Subject: Manning’s n Value for Culverts

Applicability: Guidance

Note: This is a reissue of ECB 2002-18 without any changes.

1. Background: Manufacturers of culvert piping recommend various coefficients of roughness (Manning’s n values) for design. The use of various or incorrect values may cause improper sizing of the piping or cause an unfair advantage for a particular type of culvert material.

2. Purpose: The purpose of this bulletin is to direct USACE design engineers to a source that lists values of Manning’s coefficient for various pipe (culvert) materials.

3. Policy: USACE design engineers shall use the n values listed in Table 4, Manning’s n Values for Culverts, on page 33 of the Federal Highway Administration (FHWA) Publication No. FHWA-NH1-01-020, Hydraulic Design Series Number 5, “Hydraulic Design of Highway Culverts,” dated September 2001. This document is located on the Internet at: http://isddc.dot.gov/OLPFiles/FHWA/010435.pdf. (Paste the URL into your browser address bar if you have problems opening this site.)

4. Notes: Actual n values experienced in field applications differ from those used in design and normally increase with age. Because pipe roughness values increase, the use of conservative n values is considered good engineering practice. The design engineer shall also consider the user’s preferences for pipe materials and maintenance requirements.

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