Suggested Specifications
Furnish and install, as outlined on the equipment
schedule and described in these specifications, a double suction vertically mounted horizontal split case
centrifugal pump (pumps) designed to deliver the
scheduled flow rate at the specified total dynamic head (in feet).

Efficiency
Pump(s) shall meet or exceed the efficiency shown in the pump schedule.

Casing
Pumps shall have the casing divided on the shaft center line. The casing halves shall be accurately machined, bolted and doweled together. A non-asbestos
type gasket material will be furnished between the casing halves. The casing material shall be close-grained cast iron with a minimum tensile strength of 35,000 P.S.I. Removal of one casing half and bearing housings shall permit removal of the complete rotating assembly without disturbing piping connections. The casing shall be so designed as to permit horizontal mounting without modifying the casing. It shall be so designed as to permit affixing to additional side-wall bracing, without casing modification.

Straightening vanes shall be cast in both the bearing
housings and casing to reduce pre-rotation of fluid prior to entry into the impeller.

Casings shall be designed for scheduled working
pressure and shall be hydrostatically tested. Suction and discharge flanges shall be drilled to ANSI Standards and be machined flat face. Pumps shall be fitted with (lead- free bronze) renewable case wear rings indexed with a dowel pin for fixed positioning.

Impeller
The lead-free bronze impeller shall be an enclosed type double suction design, hydraulically and dynamically balanced. The impeller is to be securely mounted on the pump shaft, and attached with a steel key. The impeller shall be locked in position by threaded sleeves.

Bearings
The pump shaft shall be adequately supported by the pump bearings to limit the shaft deflection to .002 inches. The pump ball bearings shall be deep groove type with cartridge mounting, locked to shaft with positive locks, of ample size to withstand all axial and radial loads.
Each bearing housing shall be bolted to the upper and lower casing halves for a full 360 degree support registered fit to insure positive alignment.

Shaft Seal
The pump manufacturer shall recommend the proper mechanical seal based on the pressure, temperature and liquid outlined on the equipment schedule. The seal shall not rely on set screws or retaining rings for setting.

Shaft Sleeves
(Lead-free bronze) shaft sleeves shall be firmly attached to the pump shaft through threading and locking means. Shaft sleeve design shall prevent corrosion and wear to the shaft.

Pump Support/Baseplate
The pump shall be supported from below by a cast iron mounting stand, which shall be bolted directly to the
bottom of the casing. Supporting the casing from the side or top shall not be required, nor allowed.

Motors

The motor shall be sized to operate continuously without exceeding the horsepower rating (as outlined on the schedule) regardless of the flow and head throughout the entire range of operation.

Parts
All normally required spare parts shall be available in kit form selectable from the pump nameplate.

Energy Evaluation
The contractor shall insure that alternative pumps
submitted will meet the design flow, head and efficiencies as outlined in the equipment schedule. Pumps submitted that do not meet these specified efficiencies shall require an analysis of operating costs based upon 24 hours per day, 7 days a week operation.

Contractor shall credit the owner for the difference in
operating costs based on five year operation. Pump
manufacturer shall be PACO pumps or approved equal.

General Installation
Pump and motor shall be realigned by the contractor
according to the standards of the Hydraulic Institute after grouting of base and connection of piping.