



Iowa Department of Transportation

SPECIAL PROVISIONS FOR MSE WALL GRANULAR BACKFILL

Pottawattamie County
IM-NHS-29-3(97)48--03-78

Effective Date
April 15, 2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120165.01 DESCRIPTION.

A. Scope.

The work shall consist of installing the Mechanically Stabilized Earth (MSE) Retaining Wall designated on the project drawings with granular backfill as specified herein. Section 2432 of the Standard Specifications shall be used with the exception of the backfill material.

B. Submittals.

1. Submit results of the gradation sieve analyses for the granular backfill material for the MSE walls 5 days prior to the start of the wall construction to the Engineer. The number of tests and required certification shall be in accordance with Section 2432 of the Standard Specifications.
2. Submit results of bulk density tests performed on the granular backfill material for the MSE wall 5 days prior to the start of the wall construction to the Engineer.

120165.02 MATERIALS.

- A. Granular backfill material used as MSE Wall Backfill shall be reasonably free from organic material, shale or other poor durability particles and otherwise deleterious materials. The backfill shall conform to the gradation requirements in Table 120165.02-1.

Table 120165.02-1: Gradation Requirements

Sieve Size (in.)	Percent Passing
4	100
3.5	90-100
2.5	25-60
1.5	0-15
0.75	0-5

- B. Granular backfill material used as MSE Wall Backfill shall have a unit weight of 105 pounds per cubic foot +/- 5 pounds per cubic foot.

120165.03 CONSTRUCTION.

A. Granular Backfill Placement.

1. Place backfill material in a manner to closely follow the erection of each lift of panels or wire mesh facing. At each level for earth reinforcing, roughly level the backfill material before placing and connecting reinforcement. Place reinforcing normal to the face of the wall.
2. At the end of each day's operations, shape the last level of backfill material so as to permit runoff of rainwater away from the wall face.
3. Consolidate backfill using vibrator, plate tamper, or other compaction equipment. Place backfill material in the reinforced zone as shown in the contract documents in maximum 8 inch lifts. Consolidate the backfill material with vibrator, plate tamper, or other equipment without disturbing or distorting earth reinforcing and panels and in accordance with the MSE wall vendor requirements. Closely follow panel erection with placement of fill lifts. No tests will be required for compaction of granular backfill.

B. Quality Control.

Perform a gradation sieve analysis of the granular backfill as specified in Article 120165.01, C and for every change in source and/or type of material. Perform bulk density testing for the material to ensure specified unit weight is met. All required testing will be completed to the satisfaction of the Engineer at no additional cost to the Iowa DOT. No tests will be required for compaction of granular backfill.

120165.04 METHOD OF MEASUREMENT.

The quantity of Granular Backfill material, that is placed in the reinforced earth zone; identified as an MSE wall design requirement in the contract documents for any core-out or other remedial/ground improvement location; or placed in the temporary excavation zone behind the reinforced earth zone as shown in the contract documents, will be measured in cubic yards.

120165.05 BASIS OF PAYMENT.

- A. For Contractor furnished Granular Backfill material for the reinforced earth zone; any core-outs or other remedial/ground improvement locations; and placed in the temporary excavation zone behind the reinforced earth zone as shown in the contract documents, the Contractor will be paid for the quantity of material furnished, hauled, actually placed, and compacted for the contract unit price cubic yard up to the contract quantity.
- B. If the slope shown for the temporary excavation zone in the contract documents is not adequate for safety, provide written notification to the Engineer, including a copy of a slope stability analysis, and identification of the additional quantity of granular backfill material that will be needed, before the work begins. The slope stability analysis is to be done by a Professional Engineer licensed in the State of Iowa, at no additional cost to Iowa DOT. If approved by the Engineer, the additional quantity for Granular backfill material will be adjusted according to Article 1109.03, A.