

## 2017 CDOT Field Materials Manual Introduction

The purpose of this manual is to provide an official guide to CDOT Field forces for the sampling and testing of materials on construction projects and the subsequent documentation. It is not the intent to publish a complete summary of all sampling and testing methods and procedures. Further relevant information may be found in either the applicable AASHTO or ASTM manuals. Published herein are some select AASHTO Procedures concerning materials testing that may not be readily available to Field personnel.

The Manual is published in dual units using the Standard English units and the International System of Units (SI Modernized Metric).

The testing frequency as shown in the QA Frequency Guide Schedule for Minimum Materials Sampling, Testing, and Inspection is considered to be the minimum necessary to have the degree of control desired. The Sampling and Testing Procedures have in many cases been modified to make them more applicable to Field testing conditions. Further unauthorized modifications should not be attempted. If a valid reason exists, a shortage of tests can be explained and the work accepted. However, improper test procedures cannot be explained nor accepted.

The testing frequency as shown in the IA Frequency Guide Schedule for Evaluation of QA Sampling and Testing is to be established by the Region Materials Engineer.

It is not our intention to discourage efforts to find better or faster methods of testing. Many of the Colorado Procedures are the result of suggestions from field materials personnel. However, before using a procedure other than that listed, it must be approved by the Materials Advisory Committee (MAC) and the FHWA. In addition, the procedure used must be the same as that specified in the project specifications. If this rule is not followed, the acceptance or rejection action cannot be supported and may result in legal rulings against the Division in cases of litigation.

The Frequency Guide Schedule for Minimum Materials Sampling, Testing, and Inspection current at the time of contract advertisement shall apply during the full course of that particular project.

We realize the critical importance of materials and the associated personnel, whether they are Quality Control (QC), Quality Assurance (QA), or Independent Assurance (IA) to any construction project. It is our intent to create a Field Materials Manual (FMM) that always reflects the most current and best procedures, and is as user friendly as possible. Please take the time to review and read this publication, and provide us with the CP Comment Form or the FMM & CDOT Materials Forms Comment / Correction Form at any time.

The use of the current Materials forms as referenced by date in Appendix O is required.



Bill Schiebel  
CDOT Materials Engineer

- NOTE 1:** A centralized location for all CDOT Materials related documents and publications is at:  
<http://www.codot.gov/business/designsupport/materials-and-geotechnical/>
- NOTE 2:** **Materials Advisory Committee (MAC) information:**  
<http://intranet/business/committees/MAC>
- NOTE 3:** General correspondence (letters and envelopes), large packages, bulk mail samples of materials, and nuclear gauges should be addressed to or delivered to:  
Attn: (Individual's Name), CDOT, 4670 North Holly Street, Unit A, Denver, CO 80216-6408
- NOTE 4:** If you have any questions concerning this manual please contact:  
[Editor @ \(303\) 398-6566](mailto:Editor@3033986566).

## 2017 CDOT Field Materials Manual Dedication

**Front Cover:** The photos on the cover of the 2017 CDOT Field Materials Manual are from two unique tunnels. The lower photos are from Region 1 and they are the Veterans Memorial Tunnels (previously the Twin Tunnels) on I 70 east of Idaho Springs. This was primarily a capacity and safety project. The upper photos are from Region 3 and they are of the construction of a tunnel on SH 9 by the Colorado River. The embankment was extended to the structure and soil was placed over the top for vegetation. The final version became a wildlife easement over the highway to ensure roadway safety. Travel there yourself and you might see deer and elk crossing over the traffic.

**Special Thanks to:** Jim Wickland for creating the front cover design. Leslie Kochis for rewriting the new chapter Documentation for SMM / LIMS Projects based on an additional year of actual implementation of the new processes. Jay Goldbaum for writing the new chapter Documentation for Design – Build Projections.

**FMM Documents:** A special thank you is extended to the members and participants of the MAC Meetings and the associated task forces who are constantly striving to improve testing methodology and CDOT specifications so that the roads in Colorado are progressively built better and are safer for the public.

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### Listed Revisions, Additions, and Deletions

**Changes from the 2016 FMM:** Changes of significance within a particular CP or chapter will contain a “- 17” at the end of the title to coincide with this FMM. Changes to specific text from the previous year will have a solid black side-bar in either the left or right applicable margin. The revised Sections &/or Subsections:

- QA Procedures Chapter: significant terminology changes and additions
- Documentation for Non-SMM & Non-DB Chapter: Revision of a note referencing the use of the chapter Documentation for SMM/LIMS or the chapter Documentation for Design-Build.
- Documentation for SMM / LIMS: This is a complete revision of this new 2016 FMM chapter based on the implementation of SiteManager® Materials project experience.
- Documentation for Design - Build QA Program: this is a new chapter
- Special Notice to Contractors: 4.1.A, 4.1.G, pages 7, 9, 10, 11, 14, 15, 18
- OA Schedule and IA Schedule: no black-bars in the margins due to space constraints
- CP 10: acronym changes, mostly QC to PC
- CP 11: pages 1, 39, 42
- CP 12A: 1.1, 9, 10.1, 10.2, 11, 11.1, 12, 12.1
- CP 12B: 1.1, 3.1, 10
- CP 13: page 2 acronym changes
- CP 15: page 1 acronym changes
- CP 17: acronym changes
- CP 55: Section 15
- CP 59: Subsection 3.3
- CP 74: Replaced in total.
- CP 78: (Replaced in total on 1-01-2016) Subsections 1.1, 6.4, 6.5, 7.4.1, 8, 9.2, 9.3
- Chapters: Select example forms have been replaced with new forms with new information.
- Chapter 400: Revision of Table 400-2 and Table 400-4, with the deletion of Table 400-3.
- Chapter 600: Replaced example of Form #1188 on page 15.
- JSA: 1 test addition
- OA Software: name change only. The chapter exists only until SMM / LIMS creates all of these reports.
- Appendix: Appendix C (Statewide Roster) always has changes

**2017 Field Materials Manual (FMM)**  
**Colorado Procedure (CP) Comment Form**

Mail or Fax to: Colorado Department of Transportation  
Materials & Geotechnical Branch  
Documentation Unit  
4670 North Holly Street, Unit A  
Denver, Colorado 80216-6408  
FAX: (303) 398-6504

Name \_\_\_\_\_ Phone No. (\_\_\_\_\_) \_\_\_\_\_ Date \_\_\_\_\_  
Company or CDOT Office \_\_\_\_\_

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Thank you for your help in making the CDOT Field Materials Manual a better publication by notifying us of errors or points of confusion that require clarity.

