

**EZZE SOFT - CD LIBRARY TITLES - VOLUME 1**

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## MATERIAL TESTING – 3 BOOKS 42 MB

The first two books contain soils and highway construction testing procedures of AASHTO, ASTM, WAQTC, WSDOT and US ARMY COE. The third book covers the procedures for the calibration of testing equipment commonly used in soils laboratories.

<p>Materials Manual M-46-01 WDOT – 680 pages</p>	<p>The 2004 edition of the Materials Manual has been revised. It continues to use AASHTO, ASTM, WAQTC, and WSDOT test methods. The strategic directions for the materials laboratory is to continue to expand the use of AASHTO and ASTM standards whenever possible. An A to Z testing manual for highway construction covering test procedures for aggregate, bituminous cement, bituminous cement mixtures, cement, chemical, concrete, concrete mixtures, electrical, geotechnical soils, geotextiles and steel, paint, + pavement soils. The format of this manual adopted in 2000 has been well received. The manual continues to be organized by numerical test order. It also features two contents and an index.</p>
<p>LABORATORY SOILS TESTING EM 1110-2-1906 407 PGS</p>	<p>This manual presents recommended testing procedures for making determinations of the soil properties to be used in the design of civil works projects. It is not intended to be a text book on soils testing or to supplant the judgment of design engineers in specifying procedures to satisfy the requirements of a particular project.</p>
<p>CALIBRATION OF LABORATORY SOILS TESTING EQUIPMENT EM 1110-2-1909 US ARMY COE</p>	<p>This manual presents recommended procedures for the calibration of testing equipment commonly used in Corps of Engineers soils laboratories. As a supplement to EM 1110-2-1906, "Laboratory Soils Testing," it has been prepared as an aid in establishing and maintaining acceptable accuracy for soils testing equipment.</p>

## AIR POLLUTION REFERENCE LIBRARY - 142MB

A series of 20 courses covering many aspects of EPA Regulations and Technical Requirements of Environmental – Air. Topics include the basic mathematics required to work with and understand ambient air measurements, Air Pollution Toxicology, Dispersion Modelling, Fabric Filter Devices, Electrostatic Precipitators plus much more

<a href="#"><u>SI:100 Mathematics Review for Air Pollution Control</u></a>	This course presents the basic mathematics required to work with and understand ambient air measurements. It is a good review for students with some engineering or scientific background. Presentations will cross disciplinary lines of mathematics using illustrations and examples to refresh your memory. The course is a prerequisite to APTI Classroom Courses 413, 415, 427, 450 and 474
<a href="#"><u>SI:300 Introduction to Air Pollution Toxicology</u></a>	This course is intended primarily for air pollution control agency personnel who might work with criteria pollutants but are not familiar with hazardous air pollutants (HAPs) and their effects on human health. The course is multi disciplinary in its approach so that students from diverse academic backgrounds will understand and use the information. Issues are addressed with a level of generality that will allow students to understand the basic principles of air pollution toxicology.
<a href="#"><u>SI:400 Introduction to Risk Assessment/Risk Management</u></a>	This risk assessment course pertains to hazardous air pollutants. It discusses the four components of risk assessment as well as management issues. The course will equip the student with the necessary knowledge to perform their job as it relates to risk assessment and HAPs.
<a href="#"><u>SI:409 Basic Air Pollution Meteorology</u></a>	This course uses video presentations, text materials, and reading assignments to present basic meteorology, meteorological effects on air pollution, meteorological instrumentation, air quality modeling, and regulatory programs requiring a knowledge of meteorology. A review of this course was completed in April, 2005. Only minor revisions were necessary with that review.
<a href="#"><u>SI:410 Introduction to Dispersion Modeling</u></a>	This course consists of computer model, text materials, and reading assignments. The course presents general concepts of air quality point source models and specific, detailed considerations of individual point source models. Two case studies will be examined to demonstrate the use of models in determining air pollution ground level concentrations.
<a href="#"><u>SI:412A Fabric Filter Operation Review</u></a>	This course is designed for engineers and other technical personnel in the field of air quality who are responsible for reviewing fabric filter cleaning devices installed on various industrial sources. The course is useful for air permit reviewers and air quality inspectors employed by State and local agencies; and for technical personnel in industry who prepare air permit applications and fabric filter designs. The course focuses on the operational aspects of fabric filters. The students will learn how various fabric filters operate and how to evaluate their effectiveness in achieving particle collection.
<a href="#"><u>SI:412B Electrostatic Precipitator Plan Review</u></a>	This course is designed for engineers and other technical personnel responsible for reviewing the plans for installation of electrostatic precipitators. The course reviews procedures for evaluating the performance of electrostatic precipitators that are used to reduce particulate emissions from industrial sources.
<a href="#"><u>SI:412C Wet Scrubber Plan Review</u></a>	This course is designed for engineers and other technical personnel responsible for reviewing plans for the installation of wet scrubbers. The course reviews procedures for evaluating the performance of wet scrubbers used to reduce particulate and gaseous emissions from industrial sources.
<a href="#"><u>SI:417 Controlling VOC Emissions from Leaking Process Equipment</u></a>	This course is designed for technical people involved in monitoring industries for VOC emissions from leaking process equipment. The course reviews the sources of fugitive VOC emissions and the procedures and equipment used to detect leaks.
<a href="#"><u>SI:428A Introduction to Boiler Operation</u></a>	This course is an introduction to the operation of boilers. It is designed for engineers and other technical persons responsible for inspecting boilers. The course focuses on the major components of boilers and how boilers operate to produce steam, heat and electricity.
<a href="#"><u>SI:431 Air Pollution Control Systems for Selected Industries</u></a>	This course is an introduction to the fundamental operating characteristics of particulate and gaseous pollutant emission control systems. The course reviews physical, chemical, and engineering principles of control devices and the application of control systems to several types of industrial processes.
<a href="#"><u>SI: 433 Network Design and Site Selection for Monitoring PM 2.5 and PM 10 in Ambient Air</u></a>	This course is intended to provide you with a comprehensive, self-instructional, practical application of how to optimally design and determine site selection for a particulate matter (PM) monitoring network in accordance with federal regulations and guidelines
<a href="#"><u>SI:434 Introduction to Ambient Air Monitoring</u></a>	This course introduces terms used in ambient air monitoring and presents practical information about the monitoring process. Theoretical monitoring concepts are also described.
<a href="#"><u>SI:436 Site Selection for Monitoring of SO2 and PM-10 in Ambient Air</u></a>	This course is intended primarily for chemists and engineers employed by federal, state and local air pollution control agencies; and private organizations involved in PSD ambient monitoring. Students should have prior experience with air quality monitoring, but this is not required to take the course. The course describes general considerations for siting ambient air quality monitors, to select the optimum general siting area and probe location for SO2 and particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM-10), and to describe the logic of the SO2 and PM-10 siting criteria.
<a href="#"><u>SI:445 Introduction to Baseline Source Inspection Techniques</u></a>	The goal of this course is to familiarize air pollution inspectors with the principles of baseline inspection techniques, to present basic descriptions of fan and ventilation system operations and specific air pollution control devices, and to present the applicable Level 1 and 2 inspection steps for these control devices. The course also presents general considerations for all facility inspections, including safety procedures.
<a href="#"><u>SI:446 Air Pollution Source Inspection</u></a>	This course presents inspection safety procedures for air pollution control systems. It describes practical

	<p>techniques to aid plant operations personnel and regulatory agency inspectors to minimize health and safety hazards. The course uses slide presentations and text materials. The readings for each lecture must be understood before viewing the videotaped example inspections and before attempting the review questions.</p>
<p><a href="#"><u>SI:460 Introduction to Permitting</u></a></p>	<p>This course is designed to introduce students to the terms and concepts associated with Title V requirements of the Clean Air Act Amendments of 1990. The level of information is such that the course will provide an overview for technical, nontechnical, management, and other personnel needing to understand the fundamentals of the Title V permit process.</p>
<p><a href="#"><u>SI:471 General Quality Assurance Considerations for Ambient Air Monitoring</u></a></p>	<p>Upon completion of this course, students should be able to describe the following: general principles of quality assurance; general quality assurance considerations for the acquisition, installation, and operation of air quality monitoring systems; quality control programs and data quality assessment for SLAMS and PSD air monitoring; and audit criteria and procedures for air quality monitoring networks. This course is a prerequisite for Course 470 "Quality Assurance for Air Pollution Measurement Systems."</p>
<p><a href="#"><u>SI:473A Beginning Environmental Statistical Techniques</u></a></p>	<p>This course is useful to employees who need to use and understand statistical techniques and/or data. The course gives students a "conversational" knowledge of statistics so they can understand the statistics in journal articles and reports, do some basic statistical calculations and analyses of their own, or listen to a statistician and understand what he or she is saying. The basic statistical principles and methods presented in the course can be applied in many fields including medicine, business, science, or other fields. The course serves as background material for APTI courses that require statistics, such as SI:426 "Analysis of Ambient Measurements" and classroom course 426 "Statistical Analysis for Ambient Measures".</p>
<p><a href="#"><u>SI:476B Continuous Emission Monitoring Systems - Operation and Maintenance of Gas Monitors</u></a></p>	<p>This advanced course is a study program designed to develop a working knowledge of continuous gas emission monitoring systems. The course reviews operating characteristics and common maintenance techniques used to provide continuous operation of both extractive and in-situ monitors. Discussions focus on regulatory specifications in terms of instrument design, installation, and performance testing. Both existing regulatory programs and the implications of pending specifications are considered.</p>

## SURVEYORS REFERENCE LIBRARY - 120 MB

**An A to Z reference library for Surveyors and Civil construction Engineers and Supervision covering topics like** surveying and mapping with Navstar GPS, procedural guidance for control and geodetic surveying, methods and departmental rules that apply to highway surveying operations of a state DOT and criteria for performing field topographic surveying in support of planning, engineering and design, construction, and environmental restoration activities. Plus much more

<a href="#"><u>GEODETIC AND CONTROL SURVEYING</u></a>	This manual provides technical specifications and procedural guidance for control and geodetic surveying. It is intended for use by engineering, topographic, and construction surveyors performing control surveys for civil works, military construction, and environmental restoration projects. Procedural and quality control standards are defined to establish uniformity in control survey performance and contract administration.
<a href="#"><u>GEOMETRICS FOR ROADS, STREETS, WALKS, AND OPEN STORAGE SPACES</u></a>	This manual provides guidance for design and layout of roads, streets, walks, and open storage areas for U .S . Army mobilization facilities .
<a href="#"><u>GEOSPATIAL POSITIONING ACCURACY STANDARDS PART 3: NATIONAL STANDARD FOR SPATIAL DATA ACCURACY</u></a>	The National Standard for Spatial Data Accuracy (NSSDA) implements a statistical and testing methodology for estimating the positional accuracy of points on maps and in digital geospatial data, with respect to georeferenced ground positions of higher accuracy. The NSSDA applies to fully georeferenced maps and digital geospatial data, in either raster, point, or vector format, derived from sources such as aerial photographs, satellite imagery, and ground surveys. It provides a common language for reporting accuracy to facilitate the identification of spatial data for geographic applications.
<a href="#"><u>GEOSPATIAL DATA AND SYSTEMS</u></a>	This manual specifically applies to functional areas having responsibility for regulatory investigations and studies, planning studies, real estate, emergency operations, and other functions involving automated GDS for surveying, mapping, or geospatial database development, such as modeling, and to GD&S that are used to produce a variety of products including: river and harbor maps, charts, and drawings
<a href="#"><u>HIGHWAY SURVEYING MANUAL</u></a>	This manual presents surveyors' methods and departmental rules that apply to highway surveying operations of a state DOT. Very extensive and complete description of highway surveying.
<a href="#"><u>NAVSTAR GLOBAL POSITIONING SYSTEM SURVEYING</u></a>	This manual provides technical specifications and procedural guidance for surveying and mapping with Navstar GPS.
<a href="#"><u>PHOTOGRAMMETRIC MAPPING</u></a>	This manual presents procedural guidance, technical specifications, and quality control (QC) criteria for performing aerial photogrammetric mapping activities.
<a href="#"><u>PRE-CONSTRUCTION SURVEY MANUAL</u></a>	The <i>Survey Manual</i> has been developed as a guide to provide uniform design practices for Department and consultant personnel conducting surveys and aerial mapping for Department projects. The designer/surveyor should attempt to meet all criteria and practices presented in the <i>Manual</i> .
<a href="#"><u>SURVEY MARKERS AND MONUMENTATION</u></a>	This manual establishes criteria and presents guidance on monumentation installation and documentation for all types of surveys required during the various stages of civil and military projects. The manual is intended to be a guide; however, when the standard Corps monuments are used, they shall be selected and constructed as defined in this manual.
<a href="#"><u>TOPOGRAPHIC SURVEYING</u></a>	This manual establishes procedural guidance, specifications, and quality control criteria for performing field topographic surveying in support of planning, engineering and design, construction, and environmental restoration activities. Topographic surveying is performed to determine the planimetric location and topographic relief of features in three dimensions.

## WOOD REFERENCE LIBRARY 25MB

A 4 book reference library including the manual “WOOD HANDBOOK – WOOD AS AN ENGINEERING MATERIAL” which is selling for 35+ USD at Amazon!! If you work with lumber this is the reference for you

<a href="#"><u>WOOD HANDBOOK – WOOD AS AN ENGINEERING MATERIAL US DEPARTMENT OF AGRICULTURE FOREST SERVICE</u></a>	<p>Summarizes information on wood as an engineering material. Presents properties of wood and wood-based products of particular concern to the architect and engineer. Includes discussion of designing with wood and wood-based products along with some pertinent uses.</p> <p>The accumulation of information that has resulted from its engineering and allied investigations of wood and wood products over nine decades—along with knowledge of everyday construction practices and problems—is the chief basis for this handbook.</p> <p>Past versions of the <i>Wood Handbook</i> tended to report only the findings and applications of FPL research. Although the handbook is not intended to be a state-of-the-art review, this approach would now leave significant gaps in some important areas. The current edition has broadened the sources of information to provide better coverage of important topics.</p> <p>HANDBOOK contains 489 pages – 19 chapters and a glossary</p>
<a href="#"><u>US ARMY ENGINEER CENTER AND SCHOOL CARPENTRY I</u></a>	<p>We designed this subcourse to teach you the basic skills of an Army carpenter and the building materials and tools you will use. Contained within this subcourse is instruction on construction prints, building materials, hand tools, and power machinery.</p>
<a href="#"><u>US ARMY ENGINEER CENTER AND SCHOOL CARPENTRY II</u></a>	<p>Carpentry is the art or science of measuring, cutting, fitting, and assembling wood and other materials to construct buildings or other structures. Many people associate carpenters with wood and other building materials and tools. They assume carpenters build only homes and other relatively small structures. Of course, this is not true. Carpenters work not only with wood but also with metals, plastic, and other synthetic materials. The carpentry trade includes skills required to construct buildings, bridges, docks, and wharf. Work must be accomplished in a manner consistent with environmental laws and regulations</p>
<a href="#"><u>CARPENTRY HEADQUARTERS DEPARTMENT OF THE ARMY</u></a>	<p>This manual is intended for use as a training guide and reference text for engineer personnel responsible for planning and executing theater of operations (TO) construction. It provides techniques and procedures for frame construction, preparation and use of bills of materials (BOMs), building layout, forming for concrete slabs and foundations, framing and finish carpentry, roof framing and coverings, bridge and wharf construction, and the materials used for these operations.</p>

## GROUNDWATER REFERENCE LIBRARY 103 MB

A complete Library containing courseware and/or reference on Aquifer Test design, application and interpretation of geophysical well logs, useful borehole geophysical-logging techniques to the solution of problems in ground-water hydrology, techniques of test drilling, auger drilling, coring and sampling, and the related drilling and sampling equipment and Ground-water recharge plus more

<p><a href="#"><u>TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE UNITED STATES GEOLOGICAL SURVEY CHAPTER B1 AQUIFER-TEST DESIGN, OBSERVATION AND DATA ANALYSIS</u></a></p>	<p>An aquifer test is a controlled field experiment made to determine the hydraulic properties of water-bearing and associated rocks. The test is made by observing ground-water flow that is produced by known hydraulic boundary conditions such as variations of head along a connected stream, pumping wells, changes in weight imposed on the land surface, or changes in recharge. The hydraulic boundary conditions may be imposed as part of the natural hydrologic system or by an act of man. Ground-water flow varies in space and time and is dependent on the hydraulic properties of the rocks and the boundary conditions imposed on the ground-water system.</p>
<p><a href="#"><u>TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE UNITED STATES GEOLOGICAL SURVEY CHAPTER 82 INTRODUCTION TO GROUND-WATER HYDRAULICS</u></a></p>	<p>This chapter is an introduction to the hydraulics of ground-water flow. With the exception of a few discussions in standard text format, the material is presented in programmed form. In this form, a short section involving one or two concepts is followed by a question dealing with these concepts. If the correct answer to this question is chosen, the reader is directed to a new section, in which the theory is further developed or extended. If a wrong answer is chosen, the reader is directed to a section in which the earlier material is reviewed, and the reasons why the answer is wrong are discussed; the reader is then redirected to the earlier section, to choose another answer to the question. This approach allows students who are either partially familiar with the subject, or well prepared for its study, to proceed rapidly through the material, while those who require more explanation are provided it within the sections that deal with erroneous answers.</p>
<p><a href="#"><u>US ARMY ENGINEER CENTER AND SCHOOL DRAINAGE ENGINEERING EN5456</u></a></p>	<p>Drainage engineering is important to all military construction. The entire serviceability of roads, airfields, and other installations depend on the adequacy of the drainage system. The objective of a drainage system is to minimize the effects of adverse weather conditions on operations by--</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Removing all surface water from operating areas.</li> <li><input type="checkbox"/> Intercepting and disposing of runoff from adjoining areas.</li> <li><input type="checkbox"/> Intercepting and removing detrimental ground water.</li> </ul>
<p><a href="#"><u>Techniques of Water-Resources Investigations of the United States Geological Survey Chapter E1 APPLICATION OF BOREHOLE GEOPHYSICS TO WATER-RESOURCES INVESTIGATIONS</u></a></p>	<p>This manual is intended to be a guide for hydrologists using borehole geophysics in ground-water studies. The emphasis is on the application and interpretation of geophysical well logs, and not on the operation of a logger. It describes in detail those logging techniques that have been utilized within the Water Resources Division of the U.S. Geological Survey, and those used in petroleum investigations that have potential application to hydrologic problems. Most of the logs described can be made by commercial logging service companies, and many can be made with small water-well loggers.</p>
<p><a href="#"><u>Techniques of Water-Resources Investigations of the United States Geological Survey Chapter E2 BOREHOLE GEOPHYSICS APPLIED TO GROUND-WATER INVESTIGATIONS</u></a></p>	<p>The purpose of this manual is to provide hydrologists, geologists, and others who have the necessary background in hydrogeology with the basic information needed to apply the most useful borehole geophysical-logging techniques to the solution of problems in ground-water hydrology. Geophysical logs can provide information on the construction of wells and on the character of the rocks and fluids penetrated by those wells, as well as on changes in the character of these factors over time. The response of well logs is caused by petrophysical factors, by the quality, temperature, and pressure of interstitial fluids, and by ground-water flow. Qualitative and quantitative analysis of analog records and computer analysis of digitized logs are used to derive geohydrologic information. This information can then be extrapolated vertically within a well and laterally to other wells using logs.</p>
<p><a href="#"><u>Techniques of Water-Resource Investigations of the United States Geological Survey Chapter F1 APPLICATION OF DRILLING, CORING, AND SAMPLING TECHNIQUES TO TEST HOLES AND WELLS</u></a></p>	<p>The purpose of this manual is to provide ground-water hydrologists with a working knowledge of the techniques of test drilling, auger drilling, coring and sampling, and the related drilling and sampling equipment. For the most part, the techniques discussed deal with drilling, sampling, and completion of test holes in unconsolidated sediments because a hydrologist is interested primarily in shallow-aquifer data in this type of lithology</p>
<p><a href="#"><u>GROUNDWATER HYDROLOGY EM 1110-2-1421</u></a></p>	<p>This Engineer Manual provides guidance to Corps of Engineers (CE) personnel who are responsible for groundwater-related projects. This manual was written with special attention to groundwater-related applications prevalent within the CE. Thus, sections addressing site investigation procedures and the performance of modeling studies are included. Additionally, a chapter focusing on the interaction between surface water and groundwater is included.</p>
<p><a href="#"><u>Basic Ground-Water Hydrology USGS</u></a></p>	<p>Ground water is one of the Nation's most valuable natural resources . It is the source of about 40 percent of the water used for all purposes exclusive of hydropower generation and</p>

	<p>electric powerplant cooling.</p> <p>Surprisingly, for a resource that is so widely used and so important to the health and to the economy of the country, the occurrence of ground water is not only poorly understood but is also, in fact, the subject of many widespread misconceptions . Common misconceptions include the belief that ground water occurs in underground rivers resembling surface streams whose presence can be detected by certain individuals . These misconceptions and others have hampered the development and conservation of ground water and have adversely affected the protection of its quality</p>
<p><a href="#"><u>Section 18, Ground Water, SCS National Engineering Handbook,</u></a></p>	<p>The purpose of this section of the National Engineering Handbook is to present information on ground water as it relates to Soil Conservation Service programs. This material was compiled to help SCS personnel plan and conduct ground-water studies under established SCS standards and policies.</p> <p>Investigations are made (1) to determine the availability and suitability of ground water for beneficial use and (2) to provide groundwater information needed to plan, design and construct works of improvement. SCS does not make ground-water surveys or studies for the sole purpose of collecting basic data.</p>
<p><a href="#"><u>GEOLOGIC INVESTIGATIONS FOR WATERSHED PLANNING</u></a>  <a href="#"><u>U. S. Department of Agriculture</u></a>  <a href="#"><u>SOIL CONSERVATION SERVICE</u></a>  <a href="#"><u>Engineering Division</u></a></p>	<p>This technical release outlines general procedures and methods for conducting geologic investigations related to sedimentation, engineering geology, and ground water for work plan development. It replaces tentative technical release number 17 issued in March 1961. For information on detailed procedures and criteria not included in this technical release, the field geologists are referred to the Engineering and Watershed Planning Units for advice and assistance and to existing Engineering and Watershed Planning Unit and Washington Office memoranda, technical releases, guides, and handbooks.</p>
<p><a href="#"><u>GROUNDWATER RECHARGE</u></a>  <a href="#"><u>U. S. Department of Agriculture</u></a>  <a href="#"><u>SOIL CONSERVATION SERVICE</u></a>  <a href="#"><u>Engineering Division</u></a></p>	<p>Ground water is an important factor in Soil Conservation Service operations. Large amounts of water are being lost by runoff and evaporation in the same areas where ground-water supplies are being depleted. Added emphasis is needed on the conservation and use of excess runoff where there are possibilities for increased underground storage.</p> <p>Ground-water recharge is but one phase in the management of a groundwater basin. In some areas, long-term withdrawal exceeds long-term recharge and water is being mined. Without proper management to obtain a sustained yield, artificial recharge becomes a mere stop-gap measure. It may be possible to manage a ground-water reservoir like a surface reservoir. That is, water is placed in storage in periods of excess and withdrawn in periods of shortage.</p>

## CONSTRUCTION TRADES LIBRARY 130 mb

**A tradesmen training library covering carpentry, electricians, plumbers, painters. Asphalt, aggregate, cement worker, earth moving equipment operation and construction inspection plus.... A good reference for a construction supervision and engineers**

<a href="#"><u>CARPENTRY FM 5-426</u></a>	<p>This manual is intended for use as a training guide and reference text for engineer personnel responsible for planning and executing theater of operations (TO) construction. It provides techniques and procedures for frame construction, preparation and use of bills of materials (BOMs), building layout, forming for concrete slabs and foundations, framing and finish carpentry, roof framing and coverings, bridge and wharf construction, and the materials used for these operations.</p>
<a href="#"><u>CONSTRUCTION ELECTRICIAN BASIC NAVEDTRA 11038</u></a>	<p>This manual provides guidance for the training for a construction electrician basic. The manual contains theory and basic information required for this classification followed by questions to test the readers understanding of the material covered in the manual. Topics covered include rigging, drawings-specifications, power generation-distribution, interior wiring, lighting, appliances.</p>
<a href="#"><u>CONSTRUCTION ELECTRICIAN INTERMEDIATE NAVEDTRA 11039</u></a>	<p>This manual provides guidance for the training for a construction electrician intermediate. The manual contains theory and basic information required for this classification followed by questions to test the readers understanding of the material covered in the manual. Topics covered include rigging, drawings-specifications, power generation-distribution, interior wiring, fibre optics - lighting, electrical equipment.</p>
<a href="#"><u>PLUMBING, PIPEFITTING AND SEWERAGE FM 5- 420</u></a>	<p>This manual is a guide for engineer personnel responsible for conducting plumbing and pipe fitting operations. This manual provides information on water, waste, and heating systems and basic plumbing techniques. Use this guide to help repair fixtures, leaky pipes, and valves; to make pipe joints; to install water, waste, and heating systems; and to test and service these systems. Plumbers install and repair water systems, waste systems, and fixtures; cut, ream, thread, and bend pipes; and caulk, solder, and test joints or systems for leaks.</p>
<a href="#"><u>PAINTING: NEW CONSTRUCTION AND MAINTENANCE EM 1110-2-3400</u></a>	<p>This manual provides painting guidance to engineering, operations, maintenance, and construction personnel and other individuals responsible for the protection of U.S. Army Corps of Engineers (USACE) structures. It gives broad-base instructions on corrosion and corrosion protection using protective coating and state-of-the-art procedures that can be employed on Corps projects, which can aid in attaining better and, from a long-range viewpoint, more economical paint jobs.</p>
<a href="#"><u>ASPHALT TECHNICIAN TRAINING INDOT</u></a>	<p>The certified technician is the cornerstone of the Quality Assurance Program. Without a certified technician determining the quality and consistency of the HMA being produced, pavement performance problems are certain. This fundamental shift of quality control from INDOT to the Contractor is important because it places control of the plant in the hands of the Contractor. It is the responsibility of the certified technician to test the quality and consistency of the HMA being produced. His job however does not stop at this point. The certified technician must also ensure that the HMA maintains this consistency by monitoring the proportioning of aggregates and binder by the plant. Finally, and most important, the certified technician must know what action to take when the materials deviate from specifications.</p>
<a href="#"><u>NARRATIVE FOR A 500 TON/HR DRUM MIX ASPHALT PLANT</u></a>	<p>This narrative is designed to give the reader insight into the operation of a typical Asphalt Plant. Operating conditions, equipment, and environmental aspects are discussed.</p>
<a href="#"><u>AGGREGATE TECHNICIAN INDOT</u></a>	<p>The purpose of this manual is to train and provide reference information for the aggregate Technician. Information is provide by following a "TECHICIAN" who is monitoring the operation of an Aggregate Plant. The daily activities and QA checks are explained fully in the manual.</p>
<a href="#"><u>CONCRETE ENGINEERING EN5466 US ARMY ENGINEERING CENTER AND SCHOOL</u></a>	<p>This subcourse is designed to teach you how to identify, plan, and supervise in general and specific terms for the following items: characteristic and properties of the components of concrete; ways to design concrete mixes; determination of quantities of concrete needed for specific construction projects; formwork design; mixing, placing and curing of concrete; and physical plants employed in the production of concrete.</p>
<a href="#"><u>SOUTH DAKOTA DOT CONCRETE PLANTS</u></a>	<p>This manual is intended for use as a training guide and reference text for Concrete Technicians who are responsible for QA and monitoring of Concrete Plant operations. The operation of a 'typical concrete plant is described in this manual.</p>
<a href="#"><u>CONCRETE TECHNICIAN TRAINING MANUAL INDOT</u></a>	<p>The certified technician is the cornerstone of the Quality Assurance Program. Without the certified technician determining the quality and consistency of the concrete being produced, bridge deck performance problems are certain. This fundamental shift of quality control from INDOT to the Contractor is important because it places control of the material in the hands of the Contractor. It is the responsibility of the certified technician</p>

	<p>to test the quality and consistency of the concrete being produced. This job however does not stop at this point. The certified technician must also ensure that the concrete maintains this consistency by monitoring the materials at the plant. Finally, and most important, the certified technician must know what action to take when the materials deviate from specifications.</p>
<p><a href="#"><u>DRAINAGE ENGINEERING EN5466</u></a> <a href="#"><u>US ARMY ENGINEERING CENTER AND SCHOOL</u></a></p>	<p>This manual provides guidance for the training for a Drainage Engineer. The manual contains theory and basic information required for this classification followed by questions to test the readers understanding of the material covered in the manual. Topics covered include introduction of hydrology, estimation of runoff using rainfall intensity/duration curves, design of open channels, culverts and prevention of erosion</p>
<p><a href="#"><u>CONSTRUCTION INSPECTION MANUAL</u></a> <a href="#"><u>LEXINGTON KENTUCKY</u></a></p>	<p>The purpose of the Construction Inspection Manual is to provide reference material applicable to the construction of infrastructure. The manual provides discussion of construction techniques and offers guidance to the Inspector for the proper inspection and documentation of construction activities. Inspectors shall study and become familiar with the contents of this manual and shall follow its techniques as closely as practicable. Inspectors shall also become familiar with related discussions in the other manuals. This Construction Inspection Manual is presented with the intent that it will aid in achieving the high quality construction standards necessary to ensure long-term benefits from our public infrastructure.</p>
<p><a href="#"><u>EARTHMOVING OPERATIONS FM 5 – 434</u></a></p>	<p>This field manual (FM) is a guide for engineer personnel responsible for planning, designing, and constructing earthworks in the theater of operations. It gives estimated production rates, characteristics, operation techniques, and soil considerations for earthmoving equipment. This guide should be used to help select the most economical and effective equipment for each individual operation. This manual discusses the complete process of estimating equipment production rates. However, users of this manual are encouraged to use their experience and data from other projects in estimating production rates. The material in this manual applies to all construction equipment regardless of make or model. The equipment used in this manual are examples only. Information for production calculations should be obtained from the operator and maintenance manuals for the make and model of the equipment being used.</p>
<p><a href="#"><u>EARTH WORK INSPECTOR TRAINING</u></a></p>	<p>The construction of a sound earth roadbed is an essential part of highway construction. It provides the foundation for the base and surface courses. The Earthwork Inspector is given the responsibility of assuring that a sound earthwork foundation is constructed. Training Activity has provided this course to aid and assist the Earthwork Inspector in his task. This course contains important instructional material, procedures and policies that have been developed to maintain uniformity among Earthwork Inspectors. Earthwork involves all of the various construction activities that are needed to prepare a roadbed to its final subgrade elevation. A typical earthwork project will include:</p> <ul style="list-style-type: none"> <li>• Surveying</li> <li>• Erosion Control</li> <li>• Pipe Installation</li> <li>• Clearing and Grubbing</li> <li>• Excavation</li> <li>• Embankment Placement</li> <li>• Surfacing</li> <li>• Fencing</li> </ul> <p>This course will cover what you need to know, do and look for during the inspection of excavation and embankment placement.</p>
<p><a href="#"><u>HOT MIX ASPHALT TECHNICIAN TRAINING MANUAL</u></a> <a href="#"><u>MTRAC</u></a></p>	<p>This training manual was developed as part of a multi-regional effort to assist states with meeting the requirements of the Code of Federal Regulations, Part 637, for “qualified” personnel to perform material sampling and testing for quality control and quality acceptance (QC/QA). The ultimate goal of the group is also to promote reciprocity of this “qualification” across state lines. To that end, the group recommends that each training program cover the procedures and specifications listed here as a minimum core. The core materials should include presentation of the current AASHTO procedures. Individual state requirements, if needed, should be presented in addition to, not instead of, the approved AASHTO versions.</p>

## FACILITIES ENG REFERENCE LIBRARY 35.2 MB

**A reference library for the facilities manager or engineer covering these topics  
painting, roof repair, elevators, lighting, ventilation studies, electrical, structural,  
security, safety plus**

<p><b>TI 810 -90</b> <b>TECHNICAL INSTRUCTIONS</b> <b>ELEVATOR SYSTEMS</b></p> <p><b>US ARMY COE</b></p>	<p>DESIGN CONSIDERATIONS. The criteria and guidance contained in this instruction are applicable to elevators serving ordinary occupancies that are less than 20 floors in height and less than 25,000 m (250,000 ft ) in area. 2 2 Structures higher than 20 stories, or greater than 25,000 m (250,000 ft ) in area, or structures involving industrial or 2 2 special occupancies is beyond the scope of this instruction and may require the services of a vertical transportation expert with specialized experience in the type of work involved.</p>
<p><a href="#"><u>TM 5-662</u></a></p> <p><a href="#"><u>SWIMMING POOL OPERATION AND MAINTENANCE</u></a></p>	<p>This manual provides guidance for the effective operation and maintenance of swimming pools and associated equipment at Army Installations by personnel assigned to the Directorate of Engineering and Housing organization. It may be used as a general reference source in related training programs. This manual does not replace nor modify manufacturers' instructions on specific equipment. Objectives are to achieve sanitary and efficient operation and maintenance of swimming pools and to eliminate hazards to life and property.</p>
<p><a href="#"><u>NAVFAC MO - 321</u></a> <a href="#"><u>FACILITIES MANAGEMENT</u></a></p>	<p>This manual will assist the Public Works Officer (PWO) or Staff Civil Engineer (SCE) in controlling the resources directed to the maintenance, repair and minor construction of real property, and the operations of public works. The system, detailed in this publication, is broadly termed the Facilities Management System. The principles of the system are basic and not substantially different from those used by most people handling day-to-day personal business. You earn a salary out of which the fixed expenses are set aside. The remaining salary must be used to satisfy a number of needs. Chances are the needs are greater than the money that is available. Decisions must be made concerning relative importance and cost. An estimated price is placed against each desire, and priorities are placed against each need. This, in simple form, is facilities management--planning resources available against a listing of all public works need ds.</p>
<p><a href="#"><u>NAVFAC P 710.0</u></a></p> <p><a href="#"><u>PAINT HANDBOOK</u></a></p>	<p>This handbook provides guidance to Planners-Estimators in projecting labor hour requirements for-workers to perform typical facilitiesmaintenance tasks. Proper use of the data in this handbook will help provide more realistic,-consistent, and timely labor hour estimates.- These estimates provide bench marks that enable managers to evaluate and control actions based on improvement. More effective response and support at minimum cost can, in turn, be realized. The major changes appearing in this revision are the expansion of existing standards into more useful segments of work. The largest areas of concentrated effort are reflected in Brush Painting and Surface Preparation. Other additions or changes occur in the Glazing, Roller Painting and Spray Painting areas.</p>
<p><b>TI 811-11</b></p> <p><b>LIGHTING DESIGN</b></p> <p><b>US ARMY COE</b></p>	<p>This manual is based on information contained in the Illuminating Engineering Society of North America's manual (IESNA). It is a design tool containing many rules of thumb to be used as guidelines for design. However specific manufacturers being considered for your design should be consulted.</p>
<p><b>TM 5-617</b></p> <p><b>MAINTENANCE AND REPAIR OF ROOFS</b></p>	<p>This manual contains information applying to safety measures and inspection, maintenance, repairs, reroofing, and causes of failures of built-up roofing, asphalt-shingle roofing, roll roofing, asbestocement roofing, metal roofing, slate roofing, tile roofing, wood-shingle roofing, and flashing appurtenances. For convenience, each type of roofing is treated in a separate chapter, except for cross reference to avoid repetition. Information on sheet metal is presented.</p>
<p><b>NISTR 5329</b></p> <p><b>MANUAL FOR VENTILATION ASSESSMENT IN MECHANICALLY VENTILATED COMMERCIAL BUILDINGS</b></p>	<p>This manual describes procedures for assessing ventilation system performance and other aspects of building ventilation in mechanically ventilated commercial buildings. These procedures are intended to provide basic information on building ventilation for comparing ventilation performance to standards, guidelines and building design values and for investigating indoor air quality problems. The procedures in the manual are based on established measurement techniques and available instrumentation and provide practical means for obtaining reliable information on ventilation performance. The manual does not describe complete system evaluations that are performed during testing and balancing efforts or sophisticated measurement techniques that are used in ventilation research. The manual is written for technically competent indoor air quality investigators, building operators and others who need to perform ventilation assessments in order to address existing problems or as part of preventive maintenance programs. The manual provides background information on building ventilation, discusses instrumentation used in ventilation assessments, describes measurement techniques for determining the values of key ventilation performance parameters, and presents procedures to evaluate building ventilation using these techniques.</p>
<p><b>NAVFAC MO - 209</b></p> <p><b>MAINTENANCE OF STEAM, HOT WATER AND COMPRESSED AIR DISTRIBUTION SYSTEMS</b></p>	<p>This manual is directed to operators and supervisors who actually perform and supervise operations and maintenance work. The manual is divided into eight chapters with chapter one covering definitions and responsibilities. Chapter two deals with basic inspection, testing, and reporting procedures. Chapter three covers steam distribution systems, while chapter four covers high temperature water distribution systems. Chapter five deals with compressed air distribution systems. Chapters six and seven cover instruments and</p>

	controls and piping and associated equipment, respectively. Chapter eight covers steam traps. In general, this manual provides guidelines for maintenance and operation of steam, hot water and compressed air distribution systems.
<b>NAVFAC MO - 016 FACILITIES ENGINEERING ELECTRICAL INTERIOR FACILITIES</b>	This manual provides guidance to facilities maintenance personnel in the maintenance of interior electrical systems of 600 volts and less. These systems include such components as illumination, low voltage systems, rotating equipment, motor control centers, solid-state equipment, transformers, and switchgear. It also applies to low voltage controlled devices on high-voltage systems. The procedures presented in this manual are basic and can be applied to the equipment of any manufacturer. Detailed information and instructions should be obtained from the instruction book for the particular type of equipment being serviced.
<b>UFC 3 – 300 STRUCTURAL ENGINEERING</b>	The purpose of this UFC is to provide technical guidance and outline technical requirements for the more typical aspects of the structural engineering design portion of Architect/Engine (A/E) contracts for the Naval Facilities Engineering Command (NAVFAC). The information provided in this guide shall be utilized by structural engineers in the development of the plans, specifications, calculations, and Design-Build Request for Proposals (RFP) and shall serve as the minimum engineering design requirements. Project conditions may dictate the need for design that exceeds these minimum requirement.
<b>EN 5465 DRAINAGE ENGINEER TRAINING</b>	This manual provides guidance for the training of a Drainage Engineer. The manual contains theory and basic information required for this classification followed by questions to test the readers understanding of the material covered in the manual. Topics covered include introduction to hydrology, estimation of run-off using rainfall intensity/duration curves, design of open channels, culverts and prevention of erosion.
<b>EN 5466 CONCRETE ENGINEERING TRAINING COURSE</b>	This manual provides the information required for the training of a Concrete Engineer. Training is provided in determine concrete mix ratios, design of forms and all other concrete related field construction techniques and requirements. Very good concrete reference book.
<b>NAVFAC P 433 WELDING MATERIALS HANDBOOK</b>	This handbook describes various welding materials and techniques available to the SEABEE welder. The emphasis is placed upon interchangeability of materials ordinarily found in the Naval Construction Forces Table of Allowance. Although complete coverage of all possible materials and their various applications is not furnished, the data provided in this handbook will cover a majority of maintenance situations. The referenced welding materials can be requisitioned from the supporting Construction Battalion Centers. This handbook also describes several related maintenance techniques. These include: Wearfacing, MAPP Gas Welding, and some cold processes that can be substituted for welding procedures in certain maintenance applications.
<b>HOT MELT TECHNICIANS TRAINING COURSE MANUAL M-TRAC</b>	This training manual was developed as part of a multi-regional effort to assist states with meeting the requirements of the Code of Federal Regulations, Part 637, for “qualified” personnel to perform material sampling and testing for quality control and quality acceptance (QC/QA).
<b><a href="#">NAVFAC P –307</a> <a href="#">MANAGEMENT OF WEIGHT</a> <a href="#">HANDLING EQUIPMENT</a></b>	This manual is intended for use as an operations guide and reference text for Cranes and other Weight Handling Equipment used at Navy installations. Procedures, Maintenance and Safety aspects are discussed in great detail.
<b>EM 1110 - 1 – 1802 GEOPHYSICAL EXPLORATION FOR ENGINEERING AND ENVIRONMENTAL INVESTIGATIONS</b>	This manual provides an introduction to geophysical exploration for engineering, geological, and environmental (to include Hazardous, Toxic and Radioactive Waste) investigations. Descriptions and guidance are provided for geophysical methods typically used in these investigations. The manual furnishes a broad overview of geophysical applications to common engineering, environmental and geological problems. Descriptions of the most commonly conducted geophysical procedures are given. These contents are not proposed to explicitly develop field procedures and data reduction techniques for geophysical surveys. Chapter 2 develops the procedural evaluation, use, and deployment of the generalized geophysical approach. Subsequent chapters address particular geophysical methodologies.
<b>ARMY TM 5 – 627 TRACKAGE MAINTENANANCE</b>	This manual prescribes the policy, criteria, and procedures for inspecting, maintaining, and repairing trackage at military installations. It establishes maintenance standards for railroad and crane trackage systems and provides guidance for the selection, use, and installation of railroad materials and equipment and track components that will perform satisfactorily. Repair, modification, and minor construction procedures are presented within the limitation of maintenance personnel responsible.
<b>USACE SECTION 13720A ELECTRONIC SECURITY SYSTEMS</b>	The Contractor shall provide an Electronic Security System (ESS) as describe ed and shown including installation of any Government Furnished Equipment. All computing devices, as defined in 47 CFR 15, shall be certified to comply with the requirements for Class A computing devices and labeled as set forth in 47 CFR 15. Electronic equipment shall comply with 47 CFR 15.
<b>USACE SECTION 16751 CLOSED CIRCUIT SYSTEMS</b>	The Contractor shall configure the system as described and shown. All television equipment shall conform to EIA 170 specifications. The system shall include all connectors, adapters, and terminators necessary to interconnect all equipment. The Contractor shall also supply all cabling necessary to interconnect the closed circuit television (CCTV) equipment installed in the Security Center, and interconnect equipment installed at remote control/monitoring stations. If the CCTV system is installed for use with an Electronic Security System (ESS) the Contractor shall interface the CCTV system with the ESS.

<p><b>DOE STANDARD</b></p> <p><b>FIRE PROTECTION CRITERIA</b></p>	<p>This Standard provides supplemental fire protection guidance applicable to the design and construction of DOE facilities and site features (such as water distribution systems) that are also provided for fire protection. <b>It is intended to be used in conjunction with the applicable building code, National Fire Protection Association (NFPA) Codes and Standards, and any other applicable DOE construction criteria.</b></p>
<p><b>UFC 3 – 410 – 02N</b></p> <p><b>DESIGN: HEATING, VENTILATING, AIR CONDITIONING AND DEHUMIDIFYING SYSTEMS</b></p>	<p>This handbook provides the Naval Facilities Engineering Command's policy and criteria for selection and design of heating, ventilating, air conditioning (HVAC), and dehumidifying systems</p>
<p><b>DOE STANDARD</b></p> <p><b>GUIDE TO GOOD PRACTISES FOR EQUIPMENT AND PIPE LABELLING</b></p>	<p>An effective labeling program will clearly identify each component required in the operation of the facility, warn of specific hazards, and clearly identify emergency equipment. Effective labeling will enhance training effectiveness and help reduce operator and maintenance errors resulting from incorrect identification of facility equipment. Effective labeling will help reduce personnel exposure to radiation or hazardous materials by reducing the time spent identifying components. Piping labels that identify the contents, or at least the type of hazard represented by the contents, and the normal direction of flow will aid in preventing or mitigating leaks and spills. Labels on electrical equipment identifying the applicable feeder panel or breaker will aid in isolation for lockout/tagout, and will aid in quick and accurate response to equipment emergencies.</p>
<p><b>DOE</b></p> <p><b>ELECTRICAL SAFETY HANDBOOK</b></p>	<p><i>Electrical Safety Handbook</i> presents the Department of Energy (DOE) safety standards for DOE field offices or facilities involved in the use of electrical energy. It has been prepared to provide a uniform set of electrical safety guidance and information for DOE installations to effect a reduction or elimination of risks associated with the use of electrical energy. The objectives of this handbook are to enhance electrical safety awareness and mitigate electrical hazards to employees, the public, and the environment.</p>

## SOILS AND FOUNDATIONS REFERENCE LIBRARY

### This library contains the course material and reference manuals for a soils and foundations workshop run by NHI plus DOT manuals

<p>NHI Course 132012 Soils and Foundations Workshop Instructor's Guide <b>349 PAGES</b></p>	<p>The Soils and Foundations Workshop (NHI Course No. 132012) is a basic geotechnical course which will provide practical knowledge for both generalists and those planning to take more advanced geotechnical courses in the future. The workshop will be of most benefit to bridge and foundation engineers; particularly those involved in the design and construction aspects of highway projects. The course objective is to impart to the participants the necessary knowledge and skills to determine the minimum level of geotechnical effort needed on a highway project. The participants will develop knowledge and appreciation of foundation activities in all project phases.</p> <p>The course content follows a project oriented approach whereby the actual foundation work for a bridge project is traced from preparation of the boring request, to laboratory work, through design computations to construction activities. The concepts presented in each lesson are concise and specifically directed at a particular operation in the foundation design process. Recommendations are presented on how to efficiently layout borings, how to minimize approach embankment settlement, how to design the most cost-effective pile foundation, and how to transmit design information properly to construction. Basic examples are included in several lessons for hands-on knowledge. Continuity between lessons is achieved by sequencing the information in the normal progression of a foundation design study. In each phase of the fictitious project the soil concepts are developed into specific foundation designs or recommendations for that segment of the workshop design problem.</p> <p><b>This Instructor's Guide is developed to provide an annotated outline and instructor's notes of the course that can be used as a guide during the preparation and delivery of the course by FHWA approved qualified Instructors.</b></p>
<p>Participant Workbook 423 PAGES</p>	<p>This Participant Workbook includes copies of visual aids and student exercises that closely follows the presentations being made by the instructors. The student exercises are designed to promote the interaction in the classroom, and to illustrate the basic principles and analyses. Solutions to the exercises are included in the back of the workbook.</p>
<p>Participant Reference Manual NHI-00-045 335 PAGES</p>	<p>The Reference Manual (NHI-00-045), which was based on the 2nd edition of the previous Workshop Manual (1993), is geared to the practicing engineer who routinely deals with soils and/or foundations but has little theoretical background in soil mechanics or foundation engineering.</p>
<p>the Lexington-Fayette Urban County Government Geotechnical Manual 129 PAGES</p>	<p>This Manual is presented in a sequence to provide the reader with general information regarding the purpose and contents of the Manual, and then to lead the reader through the major component of performing geotechnical explorations for routine infrastructure projects.</p> <p>The manual is separated into the following major sections:</p> <ol style="list-style-type: none"> <li>1.0. General Information</li> <li>2.0 Project Review and Site Reconnaissance</li> <li>3.0. Drilling, Sampling, and Recording Procedures</li> <li>4.0. Preparation of Boring Plans</li> <li>5.0. Laboratory Testing</li> <li>6.0 Engineering Analyses and Evaluations</li> <li>7.0 Report Development</li> </ol> <p>Summaries of the information included under each major heading are presented in the following paragraphs. Primary requirements identified in each section are also summarized. Additional guidelines and requirements are discussed throughout the text of the Manual. This overview has been developed to provide the reader with a brief survey of each section and the geotechnical requirements discussed therein.</p>
<p><b>REQUIREMENTS FOR GEOTECHNICAL INVESTIGATION AND PAVEMENT INVESTIGATION (FIELD, LABORATORY AND ENGINEERING) INDIANA DOT - 67 pages</b></p>	<p>All geotechnical work performed for the State of Indiana or Local Agencies, such as any Indiana local municipalities and/or county government involving the use of State or Federal funds after 31 December 1996 shall meet the requirements described herein. All the dimensions of the equipments shall meet the requirements of AASHTO and/or ASTM unless otherwise specified in "Exhibit C".</p> <p>All work performed by the Consultant Geotechnical Engineer under these revised requirements shall consist of making a complete foundation investigation for the adequate design and construction of bridges, roadway or any other associated structures.</p> <p>A complete foundation investigation shall consist of an adequate program of field sampling, laboratory testing and engineering analysis and evaluation with the results presented in report form. The investigation shall be performed in compliance with the procedures outlined in this document and generally accepted principles of sound engineering practices</p>

