

---

---

# **8 Paved Side Ditch**

---

**Grade Preparation**

**Forms**

**Concrete Composition and Placement**

**Cut-Off Walls and Lugs**

**Finishing and Curing**

**Construction and Inspection Procedures**

# CHAPTER EIGHT:

## *PAVED SIDE DITCH*

---

Paved side ditch is used to prevent erosion at locations where the ditch grade is 3 % or more and sometimes on flatter grades at locations where the soils are prone to erosion, such as in sand.

This chapter covers the different procedures of paved side ditch construction from location to measurement and payment. Standards **607 PSDT-01** through **607 PSDT-06** for paved side ditch and Standards **605 GTRC-01** through **605 GTRC-03** for concrete gutter are used.

---

### GRADE PREPARATION

Excavation for a paved side ditch is required to conform to the size and shape of the bottom of the type of the ditch being built. Compaction is required to be sufficient to prevent settlement after the paved side ditch is in use. Such settlement causes the ditch to break which results in severe erosion. Also, any soft or yielding material is required to be removed and replaced with a suitable material.

### FORMS

The same requirements for curb forms also apply to paved side ditch. The forms may be made of wood or metal and are required to be straight and free of warping. The forms are required to extend for the full depth of the paved side ditch and be secured so that they maintain the correct grade and alignment.

### CONCRETE COMPOSITION AND PLACEMENT

Class A concrete in accordance with Section **702** is used in paved side ditch construction. After the concrete is placed in the forms, the concrete is consolidated by tamping, spading, or vibrating. Reinforcing steel is inserted at this time. The reinforcing steel may not rest on the bottom of the grade nor float to the surface.

## **CUT-OFF WALLS AND LUGS**

Cut-off walls and lugs are required to keep the paved side ditch in the proper location on a slope. A cut-off wall is constructed at the beginning and end of any paved side ditch. Lugs are poured monolithic with the paved side ditch on steep grades. The location and spacing of the lugs is listed in the Specifications.

## **FINISHING AND CURING**

The concrete is normally struck off with a template cut to resemble the finished grade of the paved side ditch. Floating is done using hand floats or bull floats on larger ditches. Brooming of the surface is not required on paved side ditches.

Forms are required to be left in place until the concrete has set sufficiently so that the removal does not cause damage to the paved side ditch.

Curing is required for at least 72 h after placement by being kept wet and covered with plastic sheeting to hold in the moisture. A liquid membrane curing compound may also be used. If freezing could occur during the curing period, appropriate measures are required to be taken to prevent the concrete from freezing.

Backfilling around the newly placed concrete is done with suitable material in layers of no more than 6 in., and this material is compacted sufficiently to prevent erosion.

## **CONSTRUCTION AND INSPECTION PROCEDURES**

A visual inspection of the contract is required to determine the exact locations of the paved side ditch. Slight errors in grading or existing conditions varying from the plans may cause major location changes in the paved side ditch construction. The PE/PS is consulted for the correct locations and lengths.

The edges of the paved side ditch are required to be 3 to 4 in. below the adjacent earth so that water may flow into the ditch and not along the side of the ditch. The forms are required to be removed and the sides of the ditch backfilled above the top of the ditch edge. This procedure is required to be done before any rains occur.

All on-site testing of materials is required to be in accordance with the Frequency Manual, and all materials are verified that they are approved for use. All required basis for use documents are obtained for the material records.

All items are required to be measured and documented for payment on a daily basis. These measurements are required to be accurate enough for final payment so that additional measurements are not required at a later date. The standards are required to be checked for how to pay for each lug and cut-off wall.