



November 17, 1982

TECHNICAL RELEASE NO. 40, 2ND EDITION
210-VI

SUBJECT: ENG - INDEX OF SCS NATIONAL ENGINEERING TECHNICAL MATERIALS

Purpose. To transmit the latest edition of Technical Release No. 40 - "Index of SCS National Engineering Technical Materials," dated October 1, 1982.

Effective Date. Effective when received.

Explanation. TR-40 catalogs current technical materials and indicates the supply sources from which SCS offices obtain these materials.

This edition updates the index and replaces all previous versions of TR-40. This edition also identifies National Engineering Manual (NEM) §545 as the reference source for policy on distribution of these technical materials, brings Service supply sources into compliance with requirements of the SCS Forms Catalog, and modifies the procedure for the procurement of transparencies of National Standard Detail Drawings.

Filing Instructions. File with other Technical Releases under Title 210 of the directives system. Previous versions of TR-40 should be discarded.

Distribution. Ten copies of TR-40 are distributed from National Headquarters to each State and NTC. Additional copies may be obtained from Central Supply.

PAUL M. HOWARD
Deputy Chief for Technology
Development and Application

DIST: TR-40



TR-40
2nd Edition

TECHNICAL RELEASE
NUMBER 40
Second Edition

INDEX OF SCS NATIONAL ENGINEERING TECHNICAL MATERIALS

OCTOBER 1, 1982
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ENGINEERING
DESIGN UNIT

TECHNICAL RELEASE
NUMBER 40

INDEX OF SCS NATIONAL ENGINEERING TECHNICAL MATERIALS

This index is intended primarily for the use of Soil Conservation Service (SCS) personnel. The following SCS National Engineering Technical Materials are included in the Index:

1. National Engineering Handbook Sections
2. Field Manuals
3. Technical Releases
4. Engineering Standard Drawings
5. National Standard Detail Drawings
6. National Engineering Notices
7. Notes.

Related technical materials are usually assigned consecutive numbers. Technical material that has been canceled or superseded is unavailable and is not listed in the Index.

AEN - Agricultural Engineering Note
DN - Design Note
ES - Engineering Standard Drawing
FM - Field Manual
GN - Geology Note
HN - Hydrology Note
NEH - National Engineering Handbook
SMN - Soil Mechanics Note
SN - Specification Note
TR - Technical Release.

Service Supply Sources

Policy for distribution of these technical materials is stated in the National Engineering Manual (NEM) §545.

State field personnel are to obtain technical materials through their State Office in accordance with the SCS Forms Catalog.

State Offices and National Technical Centers are to obtain their supplies by submission of a Form AD-14 to the Administrative Services Staff, NHQ in accordance with the SCS Forms Catalog.

National Standard Detail Drawings present the only exception to the above pattern. These drawing reproductions are available as transparencies. The South National Technical Center Cartographic Staff is the source of supply. Drawings may be requested by submission of an SCS-CART 19. National Standard Detail Drawings should be ordered only as the need arises for each job.

ES drawings are not available as separates. If a particular ES drawing is required, it may be obtained by requesting the publication in which it is contained. The ES drawings associated with TR-15 present the only exception to this rule. The Design Unit, Engineering, NHQ, has a small supply of some of these drawings.

Outside Supply Sources

Two additional federal sources of supply exist for certain of the engineering technical materials. The sources are the National Technical Information Service (NTIS), U. S. Department of Commerce and the U. S. Government Printing Office (GPO). The materials currently available from these sources are listed on page 24 for GPO, and on pages 25 and 26 for NTIS. Material prices are determined by the respective sources. Prices change with time. A price code is given for each NTIS entry.

NTIS and GPO addresses are:

National Technical Information Service
U. S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22151

Phone: (703) 487-4600

Superintendent of Documents
U. S. Government Printing Office
Washington, D.C. 20401

NEH-16 is available commercially under the title "Drainage of Agricultural Land," from Water Information Center, Inc. The address is:

Water Information Center, Inc.
7 High Street
Huntington, New York 11743.

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33	Simplified Method for Determining Floodwater Retarding Storage
34	Application of Statistics to Concrete Quality Control
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36	Ground Water Recharge
37	Structural Analysis and Design at Base of Riser with Conduit Openings in Both Endwalls
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56	A Guide for Design and Layout of Vegetative Wave Protection for Earth Dams Embankments
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211	Riprap Gradient Control Structures: Transitions; $\frac{zd}{b}$ vs. $\frac{b^5}{z^3 Q^2}$ with $\frac{zH}{b}$ curves	5	L	TR-59, Supplement 1
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609	Emergency Spillway Hydraulics, Discharge Charts $z = 1 \ 1/2$	3	N	TR-35
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719	Solution of Modified Ellipse Equation - Depth to Barrier Infinite	1	L	NEH-16
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721	Drain Capacity Charts, $n = 0.011$, $n = 0.013$ and $n = 0.015$	3	L	NEH-16
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ES Number	Title	Number of Sheets	Sheet Size	Reference
2FFh'-LB*	National Standard Detail Drawings	3	E	NEH-11

See ES-94 for available drawings

Key for the TYPE B DROP SPILLWAYS,
 ES-2FFh'LB. National Standard Detail Drawings
 where

FF = a code of two digits to indicate the net drop (F) from crest of weir to top of transverse sill in feet.

FF = 05 means F = 5 feet FF = 08 means F = 8 feet
 FF = 06 means F = 6 feet FF = 09 means F = 9 feet
 FF = 07 means F = 7 feet FF = 10 means F = 10 feet

h' = a code to indicate total depth of weir, h, in feet and inches

h' = 1 means h = 2'-6" h' = 5 means h = 4'-6"
 h' = 2 means h = 3'-0" h' = 6 means h = 5'-0"
 h' = 3 means h = 3'-6" h' = 7 means h = 5'-6"
 h' = 4 means h = 4'-0" h' = 8 means h = 6'-0"

L = length of weir in feet

B = Type B reinforced concrete drop spillways.

Example: ES-2051-6B is the ES-drawing number of the National Standard Detail Drawings for the TYPE B DROP SPILLWAY having a weir length of 6 feet, a weir depth of 2'-6" and a vertical drop from the crest of the weir to the top of the transverse sill of 5 feet.

32DD-[NN] _{ih} [NN] _{is} [^E / _R]	* National Standard Detail Drawings	4	E
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See ES-231 for available drawings

Key for the STANDARD BAFFLE RISERS

ES-32DD-[NN]_{ih} [NN]_{is} [^E/_R], National Standard Detail Drawings

where

DD ≡ D = pipe conduit diameter, inches.

[NN]_{ih} ≡ N_{ih} = vertical distance from pipe invert at the riser to crest of the baffle inlet of the riser, ft.

[NN]_{is} ≡ N_{is} = vertical distance from pipe invert at the riser to soil surface, ft. The soil surface is either the sediment or the embankment (berm) surface.

[^E/_R] ≡ riser is designed to be located in the [embankment / reservoir area].

Example: ES-3236-3030E is the ES-drawing number of the National Standard Detail Drawings for the STANDARD BAFFLE RISER designed to be located in the embankment and having D = 36", N_{ih} = 30', and N_{is} = 30'.

NATIONAL STANDARD DETAIL DRAWINGS

ES Number	Title	Number of Sheets	Sheet Size	Reference
30DD-[NN] _{ih} [NN] _{is} [^E _R]*	National Standard Detail Drawings	4	E	

See ES-169 for available drawings

Key for the STANDARD COVERED RISERS

ES-30DD-[NN]_{ih}[NN]_{is} [^E_R], National Standard Detail Drawings

where

DD ≡ D = pipe conduit diameter, inches.

[NN]_{ih} ≡ N_{ih} = vertical distance from pipe invert at the riser to crest of the baffle inlet of the riser, ft.

[NN]_{is} ≡ N_{is} = vertical distance from pipe invert at the riser to soil surface, ft. The soil surface is either the sediment or the embankment (berm) surface.

[^E_R] ≡ riser is designed to be located in the [embankment
reservoir area].

Example: ES-3236-4025E is the ES-drawing number of the National Standard Detail Drawings for the STANDARD BAFFLE RISER designed to be located in the embankment and having D = 36", N_{ih} = 40', and N_{is} = 25'.

31DD-[NN] _{ih} [NN] _{is} [^E _R]*	National Standard Detail Drawings	4	E	
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See ES-180 for available drawings

Key for the STANDARD OPEN RISERS

ES-31DD-[NN]_{ih}[NN]_{is} [^E_R], National Standard Detail Drawings

where

DD ≡ D = pipe conduit diameter, inches.

[NN]_{ih} ≡ N_{ih} = vertical distance from pipe invert at the riser to crest of the baffle inlet of the riser, ft.

[NN]_{is} ≡ N_{is} = vertical distance from pipe invert at the riser to soil surface, ft. The soil surface is either the sediment or the embankment (berm) surface.

[^E_R] ≡ riser is designed to be located in the [embankment
reservoir area].

Example: ES-3136-3030E is the ES-drawing number of the National Standard Detail Drawings for the STANDARD BAFFLE RISER designed to be located in the embankment and having D = 36", N_{ih} = 30', and N_{is} = 30'.

NATIONAL STANDARD DETAIL DRAWINGS

ES Number	Title	Number of Sheets	Sheet Size	Reference
4WW*	National Standard Detail Drawings	5	E	

See ES-186 for available drawings

Key for the STANDARD IMPACT BASINS

ES-4WW, National Standard Detail Drawings where

WW \equiv W = width of basin, WW.W ft

Example: ES-4120 is the ES-drawing number of the National Standard Detail Drawings for the STANDARD IMPACT BASIN having a basin width of 12.0 ft.

5 ₁ ⁰ DD - [_B ^C][_R ^E]*	National Standard Detail Drawings	1	E	
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See ES-195 for available drawings

Key for the STANDARD CONDUIT DETAILS

ES-5₁⁰DD - [_B^C][_R^E], National Standard Detail Drawings

where

₁⁰ \equiv the reinforced concrete pressure pipe conduit details are associated with
 class (a) dams more than 50 ft high and all class (b) and class (c) dams
 alternate for class (a) dams less than 50 ft high

DD \equiv D = pipe conduit diameter, inches

[_B^C] \equiv pipe is supported on [_{beddings}^{cradles}]

[_R^E] \equiv foundation is [_{rock (non-yielding)}^{earth (yielding)}]

Example: ES-5130-BE is the ES-drawing number of the National Standard Detail Drawing for the STANDARD CONDUIT DETAILS associated with a class (a) dam less than 50 ft high having a reinforced concrete pressure pipe principal spillway. The pipe is 30 inches in diameter and is supported on bedding founded on earth.

*Available as transparencies

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DN 4	Cradle Modification Where a Rock Foundation Hiatus Exists
DN 5	Some Comments on Flexural and Anchorage Bond Stresses
DN 6	Armored Scour Hole for Cantilever Outlet
DN 7	Variation in joint extensibility requirements as sectional conduit is moved up or down from embankment-foundation interface. (See TR no. 18.)
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Item	Title and Subject	Price
NEH-15	IRRIGATION Chapter 4, Border Irrigation Chapter 9, Measurement of Irrigation Water	\$ 2.60 1.35
NEH-22	SNOW SURVEY AND WATER SUPPLY FORECASTING	3.30
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<u>NATION ENGINEERING HANDBOOK</u>			
Section 4, HYDROLOGY	SCS/ENG/NEH- 4	PB244463/AS	A99
Section 5, HYDRAULICS	SCS/ENG/NEH- 5	PB243644/AS	A11
Section 6, STRUCTURAL DESIGN	SCS/ENG/NEH- 6	PB243890/AS	A11
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<u>FIELD MANUALS</u>			
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ENGINEERING FIELD MANUAL FOR CONSERVATION PRACTICES	SCS/ENG/FM-E	PB244668/AS	A99
WATERSHED AND STREAM MECHANICS	SCS/ENG/WSM	PB81152399	A99
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FLOW NET CONSTRUCTION AND USE	SCS/ENG/SMN-5	PB261975/AS	A04

Each item is also available in microfiche.

*National Technical Information Service
U. S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22151

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USDA-SCS PROGRAM (IBM 360 VERSION)	PROGRAM DATE	ACCESSION NUMBER	TAPE PRICE CODE
WSP2 - WATER SURFACE PROFILE	9/23/76	PB-260-750	T 03
DAMS2 - SITE ANALYSIS	10/30/73	PB-233-777	T 03
TR20 - PROJECT FORMULATION-HYDROLOGY	2/14/74	PB-233-779	T 03
ECON2 - PROJECT FORMULATION-ECONOMICS	10/30/73	PB-233-781	T 03

USER'S MANUAL (DOCUMENTATION)

USDA-SCS PROGRAM	PUBLICATION NUMBER AND DATE	ACCESSION NUMBER	PAPER PRICE CODE**
WSP2	TR-61, May 1976	PB-260-751	A 04
DAMS2	TR-48, February 1971	PB-233-776	A 04
TR20	TR-20,* May 1965	PB-233-778	A 08
ECON2	Input Instruction Manual, IBM 1130, August 1968	PB-233-780	A 02

*Includes Supplement No. 1, March 1969

**Also available in microfiche. Users Manual is free with purchase of program tape.