

# Design Standards Letter

Letter Number: **D-1992-06**

Letter Date: **11/24/1992**

Effective Date: **11/01/1992**

Section/Plan No.: **D9-03, D9-04**

Subject: **Ditch Protection**

Body

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Enclosed are copies of revisions to Chapter IX, Hydraulics and Drainage, of the Policy,

Procedure and Design Manual. Section 9-03, Open Channels, and Section 9-04, Erosion

Control and Energy Dissipation, have been revised significantly to eliminate the use of ditch

liner and revise paved ditch. Rock ditch liner will be used instead of the current ditch liner.

Paved ditch will be used only in urban areas where aesthetics are of importance.

Revised

Standard Drawings will be forwarded with Standard Plans Letter No. 5, 1992. A summary

of the revisions follows.

Contents, Volume III Revision date for Sections 9-03 and 9-04 changed to 11-01-92.

Table of Contents, Chapter IX, Hydraulics and Drainage Revised to reflect the changes

of 11-01-92.

Section 9-03, Table 9-03.1, Roughness Coefficient For Various Materials

Eliminated roughness coefficient, n value, for Concrete Ditch Liner and added roughness

coefficients for Rock Ditch Liner by Rock Ditch Liner Type.

Section 9-04, Erosion Control and Energy Dissipation Entire section revised to replace any references of concrete ditch liner to rock ditch liner.

Section 9-04.3(3), Rock Ditch Liner Section revised to reflect design considerations for using rock ditch liner. Gradations for rock ditch liner by type are given in the Rock Ditch Liner Job Special Provision which will be distributed with General Letter No. 24,

1992. The lowest practical type of Rock Ditch Liner should be selected based on calculations from the LAN System program for Ditch-Open Channel Flow.

**Section 9-04.3(5), Innovative Products Section added to encourage the use of innovative erosion control products on an experimental basis. Both the Design Division and the Maintenance and Traffic Division are encouraged to look for innovative erosion control techniques to be considered.**

**Section 9-04, Table 9-04.1, Velocity Controls For Ditch Protection. Eliminated roughness coefficient, n value, for Concrete Ditch Liner and added roughness coefficients for Rock Ditch Liner by Rock Ditch Liner Type.**

**This change in erosion protection is to be implemented on all design projects, including consultant designs, beginning with the March, 1993 letting.**

**vji/kd**