



## SAMPLE ENGINEERING SPECIFICATIONS FOR PITLESS UNITS

### PART 1 GENERAL

#### 1.01 SUMMARY

A. Section Includes:  
Complete assembled Pitless Unit System including well cap, lift-out bail, hold down hooks, lift out pipe, discharge body with support ring, spool with or without check valves and pressure equalizing passages.

#### 1.02 SUBMITTALS

A. All bidders shall submit as part of their bid:  
1. The Manufacturer and Model of the Pitless Unit to be installed.  
2. Detailed Specifications with Drawings of the System furnished by the manufacturer.

### PART 2 PRODUCTS

#### 2.01 PITLESS UNIT

The Pitless Unit shall be equal to Baker Manufacturing Company, Monitor Division, Model \_\_\_\_\_. The unit should be factory assembled, before shipping to the site. The pitless unit must conform to the Recommended Standards for Water Works, Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers, Health Education Services, Albany, NY., and/or Water Systems Council PAS-97 (04).

##### 2.01.01 WELL CAP

The Watertight Cap shall be secured to the pitless casing with a compression gasket. The top of the cap can be removed without affecting the sealed conduit or wiring. The heavy duty watertight cap will have a separate protected downward facing stainless steel screened well vent with pipe nipple. Construction of the cap and well vent will be of heavy duty gray cast iron and painted with a green enamel finish.

##### 2.01.02 UPPER CASING

The Upper Casing is factory assembled to the discharge body, and the lift out and hold down mechanism are factory assembled to the spool. Upper casing thickness must conform to the Recommended Standards for Water Works, and be coated with a rust protective coating. The upper casing must provide a watertight connection from the discharge body to the well cap. The discharge port center line to be \_\_\_\_\_ feet below grade, and the pitless upper casing to extend \_\_\_\_\_ feet above grade.

##### 2.01.03 SPOOL

The spool shall include \_\_\_\_\_ NPT per ANSI B 1.20.1 male or female drop pipe connection and shall be constructed of lead-free galvanized heavy duty gray cast iron, ductile iron, or steel with a lead-free galvanized plating on the wetted surface of over .010 inches thick. The spool will have o-ring grooves machined into the spool retaining the o-rings when setting or pulling the system.

The positive pressure o-ring seals shall be constructed of neoprene or equivalent. Spool shall be designed to accommodate probe tubes or water samplers and NPT ports for discharge pressure taps. O-ring protection should be provided to prevent the seals from dragging on the upper casing when the pump is installed or removed.

##### 2.01.04 DISCHARGE BODY

The Discharge Body shall be constructed of lead-free galvanized ductile iron or lead-free galvanized steel. O-ring seat to be designed to prevent crevice and galvanic corrosion, **dissimilar metals should be avoided**. Discharge body designed to be strong enough to prevent distortion due to vertical movement of discharge pipe thereby allowing spool to bind in the discharge body. Minimum I.D. of the discharge body to be equal to or greater than I.D. of the well casing for ease in well servicing.

##### 2.01.05 HOLD-DOWN MECHANISM

The Pitless Unit spool should have a hold down mechanism, factory assembled to spool and capable of preventing rotation of the pitless spool relative to the discharge body, at full rated locked rotor torque of the submersible pump motor. The spool must also have a factory assembled lift out pipe and bail, or spider capable of \_\_\_\_\_ lbs. rated load, to allow lifting a water filled drop pipe and pump out of the well for service. Components to be constructed of ductile iron or steel with a corrosion resistant coating.

##### 2.01.06 CHECK VALVES (Optional)

Optional Check Valves may or may not be provided in the removable spool of the pitless unit. These should be low pressure drop, self cleaning, swing type check valves, with elastomer seal at seat, and constructed of corrosion resistant materials.