

## Grading and Base Inspector Certification Class Agenda 2023-2024

### Instructors

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### Certification course description

This advanced course focuses on the knowledge and skills needed to serve as an Inspector on grading and base projects, working to ensure these materials meet roadway and bridge construction quality requirements. Topics include Inspector roles and responsibilities, subgrade soils and soils identification, excavation and embankment construction, base construction, cold mix asphalt, pavement reclamation, turf establishment, geosynthetic applications, and compliance with labor laws. Instruction includes lecture, demonstration, discussion, and practice activities. Quizzes, course resources, and content reviews are included to help participants prepare for the written exam. [Note: Depending on participants' prior knowledge and experience, they may want to do additional practice and review before taking the class and/or the exam.]

### Timing, attendance, and breaks

This is a three day course with class from 8:00 a.m. to 4:30 p.m. each day. Attendance will be taken in the morning and afternoon. There will be short breaks throughout the day and a 1 hour lunch break around 12:00 noon.

### Deadlines (see the course webpage for more information):

The **written exam** will open for you at the end of the class. You must complete the exam within one week after it is open for you, meaning the same day the following week.

View the **Technical Certification Program website** at [mndot.gov/technical-certification](http://mndot.gov/technical-certification) for information about: our program and certification process, class registration, course materials and program documents, construction resources, exams, Technical Certification Card, and help and contacts.

### Class Agenda

#### Day 1

##### Chapter 1 - Administrative & Resources

###### Administrative

- a. Instructor/Student Self Introductions
- b. Course Outline and Purpose
- c. Administrative Details and Available Resources
- d. Grading and Base Website

###### Resources

## **Chapter 2 - Inspectors Duties & Responsibilities**

### **Inspectors Duties & Responsibilities**

- a. General
- b. Preliminary Work

### **Grading Construction**

- a. Preparation of Embankment Areas
- b. Excavation Areas
- c. Excavation Below Grade
- d. Spreading and Compacting
- e. Control Testing for Embankment Construction
- f. Measurement

### **Grading Inspection Checklist**

#### **Base Construction**

**Break**

## **Chapter 3 - MnDOT Standard Specification Division I - Administrative Specifications Specifications**

### **Authority and Duties**

### **Administrative Spec Review**

**Lunch**

### **Grading and Base Unit Presentation**

## **Chapter 4 - MnDOT Standard Specifications Division II - Construction Specifications**

### **Summary of Changes in the 2018/2020 Spec Book**

#### **Construction Specifications**

- a. 2031 Field Office and Laboratory
- b. 2101 Clearing and Grubbing
- c. 2104 Removing Pavement and Miscellaneous Structures
- d. 2106 Excavation and Embankment – Compacted Volume Method

### **Day 2**

## **Chapter 4 - MnDOT Standard Specifications Division II - Construction Specifications**

- a. 2111 Test Rolling
- b. 2112 Subgrade Preparation
- c. 2123 Equipment Rental
- d. Aggregate Surfacing
- e. 2211 Aggregate Base
- f. 2221 Shoulder Base Aggregate
- g. 2130 Application of Water

**Break**

## **Chapter 5 - MnDOT Standard Specifications Division III - Materials Specifications**

### **Summary of Changes in the 2018/2020 Spec Book**

#### **Materials Specifications**

- a. 3136 Drainable Bases
- b. 3138 Aggregate for Surface and Base Courses
- c. 3146 Binder Soil
- d. 3149 Granular Material

**Lunch**

## **Chapter 6 – Embankment Soils**

**Soil Classification Introduction**

**Pedological Classification**

**Soil Profile**

**Soil Classification by Texture**

- a. Definition of Texture
- b. Soil Components
- c. Laboratory Determination of Texture
- d. Field Determination of Texture

**Break**

**Secondary Classifiers**

**Engineering Properties of Soil**

**Soils Classification Exercise**

## **Chapter 7 - Geotextiles**

**Geotextiles**

**Construction with Geotextiles**

**Day 3**

## **Chapter 8 - Grading & Base Website, Reports, & Materials Control Schedule**

**Grading and Base Website**

**Materials Control Schedule**

**Grading & Base Report**

**Compaction**

**Soil Compaction Equipment**

**Frost Susceptibility**

**History of Embankment Construction**

**Break**

## **Chapter 9 - Pavement Reclamation Processes**

**General Process Description**

Hot In-Place Recycling (HIR)

Cold In-Place Recycling (CIR)

Full Depth Reclamation (FDR)

Stabilized Full Depth Reclamation (SFDR)

**Stabilizing Additives**

**Preliminary Work**

**Executing the Work**

**Pavement Reclamation Checklists**

**Lunch**

## **Chapter 10 - Culvert Installations & Special Situations**

**Introduction**

**Lightweight Fill**

**Construction Techniques for Swamps**

**Culvert Treatments**

## **Chapter 11 – Materials Certification Process**

**Project Closeout Process**

**Final Exam**