NATURAL RESOURCES CONSERVATION SERVICE

CONSTRUCTION SPECIFICATIONS

PUMPING PLANT

1. Scope

The work shall consist of all construction operations and furnishing all materials for the complete installation of the pumping plant.

2. Location

Location of the pumping plant, building, and accessories shall be as specified on the construction plans or as staked in the field.

3. Pump and Power Unit

The pump or combination of pumps shall be capable of delivering the required water capacity at the total dynamic head and efficiency as specified on the plan. The power unit shall be capable of operating the pump at the maximum capacity and head without being in an overload condition. The pump supplier and/or contractor shall provide a copy of the manufacturer's pump curve, ratings, and other operating data to determine they will meet the capacity, head, and other operating requirements as specified on the plan.

All pertinent safety codes and manufacturer's recommendations shall be followed in the installation of the equipment. All revolving power unit and pump components shall be shielded or guarded to minimize inadvertent contact.

The pump and power unit base and foundation shall be constructed of material such as reinforced concrete, structural steel, or treated timber. The pump and power unit assembly shall be set on a firm base and securely fastened. The base shall be capable of withstanding the pump vibration and the dead load weight of the pump and power unit assembly.

Concrete. Concrete compressive strength shall be at least 3000 pounds per square inch (psi) at 28 days. The mix design shall be in accordance with American Society for Testing and Materials (ASTM) C 94. Concrete water shall be free of acid, alkali, oils, and organic matter. All concrete is to consist of a workable mix. Necessary curing shall be specified. Reinforcing steel shall be placed as indicated during concrete placement. Subgrades and forms shall be watertight and unyielding as the concrete is placed.

Steel. Exposed steel surfaces shall be protected from corrosion by galvanizing, painting, or other approved coatings.

Timber. All lumber in contact with the ground shall be pressure-treated and conform to the applicable requirements of ASTM D 1760.

4. Electrical Work

All electrical wiring and equipment shall be in accordance with current standards of the National Electric Code (NEC), National Electrical Manufacturer's Association (NEMA), the Underwriters Laboratory Inc. (UL), and the applicable state and county regulations.

5. Suction and Discharge Pipes

The arrangement and dimensions of the discharge pipes along with gates, valves, pipe connections, discharge bays, and other protection work will be installed as outlined on the construction plans.

6. Building and Accessories

The pump and power unit assembly shall be protected from the rain and sun with a shade roof. The roof shall be constructed with durable materials. The roof shall allow clearance for air movement and ventilation. Position the roof to protect the power unit from the midday to late-afternoon sun.

The building and all accessories shall be installed as shown on the construction plan.

7. Measurement

Measurement of the completed installation will be each pumping plant installed. The installer or contractor shall demonstrate by testing that the pumping equipment will function at the design capacity. There will be no objectionable flow conditions.

8. Construction Details

Construction operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits. The owner, operator, contractor, or other persons will conduct all work and operations in accordance with proper safety codes for the type of construction being performed with due regard for the safety of all persons and property.

The completed job shall be workmanlike and present a good appearance.