

VERMONT AGENCY OF TRANSPORTATION 2009 ENGLISH/METRIC CONSTRUCTION MANUAL

ORGANIZATION OF CONTENTS

This manual is arranged in eleven sections, with each section having a separate and distinct purpose. The overall purpose of this manual is to provide a ready reference to the policies and procedures now in effect in the Construction Section with regard to personnel matters and transportation construction. While it is intended that the use of this manual is meant to standardize methods and final results, it does not preclude the development of new ideas and procedures. As changes in policy occur, changes in this manual will be made.

SECTION I - GENERAL

Section I explains the organization of VTrans and the relationship of the Construction Section to the other sections and divisions that make up VTrans. The policies and guides under which the Construction Section operates are discussed and the duties of the various personnel are explained.

SECTION II - CONTRACT ADMINISTRATION

Section II outlines the administrative work necessary during the active life of a construction contract, from contract award through all phases of construction phase to the time the project is complete and ready for final payment. The various contract documents and forms are also explained.

SECTION III - ENGINEERING AND CONSTRUCTION SURVEYING

Section III describes engineering work and survey methods used to locate the roadway and structures in the field. Also included are directions for sectioning borrow pits, measuring quantities, and checking grades using survey methods and taking original and final cross sections.

SECTION IV - CONSTRUCTION AND INSPECTION DETAILS

Section IV is a basic guide for the administration and inspection of construction items; this includes engineering requirements prior to and during construction, the sampling and testing of materials, construction procedures and inspection, and the measurement and documentation of quantities. The major portion of this section is devoted to item specific descriptions and explanations of what is required in terms of: General, Required Submittals, Engineering, Sampling & Testing, Construction & Inspection, and Measurement & Documentation.

SECTION V - SAMPLE FIELD BOOK

Section V provides general guidelines for setting up and maintaining project field books and prescribes a standard system for the numbering of field books. Example field book pages have been provided in this section that represent preferred method of detailing item quantities and recording other field information.

SECTION VI - FINALS UNIT PROCEDURES

Section VI provides detailed instructions for performing work required after completion and acceptance of a project. This work includes the determination of the final quantities, the preparation of the final estimate, record plans, and the compiling and filing of project records.

SECTION VII - TABLES AND CHARTS

Section VII contains a collection of tables, charts, and diagrams to aid in performing field work and computing quantities.

SECTION VIII - EVALUATIONS

Section VIII provides descriptions of the evaluation processes that take place within the Construction Section such as; the evaluation of prime contractors, subcontractors, temporary employees, and consultants. Also included are sample evaluation forms.

SECTION IX - SITE MANAGER

Section IX provides an introduction to the use of the Site Manager User Manual as well as detailed instructions related to the use of Site Manager.

SECTION X - SAFETY

Section X outlines the Agency's expectations related to safety and proper safety procedures while on VTrans construction sites.

SECTION XI - ENVIRONMENTAL

Section XI provides necessary information related environmental policies, procedures, regulations, permits, and documentation.

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- 4-651.20 Required Submittals
- 4-651.30 Engineering
- 4-651.40 Sampling and Testing
- 4-651.50 Construction and Inspection
- 4-651.60 Measurement and Documentation

4-652 EROSION PREVENTION AND SEDIMENT CONTROL PLAN (EPSCP)

- 4-652.10 General
- 4-652.20 Required Submittals
- 4-652.30 Engineering
- 4-652.40 Sampling and Testing
- 4-652.50 Construction and Inspection
- 4-652.60 Measurement and Documentation

4-653 EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

- 4-653.10 General
- 4-653.20 Required Submittals
- 4-653.30 Engineering
- 4-653.40 Sampling and Testing
- 4-653.50 Construction and Inspection
- 4-653.60 Measurement and Documentation

4-656 PLANTING TREES, SHRUBS AND VINES

- 4-656.10 General
- 4-656.20 Required Submittals
- 4-656.30 Engineering
- 4-656.40 Sampling and Testing
- 4-656.50 Construction and Inspection
- 4-656.60 Measurement and Documentation

4-675 TRAFFIC SIGNS

- 4-675.10 General
- 4-675.20 Required Submittals
- 4-675.30 Engineering
- 4-675.40 Sampling and Testing
- 4-675.50 Construction and Inspection
- 4-675.60 Measurement and Documentation

4-676 DELINEATORS

- 4-676.10 General
- 4-676.20 Required Submittals
- 4-676.30 Engineering
- 4-676.40 Sampling and Testing
- 4-676.50 Construction and Inspection
- 4-676.60 Measurement and Documentation

4-677 OVERHEAD TRAFFIC SIGN SUPPORTS

- 4-677.10 General
- 4-677.20 Required Submittals
- 4-677.30 Engineering
- 4-677.40 Sampling and Testing
- 4-677.50 Construction and Inspection
- 4-677.60 Measurement and Documentation

4-678 TRAFFIC CONTROL SIGNALS

This section has been reserved for future development.

4-679 STREET LIGHTING

This section has been reserved for future development.

4-680 TRAVEL INFORMATION SIGNS

This section has been reserved for future development.

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5-110 GENERAL NOTES

5-120 BOOK NUMBERING

5-130 BOOK CONTENTS - GENERAL

5-130.10	Book #1 - Summary
5-130.20	Book #2 - Drainage
5-130.30	Book #3 - Bridge
5-130.40	Book #4 - Control
5-130.50	Book #5 - Job Diary
5-130.60	Book #6 - Excavation (Summary and Detail)
5-130.70	Book #7 - Item Detail

5-140 FIELD BOOK - SET UP

5-140.10	Resident Engineer Information
5-140.20	Resident Engineer Information Detail
5-140.30	Index Summary
5-140.40	Index Detail
5-140.50	Contractor Information Summary
5-140.60	Contractor Information Detail
5-140.70	Project Work Force Summary
5-140.80	Project Work Force Detail
5-140.90	Materials and Supplier Information - Deleted April 2010
5-140.100	Material and Supplier Detail - Deleted April 2010

5-150 FIELD BOOK - ITEM RELATED ENTRIES

5-150.10	Example # 1 - Summary
5-150.20	Example # 1 - Detail
5-150.30	Example # 2 - Summary
5-150.40	Example # 2 - Detail
5-150.50	Example # 3 - Summary
5-150.60	Example # 3 - Detail
5-150.70	Example # 4 - Summary
5-150.80	Example # 4 - Detail
5-150.90	Example # 5 - Summary
5-150.100	Example # 5 - Detail
5-150.110	Example # 6 - Summary
5-150.120	Example # 6 - Detail
5-150.130	Utilizing Contract Item Report for Final Quantities

5-160 CONCRETE POUR RECORD

- 5-160.10 Concrete Pour Record Summary
- 5-160.20 Concrete Pour Record Detail

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6-110 PROJECT REVIEW

- 6-110.10 Preparation and Delivery of Field Records
- 6-110.20 Review of Field Records

6-120 DETERMINATION OF FINAL QUANTITIES

- 6-120.10 General
- 6-120.20 Structures
- 6-120.30 Earthworks
- 6-120.40 Drainage
- 6-120.50 Paving
- 6-120.60 Utilities, Rest Areas and All Other Remaining Items
- 6-120.70 Force Account Work

6-130 FINAL PROCESSES AND FORMS

- 6-130.10 Sequential Steps of the Finals Process
- 6-130.20 Extension of Time
- 6-130.30 Routing Form
- 6-130.40 Comparative Quantities and Costs Title Sheet
- 6-130.50 Comparative Quantities Report
- 6-130.60 Final Estimate Memo to (PDD) Director from Construction Engineer
- 6-130.70 Explanation of Overruns and Underruns Sheet
- 6-130.80 Contractor's Certificate of Claims
- 6-130.90 Claims Against Contractors
- 6-130.100 Assembly of Final Estimate Package for Presentation to the Director of Program Development

6-140 FINAL DISPOSITION OF PROJECT FILES

- 6-140.10 General
- 6-140.20 Daily Reports
- 6-140.30 Written Orders
- 6-140.40 Material and Compaction Reports
- 6-140.50 Invoices, Weight Slips and Computer Sheets
- 6-140.60 Borrow Pit Data
- 6-140.70 Miscellaneous Field Notes

6-140.80	Original Correspondence
6-140.90	Water Pipe and / or Utility Sleeve Diagrams
6-140.100	Field Prints
6-140.110	All Remaining Material
6-140.120	Permanent Bench Mark Information Sheets

6-150 PREPARATION OF RECORD PLANS

6-150.10	General
6-150.20	Preparation of Title Page
6-150.30	Typical Sheet
6-150.40	Quantity Sheets and Summary Sheets
6-150.50	Layout
6-150.60	Structure and Bridge Sheets
6-150.70	Final Disposition of Record Plans

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7-110 INCHES AND FRACTIONS DECIMAL VALUES

7-120 TRENCH EXCAVATION FOR SLOPE PIPES

7-130 UNDERDRAIN CARRIER PIPE TRENCH EXCAVATION

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7-150 AASHTO SOIL TERMINOLOGY

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7-170 REINFORCING STEEL BAR MARKINGS

7-180 REINFORCING STEEL UNIT WEIGHTS

7-190 WELDED WIRE MESH

7-200 BASIC WELD SYMBOLS

7-210 BOARD FOOT MEASURE

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- 8-100.20 Temporary Employee Ratings
- 8-100.30 Consultant Performance Evaluations
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Complete Section Update - 2013

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- 9-100.20 Subcontractors
- 9-100.30 Daily Work Report
- 9-100.40 Adding Equipment, Supervisor and Personnel
- 9-100.50 Change Order
- 9-100.60 SiteManager Materials
- 9-100.70 SiteManager Reports

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10-100 CONSTRUCTION SAFETY POLICY

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- 10-100.20 Personal Protective Equipment
- 10-100.30 Lifting and Material Handling
- 10-100.40 Fall Protection
- 10-100.50 Working Over or Near Water
- 10-100.60 Traffic Control
- 10-100.70 Excavation
- 10-100.80 Blasting

- 10-100.900 Toxic and Hazardous Material
- 10-100.100 Hazardous Spills
- 10-100.110 Erected Structures

10-100 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)

- 10-110.10 General
- 10-110.20 Preconstruction
- 10-110.30 Construction Operations
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- 10-110.50 Violations

10-120 FIRST REPORT OF INJURY

- 10-120.10 General

10-130 TRAFFIC SAFETY ENFORCEMENT WITHIN CONSTRUCTION WORK ZONES

- 10-130.10 General
- 10-130.20 Types of Projects Covered under this Memorandum of Understanding
- 10-130.30 Procedure to Request the State Police/DMV to provide traffic safety within the construction work zone
- 10-130.40 The State Police/DMV will provide the following documentation to the Construction Section
- 10-130.50 U-Turn Authorization Certificate for Limited Access Highways

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10-150 INCIDENT REPORTING/INVESTIGATION

- 10-150.10 General
- 10-150.20 Incidents with Property Damage
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11-110 WASTE, BORROW AND STAGING AREAS

- 11-110.10 Control of Waste, Borrow and Staging Areas
- 11-110.20 Opening Waste, Borrow and Staging Areas
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11-150 STORMWATER REGULATIONS

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SECTION XII

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SECTION XIII

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