IRRIGATION WATER CONVEYANCE GALVANIZED STEEL DITCH AND CANAL LINING SPECIFICATIONS

INSTALLATION

Foundation preparation. The foundation area for all ditch embankments or ditch pads or both shall be cleared of all trees, weeds, sod, loose rock, boggy soil, or other material not suitable for the subgrade. All trees having a root system that can damage the lining shall be removed.

Placement of earthfill. The moisture content and methods of placing and compacting the embankment and backfill materials shall be conducive to a firm, stable embankment. Fill material shall be placed in horizontal lifts of 8 in. maximum thickness and shall be uniformly compacted to the density of the surrounding material to the top of the ditch lining. Embankment materials shall be free of brush, roots, sod, large rocks, frozen soil, or other material not suitable for making compacted fills.

Excavation. Ditches and canals shall be excavated to the neat lines of the specified cross section and finished with a smooth, firm surface. Overexcavated areas shall be backfilled with moist soil compacted to the density of the surrounding material. No abrupt deviation from design grade or horizontal alinement shall be permitted.

Placement of lining. The lining shall be placed so that there are no abrupt deviations from the designed alinement. Joints shall be flexibly joined to absorb changes in length because of temperature and shall be constructed so that they remain water- tight. The anchorage section of the lining shall be adequately covered with earth.

Lining grades shall at no place vary more than 0.2 ft above or below the design grade, and deviations greater than 0.1'ft shall be allowed only in canals for which the design freeboard is 6.0 in. or more. Opposite sides of the lining shall be within 0.1 ft of the same elevation.

Construction operations. Construction operations shall be carried out in such a manner that erosion and air and water pollution are minimized and held within legal limits. The completed job shall be workmanlike and present a good appearance.

MATERIALS

Galvanized sheet steel used in the linings, battens, related structures, and accessories shall conform to the criteria in ASTM-A-525, Coating class 1.25 oz/ft, or in Federal Specification 00-S-775C, Type 1, Class d. Minimum thickness of the lining shall be 24 gage for individual sheets 84 in. or less in width and 22 gage for wider sheets. The edges of the sheet linings shall be rolled or pressed into a shape that will provide added strength at the corners and firm anchorage into the ditch at the top of the lining.

Minimum thickness of steel used for bulkheads and related structures shall be 20 gage in accord with ASTM-A-446, Grade C, Steel.

Fasteners used in assembly of liners and structures shall be zinc or cadmium plated. Sealer materials shall be able to withstand temperature variations expected at the site.