainless steel fasteners.
- B. Suction case, intermediate bowls, and discharge bowl of ASTM A48, Class 30 cast iron with porcelain enamel coated water passaged.
- C. ASTM B505 or B584 ALY 836 bronze bearing at each intermediate bowl, and long bronze bearing at discharge bowl and suction case.
- D. ASTM B584 ALY 836 cast bronze, enclosed type impellers machine balanced and filed for optimum performance and minimum vibration.
- E. ASTM A276, Type 416 stainless steel tapered impeller lock collets.
- F. ASTM A276, Type 410 or 416 stainless steel pump shaft or sufficient diameter to transit pump horsepower with a liberal safety factor.
- G. Close grained cast iron lower section designed to serve as suction inlet, lower bearing housing, and motor adaptor.
- H. Bronze or rubber sand collar to protect lower bearing.
- I. Lower housing designed to prevent entrance of abrasive material into top end of motor.
- J. Stainless steel inlet strainer with net inlet area 5 times the impeller inlet area.
- K. Housing connecting motor to bowl assembly of sufficient size and strength to withstand maximum torque generated by motor plus a safety factor.
- L. Shift coupling of 416 stainless steel keyed or splined to shafts.
- M. Pump constructed of stainless steel are considered equal to the above requirements.

## 2.06 SUBMERSIBLE MOTOR

- A. Pump No. 1 Motor:
  - 1. Designed for underwater operation n 230 volt, 3-phase power, and compatible for use with a Variable Frequency Drive.
- B. Minimum 1.10 service factor.
- C. Non-overloading of motor nameplate horsepower within design performance range specified.
- D. Mechanical seal where motor shaft extends through motor housing to isolate pumped water from cooling fluids.
- E. Fluid in motor circulated throughout for cooling or rotor, stator winding, and bearings.
- F. Provision for balancing pressure inside and outside the motor.
- G. Stator and motor casing of steel and upper bearing bracket of close grained cast iron.
- H. Bronze sleeve bearings at each end of rotor shaft.
- I. Pivot shoe type thrust bearing to carry weight of rotating parts and hydraulic thrust of pump.
- J. Stainless steel motor shaft.

## 2.07 POWER CABLE

- A. Power cables sized to conform to National Electrical Code for 125 percent of motor full load amps at a conductor temperature rating of 75 degrees C.
- B. Ground conductor from motor to pitless of same size as power cable.
- C. Each conductor in insulating, watertight synthetic rubber or plastic jacket impervious to oil of flat or round type.
- D. Sufficient length to allow easy connection in terminal box and slack cable within pitless unit.
- E. Style of cable to provide easy installation and clearance between column couplings and casing.
- F. Cable fastened to column with stainless steel fasteners at intervals not exceeding 20 feet.

## 2.08 VARIABLE FREQUENCY DRIVE

- A. Yaskawa / or equivalent 40HP Variable Frequency Drive. Drive will convert single phase 230 volt power to 230 volt 3-phase power to run 15 HP 230 volt, 3-phase motor.

## 2.09 WELL LEVEL MONITORING TUBING

- A. Install a 1 inch heavy wall polyethylene tubing strapped to the 3 inch column for the insertion of the well level monitoring cable.
- B. Tubing to extend from bowl to near top of pitless unit.
- C. Seal connection per Wisconsin Well Code.

## 2.10 PRESSURE TANK

- A. Install a WX302 with Pressure Transducer , pressure tank.

## 2.11 WATERLINE FROM PITLESS

- A. Install a 4 inch approved plastic waterline from pitless to building.

# **PART 3 EXECUTION**

## 3.01 DISINFECTION

- A. Disinfect well with chlorine solution in conformance with the Wisconsin DNR Water Well Construction Code.
- B. Volume and strength of solution to provide a 50-ppm concentration in well.
- C. Flush inside of well casing with fresh potable water immediately after chlorine addition.
- D. Chlorine solution to remain in well at least 12 hours.

## 3.02 PITLESS INSTALLATION

- A. Cut existing well casing to proper elevation for pitless installation.
- B. Excavation to be free of water near casing connection conforming to Well Code Requirements.

- C. Weld pitless to casing with continuous, full penetration weld.
- D. Connect discharge to water lines with pipe couplings.
- E. Coat pitless weld and discharge pipe couplings with bituminous epoxy paint prior to backfilling.
- F. Prior to backfilling, pressure test weld as required by Wisconsin DNR Water Well Construction Code.
- G. Backfill around pitless with select material from Project Site bringing full up uniformly in 6 inch lifts compacted in place.

### 3.03 PUMP INSTALLATION

- A. Check to see if bowl assembly is free of foreign material and impeller shaft does not bind.
- B. Motor leads connected to power cable with heat shrink, submersible connection, and adequately secured to motor and bowl assembly.
- C. Touch-up column and coupling exterior where damaged with quick drying paint suitable for potable water use.
- D. Secure top section of column to pitless adapter.
- E. Carefully install adapter to prevent damage to sealing surfaces.

### 3.04 PERFORMANCE TEST

- A. Field test each pump performance at 2 operating points selected by Engineer.
- B. Measure and record the following data at static level and each operating point:
  - 1. Static water level.
  - 2. Pumping water level.
  - 3. Static discharge pressure.
  - 4. Pumping discharge pressure.
  - 5. Flow rate.
  - 6. Non-running voltage (3 legs).
  - 7. Running voltage (3 legs).
  - 8. Running amps (3 legs).
- C. Discharge test water from well to water way.
- D. Provide discharge pipe from connection location as directed by the Engineer.
- E. Hold each pump for performance test.
- F. Repair damages, resulting from testing, at no cost to Owner.
- G. Provide water meter, gauges, and water level detection devices for performance testing of each pump.
- H. Modify or replace pumps as necessary to meet Specifications.

### 3.05 INSTRUCTION

- A. Perform performance testing in presence of Owner's personnel.
- B. Instruct Owner's personnel in operation of pumping equipment.
- C. Instruct Owner's personnel in maintenance of equipment.



## **FD WATER WELL SPECIFICATIONS**

### **PART 1 GENERAL**

#### **1.06 GENERAL**

- D. Construct water supply well by using Dual Rotary Drilling
- E. Develop and test pump well.
- F. Perform water quality analysis.

#### **1.07 PROCEDURE**

- G. Completed well is to have a target capacity of 200 to 250 gallons per minute.

#### **1.08 ACCEPTED DRILLING METHODS**

- K. The well will be constructed with a 10 inch casing.
  - Drill in 10 inch well casing using dual rotary drilling.
  - Install 10 inch telescoping well screen.

#### **1.09 REFERENCES**

- N. Wisconsin Administrative Rules Chapter NR812, Department of Natural resources (Well Code).

#### **1.10 SUBMITTALS**

- D. Wisconsin DNR High Capacity Well Permit
- E. Close-Out Submittals:
  - 1. Drillers Well Log and State Well Construction Report.
  - 2. Water analysis.
  - 3. Test pump record.

#### **1.11 QUALITY ASSURANCE**

- A. Conform to Well Code and subsequent amendments and regulations of the Wisconsin Department of Natural resources.
- B. Obtain and pay fees for all permits required for construction of well.
- C. The Contractor shall not sublet any Work or allow and Work to be done by others, unless approved by the Owner in writing.

#### **1.12 GEOLOGY**

- A. Estimated Geology based on wells in the area:

0 to 40	Sand
40 to 80	Clay/Gravel
80 to 180	Sand/Gravel

Geology in the area is expected to be a variation of sand/gravel/clay. Well Contractor to determine what area of geology will produce highest quantity of water.

- B. It is recommended Bidders consult the Wisconsin Geological and Natural History Survey for other information on geology in the area.

## **PART 2 PRODUCTS**

### **2.01 WELL CASING**

- A. Conform to Well Code for steel casing thickness, weight, and quality.
- B. Conform to Well Code for welded joints for well casings.
- C. Casing pipe shall be new, straight, completely circular, and ends cut square and perpendicular to axis.
- D. Casing manufactured by reputable pipe manufacturer delivered to the Site free from burrs, abrasions, and defects.

### **2.02 GROUT**

- A. Conform to the type of grout required by Well Code.
- B. Bentonite
  - 1. Conform to Well Code for material quality and form.
- C. Grout
  - 1. Portland cement neat grout, mixed one 94 pound bag of Portland cement to not more than 6 gallons of clean water.
  - 2. Grout will be considered 23 bags per cubic yard when mixed on Site.

### **2.03 SILT FENCE**

- A. Conform to WisDot specification standards for heavy duty machine sliced.

## **PART 3 EXECUTION**

### **3.01 SAFETY**

- A. The Contractor shall furnish and install a 4-foot high orange safety fence around his equipment and work area for protection of the public.
- B. All safety precaution materials and work are considered incidental to the Project.
- C. Install silt fence in accordance with Wisconsin Department of Natural Resources Conservation Practice standard. Maintain fence throughout the Project.

### **3.02 CONSTRUCTION OF WELLS**

- A. Construct well in accordance with Well Code.

- B. Construct well with rotary, or dual-rotary “Barber” equipment.
- C. Construction procedures and quantities on the Bid Form are general for informational and bidding purposes. Procedures and quantities adjusted by the Owner as necessary for the geological conditions encountered.
- D. Construction procedures generally described in Paragraph 1.03 – Unit Prices.

### 3.03 WELDING

- A. Welding of casing joints performed by operators previously qualified as prescribed in American Welding Society “Standard Qualification Procedure” for type of Work required.

### 3.04 SAMPLES

- A. Obtain 1 sample of drilled material for each change in strata and every 5 feet of depth.
- B. Samples directly representative of strata from which it was taken.
- C. Samples placed in suitable containers, sealed and sample depth clearly marked.
- D. Deliver 1 sample to Wisconsin Geological and Natural History Survey.

### 3.05 WELL DEVELOPMENT

- A. Develop well by surging, decompressing, or airlifting depending on the well construction.