SERIES 640
SINGLE STAGE SEWAGE PUMPS

1.0 GENERAL

The contractor shall furnish (and install as shown on the plans) Aurora Model 642 Duplex front or back pull out centrifugal non-clog pump size 2x2x9 of ?(bronze fitted) (all bronze) (all iron) (stainless steel) construction. Each pump shall have a capacity of US gpm at ft total head, with a temperature of 60 °F, 1 specific gravity. The units shall be designed for a pit depth of ? feet and shall be furnished with (an above the floor discharge terminating at the baseplate with a male threaded connection) (a below the floor discharge terminating at the baseplate with a female threaded connection).

2.0 BASEPLATE

A steel baseplate ?(round) (square) (simplex) (simplex with oval) (simplex with oval and manhole) (duplex with ovals and manhole) will be provided.

2.1 CASING

The pump casing, bearing cover and suction cover shall be of high tensile strength cast iron. The casing is to be of the single stage design.

2.2 IMPELLER

The cast iron impeller is of the ?(enclosed) (semi-open) non-clog type and shall be capable of passing a ? diameter sphere. Optional wearing rings of iron are to be furnished and shall be held in place by means of machine screws. The impeller running clearances will be of the face type to provide simple adjustments axially to compensate for wear. The impeller is to be dynamically balanced before it is keyed and secured to the pump shaft.

2.3 COLUMN PIPE

The column pipe must be heavy duty with a minimum diameter of ?" having machined tongue and groove joints to insure shaft alignment. The pump shaft shall be a minimum of 1-3/16" diameter.

2.4 BEARINGS

A pump bearing will be located directly above the impeller and shall be of the heavy duty ?(bronze sleeve) (cutless rubber) (relief) (spool) type. Line bearings must be provided on pumps designed for a pit depth of 6'-2" and one additional bearing for each 5' of setting thereafter. All standard sleeve or relief pump and line bearings must be ?(grease) (oil) (water) lubricated through separate Nylon tube lubrication lines terminating at the baseplate. Standard bearings will be grease lubricated (unless otherwise specified). The bearings must have internal lubrication grooves to provide adequate lubrication of the complete bearing running surface.

2.5 MOTOR PEDESTAL

The motor pedestal is to be of cast iron, two piece construction, fitted with a sealed thrust ball bearing located 6" above the baseplate.

2.6 STUFFING BOX

A packed stuffing box complete with a split gland shall be provided for gastight construction. The upper head shall be of sufficient height to elevate the motor shaft extension should the motor be removed for servicing.

2.7 BEARING COLLAR/GREASE SEAL The ball bearing collar is to have a hexagonal arrangement to allow external axial adjustment of the shaft and impeller. Grease seals shall be provided to retain grease and to prevent contamination of the vertically mounted ball bearing. A grease fitting will be provided to allow regreasing of the bearing.

2.8 FLOAT

The pump shall be controlled by an enclosed ?(heavy duty) (water tight)
(explosion resisting) (explosion proof) type float operated switch 6" above the baseplate with fiberglass reinforced float and float rod. A flexible bellows will provide gas-tight construction.

3.0 MOTOR

An automatic alternator shall be furnished on duplex pumps to allow the pumps to alternate on each successive cycle of operation. The pumps are to be driven by and flexible coupled to a standard "HP" ? H.P., ? volt 60 cycle 1200 R.P.M., ? vertical solid shaft ?(open drip-proof) (totally enclosed) (explosion proof) vertical electric open drip-proof motor.

3.01 CONDITIONS OF SERVICE

The following conditions of service shall be strictly adhered to:

Number of Units ..... ?
Type of Drive .....? (variable or constant)
Discharge Size, minimum ..... 2 in
Suction Size, minimum ..... 2 in
Sphere Size, minimum ..... ? in
Design Capacity ..... US gpm
Design Head ..... ft
Efficiency at Design, minimum ..... %
Rotative Speed, maximum ..... 1150 RPM
Shut-off Head, minimum ..... 44.8 ft
Driver Horsepower, minimum ..... ? hp
NPSHR at Design, maximum ..... ft
Secondary Capacity ..... ? US gpm (at maximum RPM)
Secondary Head ..... ? ft (at maximum RPM)

3.02 INSPECTION AND FACTORY TESTS

A. The Engineer shall have the right to inspect or witness test any material or equipment to be furnished, under this section, prior to their shipment from point of manufacture. The Engineer shall be notified at least ten (10) working days in advance of any testing in order to exercise or waive the right to witness any testing.

B. Each centrifugal wastewater pump furnished under these specifications shall be tested at the factory in accordance with the latest edition of the Hydraulic Institute Standards for both hydrostatic pressure and performance. Certified copies of all test

reports shall be submitted to the Engineer for approval prior to shipment.

C. Each pump shall be tested at the full load speed of the respective driver for head, capacity, brake horsepower and efficiency from shut-off to 150% of design capacity. In addition, for variable speed units, one
(1) pump of each service shall be tested at the minimum design conditions plus three (3) equally spaced speeds between the minimum and maximum conditions.

D. Tests on all motors shall be conducted in accordance with IEEE Standards. All test results shall be submitted to the Engineer for approval prior to shipment.

1. Each motor shall be given a short commercial test which includes the following:
   a. No load running current
   b. High potential
   c. Winding resistance

3.03 INSTALLATION AND ACCEPTANCE TESTS

A. The pumping units shall be installed in accordance with the instructions of the manufacturer and as shown on the drawings by the Contractor.

B. Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the manufacturer's recommendations.

C. Furnish the services of an authorized factory representative to inspect the final installation, perform initial start-up and supervise the field acceptance tests of the equipment.

D. Field acceptance testing shall be conducted after the installation of all equipment has been completed and the equipment operated for an initial period to make all necessary adjustments and corrections. Each pumping unit shall be tested to determine satisfactory operation and compliance with these specifications in the presence of the Engineer or his representative. All expenses for conducting the field acceptance tests shall be borne by the Contractor.

NOTES: Teflon is a registered trademark of E.I. DuPont.

Additional information is available from any Aurora Pump authorized distributor.

Aurora Pump reserves the right to make revisions to its products and their specifications without notice.