

900 SEWERAGE WORK

ITEM 912 - COMPACTED GRANULAR MATERIAL

- 912.01 Description**
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912.01 Description. This work shall consist of furnishing, placing and compacting granular material for bedding, backfill or other use where shown on the plans, specified or ordered by the Engineer, including the disposal of excess material.

912.02 Materials. Materials shall be as follows:

Granular material shall consist of natural or synthetic mineral aggregate such as broken or crushed rock, gravel, slag, sand or cinders which can be readily incorporated in an 8 inch (203 mm) layer, conforming to the gradation specified in Section 304.02.

Controlled density fill mixes may be used as an alternate to compacted granular material. Such mixes shall be subject to the requirements of Item 636.

912.03 Compaction Requirements. The following compaction requirements shall apply to granular materials and to native backfill materials when such materials are to be compacted Item 911.

Max. Lab. Dry Wt. Lbs./cu. Ft. (kg/m³)	Min. Comp. Requirements % Lab. Max.
90-104.9 (1442-1680)	102%
105-119.9 (1682-1920)	100%
120 and more (1922)	98%

Materials having a maximum laboratory dry weight of less than 90 lbs./cu. ft. (1442 kg/m³) shall be considered unsuitable for compaction. Soil, granular material, or other approved material shall be spread in successive level layers of a depth to allow compaction to the specified density and of not more than 8 inches (203 mm) in thickness (loose measurement), unless otherwise specified and/or authorized in writing by the Engineer.

The Contractor shall cooperate to the fullest extent to accommodate compaction tests and no extra payment will be allowed for delay or time lost due to verification of compaction required.

912.04 Method of Measurement. The number of cubic yards (cubic meters) of compacted granular material will be computed on the following basis:

The number of cubic yards (cubic meters) is equal to W times L times D divided by 27 (0) where W is the specified trench width in feet (meters), L is the length of trench in feet (meters) specified or ordered to be backfilled with compacted granular material and D is the distance in feet (meters) from 1) the top of the bedding or encasement on 6 through 27 inch (152-686 mm) pipe or 2) the outside top of the barrel of the pipe or encasement on 30 inch (762 mm) and larger pipe to a point 1 foot (0.3 m) below the existing ground surface. These definitions for the D measurement may be varied as indicated on the plans or as specified or ordered by the Engineer. The length of trench will be measured along the centerline of the sewer in place without deduction for manholes or other structures built in the open trench. No extra payment will be made for compacted backfill in the extra excavation widths necessary at manholes and other structures along the centerline of the work. At existing manholes or structures, where the work connects, the measurement for this item will be made from the centerline of the existing manhole or structure. At terminal manholes or structures, being constructed as part of the work, the measurement for this item will be through the manhole or structure to a point 1 foot (0.3 m) beyond the manhole or structure base. Where manholes or structures are built over existing sewers, as part of the work, compacted backfill will be measured along the centerline of the sewer between two points 1 foot (0.3 m) beyond and on either side of the manhole or structure base. Where sewer trenches intersect, at different elevations or at a manhole or structure being constructed as part of the work, a length equal to the specified width of trench for the lesser diameter pipe shall be deducted from the above measurement for the length of the intersection.

The Contractor will receive no compensation for:

1. Work necessitated or material placed outside of the payment limits defined above, within the length of trench specified or ordered, due to unauthorized excavation.
2. Compacted granular material for bedding, backing or other use which is paid for under 901 as a part of the price per ft. (meter) of pipe.

912.05 Basis of Payment. The computed number of cubic yards (cubic meters) of granular backfill measured for payment will be paid for at the contract unit price per cubic yard (cubic meter).

Payment will be made under:

Item	Unit	Description
912	Cubic Yard (Cubic Meter)	Compacted Granular Material