

CONSERVATION ENGINEERING REFERENCES

Reference	<u>Web Page</u>	How to Find it
Professional Engineering Practice	http://directives.sc.egov.usda.gov/	Open website Click on: General Manual Click on: Title 210-Engineering Click on: Desired Reference
National Engineering Manual	http://directives.sc.egov.usda.gov/	Open website Click on: Manuals Click on: Title 210-Engineering Click on: National Engineering Manual
National Operation and Maintenance Manual	http://directives.sc.egov.usda.gov/	Open website Click on: Manuals Click on: Title 180-Conservation Planning and Application Click on: Part 500 - Operation and Maintenance

National Engineering Handbook (NEH)	http://directives.sc.egov.usda.gov/	Open website Click on: Handbooks Click on: Title 210-Engineering Click on: Desired Reference
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NEH References available:

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| Part 624 - Water Table Control | Part 651 - Agricultural Waste Management Field Handbook | Section 8 - Engineering Geology |
| Part 628 - Dams | Part 652 - Irrigation Guide | Section 11 - Drop Spillways |
| Part 630 - Hydrology | Part 653 - Stream Corridor Restoration: Principles, Processes, and Practices | Section 14 - Chute Spillways |
| Part 631 - Geology | Part 654 - Stream Restoration Design | Section 15 - Irrigation |
| Part 633 - Soil Engineering | Section 3 - Sedimentation | Section 16 - Drainage of Agricultural Land |
| Part 636 - Structural Engineering | Section 5 - Hydraulics | Section 18 - Ground Water |
| Part 637 - Environmental Engineering | Section 6 - Structural Design | Section 19 - Construction Inspection |
| Part 641 - Drafting and Drawings | | |
| Part 642 - Specifications for Construction Contracts | | |
| Part 650 - Engineering Field Handbook | | |

<p>NRCS Engineering Technical Notes</p>	<p>http://directives.sc.egov.usda.gov/</p>	<p>Open website Click on: Technical Notes Click on: Title 210-Engineering Click on: Desired reference or subfolder and then desired reference</p>
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Technical Notes Available

TN-210-AEN - Technical Notes: Agricultural Engineering

- TN_210_AEN_01 - Treatment of Abandoned Mine Shafts and Adits (1/1981)
- TN_210_AEN_02 - Aquaculture Pumping Plants (12/1982)
- TN_210_AEN_03 - Aeration of Ponds Used in Aquaculture (10/1984)

TN-210-DN - Technical Notes: Design

- TN_210_DN_01 - Scour Protection at Base of Risers to Drop Inlet Spillways (8/1967)
- TN_210_DN_02 - Required 3-Edge Bearing Strength for Rigid Pipe (12/1967)
- TN_210_DN_03 - Detail of Riprap Above Berm on Earth Dam (7/1968)
- TN_210_DN_04 - Cradle Modification Where a Rock Foundation Hiatus Exists (8/1968)

- TN_210_DN_05 - Some Comments on Flexural and Anchorage Bond Stresses (11/1968)
- TN_210_DN_06 - Riprap Lined Plunge Pool for Cantilever Outlet (Second Edition) (1/1986)
- TN_210_DN_07 - Variation in Joint Extensibility (8/1969)
- TN_210_DN_08 - Drop Inlet Entrance Losses (8/1969)
- TN_210_DN_09 - Use of AWWA C302 Pipe for Principal Spillway Conduits (1/1970)
- TN_210_DN_10 - Special Designs of Single Cell Rectangular Conduits (6/1970)
- TN_210_DN_11 - Welding Reinforcing Steel for Reinforced Concrete (1/1971)
- TN_210_DN_12 - Control of Underground Corrosion (2/1971)
- TN_210_DN_14 - Cavitation Potential at an Irregularity (1/1973)
- TN_210_DN_15 - Submerged Weir Flow (5/1973)
- TN_210_DN_16 - Probability of Occurrence for Certain Design Events (12/1976)
- TN_210_DN_17 - Some Comments on the Location of Riser Conduit Articulation Joints (4/1977)
- TN_210_DN_18 - Unattached Engineering Standard Drawings (4/1981)
- TN_210_DN_18_A - Unattached Engineering Standard Drawings, DN-18A, Revised Pages (6/1986)
- TN_210_DN_18_B - Unattached Engineering Standard Drawings, DN-18B, Revised Pages
- TN_210_DN_9 - Input Data for Design Unit Programs (4/1980)
- TN_210_DN_20 - Guide to Organization and Operation of Independent Review Boards (4/1980)

TN-210-DN - Technical Notes: Design cont.

- TN_210_DN_21 - Substitution of Higher Strength Steels in Reinforced Concrete (4/1983)
- TN_210_DN_24 - Guide for the Use of Geotextiles (11/1991)

TN-210-GN - Technical Notes: Geology

- TN_210_GN_01 - Color Codes for Sediment Yield Maps (6/1980)
- TN_210_GN_02 - Prediction of Fine Sediment in Channels from Single Storm Events (4/1980)
- TN_210_GN_03 - Geologic Investigation (5/1984)
- TN_210_GN_04 - Photography of Rock Core Samples (5/1984)
- TN_210_GN_05 - Soil Sample Size Requirements for Soil Mechanics Laboratory Testing (11/1991)

TN-210-HN - Technical Notes: Hydrology

- TN_210_HN_01 - Estimates of Peak Rates of Runoff (Rev.) Using Measured Stream Flow Data (10/1981)

TN-210-LAN - Technical Notes: Landscape Architecture

- TN_210_LAN_01 - Landscape and Wildlife Habitat Management in the Countryside (4/1987)
- TN_210_LAN_02 - Landscape Design in Mined Land Reclamation (9/1983)

- TN_210_LAN_03 - Landscape Design: Ponds (9/1988)

TN-210-SMN - Technical Notes: Soil Mechanics

- TN_210_SMN_02 - Lightweight Piston Sampler for Soft Soils (08/1969)
- TN_210_SMN_03 - Soil Mechanics Considerations for Embankment Drains (05/1971)
- TN_210_SMN_04 - Preparation and Shipment of Undisturbed Core Soil Samples (06/1973)
- TN_210_SMN_05 - Flow Net Construction and Use (10/1973)
- TN_210_SMN_07 - The Mechanics of Seepage Analysis (10/1979)
- TN_210_SMN_08 - Soil Mechanics Testing Standards (12/1984)
- TN_210_SMN_09 - Permeability of Selected Clean Sands and Gravels (03/1984)
- TN_210_SMN_11 - The Static Cone Penetrometer Test (CPT) (06/1984)
- TN_210_SMN_12 - Portable Pinhole Test Apparatus (06/1987)
- TN_210_SMN_13 - Dispersive Clays (02/1991)

Hydrology

- Engineering Technical Note No. 1 - Updated National Weather Service (NWS) Precipitation Frequency Analyses

Biomass Energy

- Biomass Energy Technical Note No. 1 – An Analysis of Energy Production Costs from Manure Anaerobic Digestion Systems on U.S. Livestock Production Facilities

Snow Survey and Water Supply Forecasting

- Snow Survey and Water Supply Forecasting Technical Note No. 1 - Snow Survey and Water Supply Forecasting Technical Note No. 1 – Guidance Product for Daily Water Supply Forecast
- Snow Survey and Water Supply Forecasting Technical Note No. 2 – Statistical Techniques used in Viper Water Supply Forecasting Software

NRCS Engineering Technical Releases	http://directives.sc.egov.usda.gov/	Open website Click on: Technical Releases Click on: Title 210-Engineering Click on: Desired reference or subfolder and then desired reference
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Engineering Technical Releases Available

- TR-210-01 - Routing Through Tide Gates (7/1955)
- TR-210-03 - Hood Inlets for Culvert Spillways (6/1956)
- TR-210-04 - Height of Water Column Supported by Atmospheric Pressure (6/1956)
- TR-210-05 - Structural Design of Underground Conduits (11/1958)
- TR-210-17 - Geologic Investigation for Watershed Planning (3/1966)
- TR-210-18 - Computation of Joint Extensibility Requirements (8/1969)
- TR-210-19 - Determination of Storage Requirements to Meet Supply Demand Relationships (3/1962)
- TR-210-19-A - Revision of Reservoir Operations Study Computer Program and User Manual, Appendix A (3/1988)
- TR-210-20 - Input Program: Computer Program for Project Formulation Hydrology (3/1986)
- TR-210-20 - Computer Program for Project Formulation Hydrology (3/1986)
- TR-210-23 - Engineering Services Contracts
- TR-210-24 - Investigating Structural Problems (Second Edition) (2/1983)
- TR-210-25 - Design of Open Channels (9/1977)
- TR-210-25-A - Design of Open Channels, Appendix A, Stream Armor Design Concepts (10/1977)
- TR-210-26 - The Use of Soils Containing More Than 5% Rock Larger Than the No.4 Sieve (12/1964)
- TR-210-27 - Laboratory and Field Test Procedures for Control of Density and Moisture of Compacted Earth Embankment (including Notice) (2/1965)
- TR-210-28 - Clay Minerals (2/1965)
- TR-210-29 - Hydraulics of Two-Way Covered Risers (6/1965)
- TR-210-30 - Structural Design of Standard Covered Risers (including Notice TR 30-1) (4/1965)
- TR-210-31 - Structural Analysis and Design at Low Stage Inlets (6/1966)
- TR-210-32 - Procedures for Determining Rates of Land Damage, Land Depreciation, and Volume of Sediment Produced by Gully Erosion (7/1966)
- TR-210-33 - Simplified Method for Determining Floodwater Storage (4/1978)
- TR-210-34 - Application of Statistics to Concrete Quality Control (8/1966)
- TR-210-35 - Method of Reservoir Flood Routing (2/1967)
- TR-210-36 - Ground Water Recharge (6/1967)
- TR-210-37 - Structural Analysis and Design at Base of Riser With Conduit Openings in Both Endwalls (12/1967)

Engineering Technical Releases (cont.)

- TR-210-38 - Tables of Percentage Points Of Pearson Type III Distribution (12/1998)
- TR-210-39 - Hydraulics of Broad-Crested Spillways (5/1968)
- TR-210-40 - Index of SCS National Engineering Technical Materials
- TR-210-41 - Graphical Solutions to Geologic Problems (3/1969)
- TR-210-42 - Single Cell Rectangular Conduits Criteria and Procedures for Structural Design (12/1969)
- TR-210-43 - Single Cell Rectangular Conduits Catalog of Standard Designs (1/1970)
- TR-210-44 - Seismic and Resistivity Methods of Geophysical Exploration (8/1971)
- TR-210-45 - Twin Cell Rectangular Conduits-Criteria and Procedures for Structural Design (9/1970)
- TR-210-46 - Gated Outlet Appurtenances, Earth Dams (12/1982)
- TR-210-46-1 - Gated Outlet Appurtenances, Earth Dams, Amendment 1 (8/1984)
- TR-210-47 - Classification System for Varied Flow in Prismatic Channels (2/1971)
- TR-210-48 - SITES Water Resource Site Analysis Computer Program User's Guide (11/2005)
- TR-210-49 - Impact Basins Associated With Full Flow in Pipe Conduits (3/1971)
- TR-210-50 - Design of Rectangular Structural Channels (Revision 1) (7/1977)
- TR-210-51 - Procedure for Computing Sheet and Rill Erosion on Project Areas (9/1977)
- TR-210-54 - Structural Design of SAF Stilling Basins (10/1974)
- TR-210-54-1 - Structural Design of SAF Stilling Basins, revised wingwall design, Amendment 1 (9/1981)
- TR-210-55 - Urban Hydrology for Small Watersheds (second edition) (6/1986)
- TR-210-56 - A Guide for Design and Layout of Vegetative Wave Protection for Earth Dam Embankments (12/1974)
- TR-210-57 - Flood Proofing (1/1975)
- TR-210-59 - Hydraulic Design of Riprap Gradient Control Structures (1/1976)
- TR-210-59-1 - Graphical Solution for the Hydraulic Design of Riprap Gradient Control Structures, Amendment 1 (7/1976)
- TR-210-59-2 - Water Surface Profiles and Tractive Stresses for Riprap Grade Control Structures, Supplement 1 (2/1978)
- TR-210-59-3 - Water Surface Profiles and Tractive Stresses for Riprap Grade Control Structures, Revised Pages, Supplement 2 (3/1986)
- TR-210-60 - Earth Dams and Reservoirs (Revised July 2005) (7/2005)
- TR-210-61 - Computer Program for Water Surface Profiles (WSP2) (10/1993)
- TR-210-62 - Engineering Layout, Notes, Staking, and Calculations (1/1979)
- TR-210-63 - Structural Design of Monolithic Straight Drop Spillways (2/1977)
- TR-210-64 - Floodway Determination Computer Program (6/1978)
- TR-210-65 - Procedures to Establish Priorities in Landscape Architecture (10/1978)
- TR-210-66 - Simplified Dam-Breach Routing Procedure (third edition) (9/1985)
- TR-210-67 - Reinforced Concrete Strength Design (8/1980)
- TR-210-68 - Seismic Analysis of Risers (4/1982)
- TR-210-68-1 - Seismic Analysis of Risers, Appendix D, Computer Program, Amendment 1 (2/1992)
- TR-210-68-2 - Seismic Analysis of Risers, Revisions to computer program, Amendment 2 (8/1993)

Engineering Technical Releases (cont.)

- TR-210-69 - Riprap for Slope Protection Against Wave Action (2/1983)
- TR-210-70 - Hydraulic Proportioning of Two-Way Covered Baffle Inlet Riser (9/1983)
- TR-210-74 - Lateral Earth Pressures (7/1989)
- TR-210-75 - Reservoir Storage Volume Planning (7/1991)
- TR-210-77 - Design and Installation of Flexible Conduits (8/1990)
- TR-210-77-1 - Design and Installation of Flexible Conduits - Plastic Pipe, Amendment 1 (5/1993)
- TR-210-77-2 - Design and Installation of Flexible Conduits, Appendix G - Computer Program, Amendment 2 (6/1993)
- TR-210-78 - The Characterization of Rock for Hydraulic Erodibility (6/1991)

NRCS Engineering Users Guides	http://directives.sc.egov.usda.gov/	Open website Click on: User Guides Click on: Title 210-Engineering Click on: Desired reference
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Engineering Users Guides Available

<p>210-3-1 - Small Watershed Hydrology (WINTR-55) Version 1.0</p> <p>210-5-3 - Survey Engineering Tool (SET), Phase 1 and User's Guide</p> <p>210-6-4 - Water Resource Site Analysis Computer Program (SITES) Version 2000.5</p> <p>210-7-5 - WinTR-20, Version 1.00, Project Formulation – Hydrology Computer Program and Users Guide</p> <p>210-7-6 - WinPond 2006 and User's Guide, Version 2006</p>	<p>210-7-7 - NRCS Geo-Hydro, Version 1.0, Arcview Geospatial Information System (GIS) Interface to WINTR-20 (Projected Formulation Hydrology Computer Program), User Guide and Data Preparation Guide</p> <p>210-7-8 - Sites 2005, Water Resource Site Analysis Computer Program, Version 2005.1, and User Guide</p> <p>210-7-9 - FIRI 1.2 AND USER'S GUIDE</p> <p>210-7-10 - WINSRFR 1.0 AND USER'S GUIDE</p> <p>210-7-11 - ELECTRICAL CONDUCTIVE SAMPLING ASSESSMENT AND PREDICTION (ESAP) 2.35 AND USER'S GUIDE</p> <p>210-7-12 - HEC-HMS (HYDROLOGIC ENGINEERING CENTER - HYDROLOGIC</p>	<p>MODELING SYSTEM) VERSION 3.1.0 COMPUTER PROGRAM AND DOCUMENTATION</p> <p>210-7-13 - WINXSPRO: A CHANNEL CROSS-SECTION ANALYZER, VERSION 3.0 COMPUTER PROGRAM AND DOCUMENTATION</p> <p>210-7-14 - HEC-RAS (HYDROLOGIC ENGINEERING CENTER – RIVER ANALYSIS SYSTEM)</p> <p>210-7-15 - ANIMAL WASTE MANAGEMENT (AWM) VERSION 2.3.0 AND USER'S GUIDE</p> <p>210-7-16 - ENG – ENGINEERING FIELD TOOLS, VERSION 1.1.0</p> <p>210-8-17 - ENG – SITES 2005, WATER RESOURCE SITE ANALYSIS COMPUTER</p>
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Engineering Users Guides cont.

PROGRAM, 2005, VERSION 2005.1.3, AND
UPDATED USER DOCUMENTATION

210-8-19 - ENG – SPAW, VERSION 6.02.75,
COMPUTER PROGRAM

210-8-20 - DRAINMOD, Version 4.0, Users
Guide