UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CONSTRUCTION SPECIFICATION

CS-60: "WELL"

60.1 SCOPE

The work shall consist of furnishing and installing materials to construct and test a water supply well.

60.2 DRILLER'S LOG

A well log shall be maintained to accurately record the location of the top and bottom of each stratum, the fluids encountered, the encasement and the completion record for each well. A copy of the log shall be submitted to the Washington State Department of Ecology.

60.3 MATERIALS

Steel pipe, copper, reinforced plastic mortar, fiberglass or plastic may be used for well casings in drilled wells. Steel pipe casing shall be used for driven wells. The well casing pipe shall be marked according to the applicable ASTM specification for the material used.

a. Plastic Pipe Casing - Plastic casing shall be acrylonitrile-butadiene-styrene (ABS), polyvinyl chloride (PVC), or styrene-rubber (SR) and shall conform to ASTM Specification F-480.

Plastic well casing shall be no larger than 12 inches nominal diameter, or smaller than 2 inches nominal diameter.

Where water is to be used for human consumption the requirements of the National Sanitation Foundation (NSF) shall be met. Plastic pipe will be suitably marked.

Polyvinyl chloride (PVC) pipe will be schedule 40, 80, or 120 and shall meet ASTM Specification D-1785.

Threaded or solvent-welded couplings for plastic pipe shall have a strength equal to or greater than the pipe to which they are attached.

b. Fiberglass - Fiberglass well casing shall meet the requirements of ASTM Specification D-2996. The joints shall meet ASTM Specification F-480. The modulus of elasticity shall be certified.

c. Concrete - Concrete well casings shall be reinforced and shall meet or exceed the requirements of ASTM Specification C-76 Class II for reinforced concrete culvert pipe.

d. Reinforced Plastic Mortar - Reinforced plastic mortar, RPM, well casings shall equal or exceed the requirements of ASTM Specification D-3517.

e. Steel Casing - Steel casing used in driven wells shall be provided with a drive shoe of approved type where necessary. Casing shall have welded or threaded joints.

Welding of steel casings shall be done in accordance with the standards of the American Welding Society. Sufficient passes of continuous weld shall be applied so that the finished surface at the area of fusion is built up to the surface of the adjoining pipe.

60.4 WELL SCREENS OR INTAKE SECTIONS

All wells finished in unconsolidated aquifers (sand, gravel, etc.) shall be equipped with manufactured screen sections, well points, or field perforated sections. The screen or slotted casing section shall be protected with a device immediately above the intake section, if necessary, to prevent well stabilizer materials from entering the intake section. Where practical, the top elevation of the intake section should be below the lowest drawdown.

60.5 GRAVEL PACK

Artificial filters (gravel pack) are specified around the well intake when conditions exist that will allow sand to enter the well. The need and gradation of the filter will be specified based on an analysis of the water bearing sands, and approved by the technical representative. The filter material shall extend a minimum of 10 feet above the top of the perforated or screened section and shall extend through the length of the water bearing formation.

60.6 ALIGNMENT

Drilled vertical wells shall be round, plumb, and aligned to permit satisfactory installation and operation of a pump.

60.7 DEVELOPING

The well shall be developed until it stops producing detrimental quantities of solid particles when the continuous discharge rate is approximately 20 percent greater than the anticipated normal production rate.

60.8 WORKMANSHIP

The well casing pipe, couplings, and screens shall be homogeneous throughout and shall be free of visible cracks, holes, foreign materials, or other injurious defects. The well casing pipe, couplings, and screens shall be as uniform in color, density, and other physical properties as is commercially possible.