

S T A T E

O F

T E N N E S S E E

(Rev. 5-18-15)
(Rev. 11-16-15)
(Rev. 12-2-16)
(Rev. 5-15-17)
(Rev. 5-14-18)
(Rev. 10-8-18)
(Rev. 5-13-19)
(Rev. 12-30-19)

January 1, 2015

Supplemental Specifications - Section 200

of the

Standard Specifications for Road and Bridge Construction

January 1, 2015

Subsection 201.03 Clearing and Grubbing, A. General (pg. 118-119), 5-15-17; remove the third paragraph:

Subsection 201.03 Clearing and Grubbing, C. Clearing and Grubbing Activities, 5. Borrow Pit Areas (pg. 120), 5-15-17; remove the last sentence in the last paragraph:

“In areas approved as borrow pits by the Engineer, clear and grub all trees, stumps, brush, and heavy vegetation.

In areas designated for obtaining construction material other than borrow, clear and grub trees, stumps, brush, and vegetation, and strip overburden lying above the material to be obtained.

Complete this work prior to removing borrow or construction materials.”

Subsection 202.03 General (pg. 125), 5-15-17; remove the last sentence of the 2nd paragraph:

“Remove materials designated for salvage in readily transportable pieces, and store the removed pieces at specified locations within the Project limits. Replace with new material, at no additional cost to the Department, those materials designated for salvage that are damaged during removal, transport, or storage operations. Take ownership of material not designated for the Department’s use, and dispose of such material beyond view from the Project limits.”

Subsection 203.02 B. Borrow Excavation (pg. 134), 5-15-17; remove the last sentence of the 1st paragraph:

“Borrow Excavation consists of material required for the construction of embankments or other portions of the work.”

Subsection 203.02 B.3 (pg. 135), 5-13-19; **Borrow Excavation (Graded Solid Rock)**; Revise last paragraph:

Process the material using an acceptable method that produces the required gradation. The material shall meet the quality requirements of 903.25. Obtain the Engineer’s approval before using the material.

Subsection 203.04 (pg. 139), 5-15-17; add 5. to the list of provisions:

- “1. The cost of this material is more economical than borrow excavation.
2. The material is available within the adjusted balance where the shortage exists or the material may be hauled outside the limits of adjusted balance if the cost of the material is more economical than borrow after considering the additional cost of overhaul.
3. The material can be excavated without blasting.
4. There is a minimum of 20 feet between the top of the existing slope and the top of the new slope and a minimum of 5 feet between the top of the new slope and right-of-way line or Control Access fence. The 20-foot minimum will not apply when the existing slope is 4:1 or flatter or to overlapping or near overlapping slopes in medians or between parallel roads or ramps. The Engineer may reduce the 20-foot minimum at the Contractor’s written request.
5. The material has not been designated as potentially acid producing material.”

Subsection 203.04 (pg. 139-140), 5-15-17; add the 2nd paragraph as follows, revise the 5th paragraph to remove the reference to the *Procedures for Providing Offsite Waste and Borrow on TDOT Construction Projects*:

“E. Borrow Areas

Notify the Engineer before opening any borrow area to allow adequate time for the Engineer to take cross-section elevations and measurements of the ground surface after being stripped, and to test the borrow material before use. Obtain approval for the borrow area according to the *Procedures for Providing Offsite Waste and Borrow on TDOT Construction Projects*. Allow at least 14 days for

testing borrow materials or other material from roadside pits proposed for construction purposes.

Borrow materials shall not contain acid producing materials. Representative samples of the proposed borrow material shall be tested for pH (EPA600/2-78-054 or ASTM D4239). Material with a pH less than 5 is considered acid producing and will not be accepted.

Unless otherwise allowed, do not place borrow material until after the roadway excavation material has been placed in the embankments. If the Contractor places more borrow than is required and thereby causes a waste of excavation, the Department will deduct the amount of such waste from the measured borrow volume. Do not excavate beyond the dimensions and elevations established.

The Contractor may remove highway fencing to obtain borrow materials. Replace the fencing removed with new fence at no cost to the Department, and assume responsibility for confining livestock, as necessary.

Excavate borrow pits to be self-draining where possible and practicable, and of a shape that can be easily cross-sectioned.

After completing excavation operations, provide the area with a neat appearance. Cover all self-draining borrow areas with topsoil and stabilize. Provide and place topsoil and seeding (with mulch) as specified in **203.06** and **801**, respectively.

For borrow pits 1 acre or larger in size that are not self-draining, refer to Sections 53-801 through 53-809 of the TCA. Full information regarding the requirements to be complied with and the necessary permits that the property owner must secure for the construction of a pond, lake, borrow pits, etc., 1 acre or larger that is not constructed to drain, will be supplied upon application to the TDEC.”

Subsection 203.07 (pg. 141-142), 5-15-17; replace the last paragraph:

“Ensure the offsite disposal grading plan is properly designed (including but not limited to slope stability and fill placement recommendations) regulated, and implemented.”

Subsection 204.06 – 2 (pg.152-154), 5-14-18; replace Table 204.06-3 with the following:

Table 204.06-3: Specification Limits for EFF

Property	Specification Limit
Air content (ASTM D6023)	Maximum 30% ⁽¹⁾
Load Application (ASTM D6024)	24 hours maximum in any condition
Consistency	15 inches minimum as tested per <u>204.06.B.1</u>
Compressive strength (ASTM D4832) ⁽²⁾	30 psi minimum at 28 days 100 psi maximum at 28 days

⁽¹⁾ When using air entrained mixture design
⁽²⁾ ASTM D4832 4 x 8 inch cylinder molds may be used. The preferred capping method to be used is wetsuit neoprene restrained in rigid retainers.

Subsection 204.06 – 2 (pg.152-154), 5-18-15; replace Tables 204.06 with the following:

1. General Use Flowable Fill

Table 204.06-2: Specification Limits for General Use Flowable Fill

Property	Specification Limit
Load Application (ASTM D6024)	24 hours maximum in any condition
Consistency	15 inches minimum tested as specified in this 204.06.B.1

2. Excavatable Flowable Fill (EFF)

Table 204.06-3: Specification Limits for EFF

Property	Specification Limit
Air content (ASTM D6023)	Maximum 30% ⁽¹⁾
Load Application (ASTM D6024)	24 hours maximum in any condition
Consistency	15 inches minimum as tested per 204.06.B.1
Compressive strength (ASTM D4832) ⁽²⁾	30 psi minimum at 28 days

⁽¹⁾ When using air entrained mixture design

⁽²⁾ ASTM D4832 4 x 8 inch cylinder molds may be used. The preferred capping method to be used is wetsuit neoprene restrained in rigid retainers.

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3. Early Strength Flowable Fill (ESFF)

Table 204.06-4: Specification Limits for ESFF

Property	Specification Limit
Air content (ASTM D6023)	Maximum 30% ⁽¹⁾
Load Application (ASTM D6024)	6 hours maximum in any condition
Consistency	15 inches minimum as tested per 204.06.B.1
Compressive strength (ASTM D4832) ⁽²⁾	30 psi minimum at 24 hours

⁽¹⁾ When using air entrained mixture design

⁽²⁾ ASTM D4832 4 x 8 inch cylinder molds may be used. The preferred capping method to be used is wetsuit neoprene restrained in rigid retainers.

Subsection 204.06 B.1 (pg. 151-153), 12-30-19; **General Use Flowable Fill**; Revise 1st paragraph & Revise Tables 204.06-2, 204.06-3, & 204.06-4:

- 1. General Use Flowable Fill.** When not otherwise shown on the Plans, or specified in the Contract, provide general use flowable fill proportioned to meet the limits specified in Tables 204.06-1 and 204.06-2. **Alternate proportioning may be used if the trial batch proves satisfactory results.**

Table 204.06-2: Specification Limits for General Use Flowable Fill

Property	Specification Limit
Load Application (ASTM D6024)	24 hours maximum in any condition
Consistency	15 inches minimum tested as specified in this <u>204.06.B.1</u>

Table 204.06-3: Specification Limits for EFF

Property	Specification Limit
Air content (ASTM D6023)	Maximum 30% ⁽¹⁾
Load Application (ASTM D6024)	24 hours maximum in any condition
Consistency	15 inches minimum as tested per <u>204.06.B.1</u>
Compressive strength (ASTM D4832) ⁽²⁾	30 psi minimum at 28 days 100 psi maximum of 28 days

⁽¹⁾ When using air entrained mixture design

⁽²⁾ ASTM D4832 4 x 8 inch cylinder molds may be used. The preferred capping method to be used is wetsuit neoprene restrained in rigid retainers.

Table 204.06-4: Specification Limits for ESFF

Property	Specification Limit
Air content (ASTM D6023)	Maximum 30% ⁽¹⁾
Load Application (ASTM D6024)	6 hours maximum in any condition
Consistency	15 inches minimum as tested per <u>204.06.B.1</u>
Compressive strength (ASTM D4832) ⁽²⁾	30 psi minimum at 24 hours

⁽¹⁾ When using air entrained mixture design

⁽²⁾ ASTM D4832 4 x 8 inch cylinder molds may be used. The preferred capping method to be used is wetsuit neoprene restrained in rigid retainers.

Subsection 204.06 (pages. 153-154) 11-16-15; Excavatable Flowable Fill - delete the first sentence of the first full paragraph after Table 204.06-3 on page 153, Early Strength Flowable Fill – delete the first sentence of the second paragraph below Table 204.06-4 on page 154

Subsection 204.11 (pg. 162), 12-2-16; Revise Section B. Pipe Culverts as follows:

“B. Pipe Culverts

1. Placing Backfill Material. After the bedding has been prepared and the pipe installed, backfill the trench with bedding material, fine compactable soil selected from excavation or borrow, or both, as shown on the Plans. Before backfilling concrete pipe, allow the joints to cure as specified in **607.07**. Place the material along each side of the pipe in layers not more than 8 inches in loose depth. Moisten or dry, if necessary, each layer to near optimum moisture content and thoroughly compact with mechanical tampers. Thoroughly compact the material under the haunches of the pipe and ensure that the backfill material is in intimate contact with the side of the pipe. Uniformly place and raise backfill on both sides of the pipe for the full required length. Except as may be required for the imperfect trench method, place backfill material for the full depth of the trench.

2. Placing Embankment Material. When the top of the pipe is above the top of the trench, place and compact embankment material in layers of not more than 8 inches in loose depth for a width on each side of the pipe equal to at least twice the horizontal inside diameter of the pipe or 12 feet, whichever is less. The embankment on each side of the pipe, for a distance equal to the horizontal inside diameter of the pipe, shall be of the same material and compacted in the same manner as specified for backfill in **204.11.B.1**. For the remainder of the fill material, use soil that can be readily compacted and that contains no frozen lumps, chunks, or plastic clay, stones that would be retained on a 3-inch sieve, or other objectionable material. Compact the material as required for backfill or by rolling as specified in the applicable requirements of **204**. Place the embankment material evenly on both sides of the pipe for the full width of the roadbed up to an elevation a minimum of 1 foot above the top of the pipe. Above this elevation, and also above the top of a backfilled trench that is 1 foot or more above the top of the pipe, place embankment as specified in the applicable requirements of **205**, except for those requirements related to the imperfect trench method.

3. Plastic Pipe. For plastic pipe, work structural backfill into the haunch area and compact the materials by hand after placing the pipe. Special compaction means may be necessary in the haunch area. Place structural backfill in layers of not more than 8 inches in loose lift thickness and bring up evenly and simultaneously on both sides of the pipe to an elevation not less than 1 foot above the pipe. Use a vibratory plate to achieve a minimum compaction level of 90% Standard Proctor Density according to AASHTO T 99. Do not use hydrohammer type compactors over the pipe. Obtain the Engineer’s approval of all compaction equipment.”

Subsection 205.04 (pg. 175) 10-7-19, Formation of Embankments, add the following sentence to the 2nd paragraph on the original page:

“The Department inspector conducting the density tests shall be a certified Nuclear Gauge Technician.”

Subsection 205.04 (pg. 177-178), 5-13-19; **Formation of Embankments**; Revise 1st paragraph after **E**:

When the Plans require Solid Rock Fill, the material shall consist of sound, non-degradable rock (granite, gneiss, limestone, or other approved material). Material shall meet the quality requirements in 903.25. Do not use plastic soil or shale material. Place Solid Rock Fill as shown on the Plans or as directed by the Engineer.

Subsection 206.03 (pg. 180-181), 5-15-17; remove the reference to the *Procedures for Providing Offsite Waste and Borrow on TDOT Construction Projects* in the next to last sentence of the first paragraph:

“Perform final dressing by hand work and machines to produce a uniform satisfactory finish to all parts of the roadway and other components of the Project. Shape the roadbed, shoulders, ditches, and slopes to within reasonably close conformity to the specified lines, grades, and cross-sections. Dress spoil banks, borrow areas, waste areas, and similar areas. Clear rock cuts of all loose fragments, and leave in a neat, safe, and workmanlike condition.”

Subsection 209.01 (pg.190), 5-15-17; revise the 1st sentence of the 2nd paragraph:

“Implement erosion prevention and sediment control (EPSC) measures during all phases of construction. Ensure that all EPSC measures shown on the Stormwater Pollution Prevention Plan (SWPPP) are in place before beginning soil disturbing activities.”