

300 BASES

ITEM 310 – MODIFIED BACKFILL

310.01 Description

310.02 Materials

310.03 Construction Methods

310.04 Method of Measurement

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310.01 Description. This work shall consist of furnishing, placing and compacting *the modified backfill* including furnishing and incorporating water required for compaction in reasonably close conformity with the lines, grade, and cross-sections shown on the plans or established by the Engineer.

310.02 Materials. Materials furnished under this item shall be durable gravel, sand, or crushed stone. When testing an aggregate proposed for use under this item and it is a type such that the major portion of the unsound material acquires a mud-like condition when tested in accordance with AASHTO T 104, the soundness loss shall not exceed 5 percent. Gravel, sand, and crushed stone shall meet the following gradation at the time of incorporation into the work:

Total Passing – Percent

Sieve	Grading
2 1/2 inch (63.5 mm)	100
1 inch (25 mm)	90 - 100
No. 4 (475 mm)	70 - 90
No. 16 (1.18 m)	30 - 45
No. 40 (425µm)	20 - 40
No. 200 (75µm)	5 - 15

Broken salvaged road metal may be used provided it will all pass a 3 inch (75 mm) square sieve and not more than 15 percent will pass a No. 200 (75µm) sieve.

The fraction of these materials passing a No. 40 sieve (425 µm) shall have a liquid limit not greater than 30 and a plasticity index not greater than 6.

Material containing free water shall not be placed upon the subgrade.

Where materials from an untested source are furnished, the Contractor shall submit to the Engineer at least 10 days in advance of delivery of such material to the work, a report from an accredited testing laboratory showing test data which show that the source is capable of furnishing material meeting the requirements of these specifications, in sufficient quantity for the work and showing the location of the source.

310.03 Construction Methods. The *modified backfill* material shall be spread upon the subgrade after the prescribed subgrade and subbase drainage has been placed except that for Portland cement concrete pavements, shallow pipe underdrains need not be placed prior to placing *modified backfill material*, providing adequate surface drainage of the subgrade is maintained during construction. The material shall be spread with approved spreaders capable of spreading the materials to the requirements for smoothness and crown.

The *modified backfill material* shall be placed in layers not to exceed 6 inches (152 mm) compacted depth except that for variable *modified backfill material* used under concrete pavement or in the shoulder adjacent to concrete pavement, the material may be placed in single course thickness of not more than 8 inches (203 mm) compacted depth. The moisture content shall be determined by the Engineer to obtain the desired compaction. *Modified backfill* material which does not contain sufficient moisture to compact in accordance with this section shall be sprinkled with water as directed by the Engineer. The water shall not be applied in a manner that will soften the subgrade. The cost of all work connected with the water operation shall be included in the price bid for Item 310, *Modified Backfill*.

At the beginning of the work the Contractor shall build a test section for the purpose of the Engineer determining density requirements for the material to be placed. With the moisture content of the material near optimum, the compaction of the test section shall be continued with approved compaction equipment, consisting of roller alone or vibratory equipment and rollers, until there is no appreciable increase in density as determined by test. Approved compaction equipment shall consist of rollers alone or vibratory equipment and rollers. Vibratory equipment alone may be used only where *modified backfill* material is of such a nature that it will not support rollers. For the remainder of the work the *modified backfill* course shall be compacted until the density is at least 98 percent of the weight in the test section. During the construction of the project, if there is an appreciable change in grading of the material or a change of source of material, a new test section shall be built in order to establish a new weight for the density requirement.

Compaction of the *modified backfill* course shall immediately follow the spreading operation.

The finished surface of this course shall have sufficient stability to support loaded construction equipment used in construction of this and the subsequent course without rutting or deflection in excess of the surface tolerance permitted herein. When material falling within a grading permitted by this specification is used and surface stability cannot be obtained, a sufficient quantity of crushed angular material shall be added to secure the stated stability.

The finished surface for the *modified backfill* shall conform to the plan requirements within the tolerances set forth under Section 203.06.

Any irregularities or depressions that develop in the finished surface of the *modified backfill* under rolling shall be corrected by loosening the surface and adding or removing material and recompacting until the surface presents a smooth regular appearance.

310.04 Method of Measurement. The quantity measured shall be the number of cubic yards (cubic meters), computed from plan lines, of approved *modified backfill* material compacted in place.

310.05 Basis of Payment. Payments for accepted quantities, complete in place, will be made at the contract price for:

Item	Unit	Description
310	Cubic Yard (Cubic Meter)	<i>Modified Backfill</i>