

SECTION 2.09 SUBGRADE

2.09.01--Description: The area of the roadbed upon which the pavement structure and paved shoulders are placed, including the shoulder base courses and subbase, shall be known as the subgrade. This is the plane coincident with the bottom of the subbase and the edge of pavement, as shown on the plans and cross-sections or as ordered by the Engineer. The work of formation of subgrade shall be performed at this plane.

Where precast concrete barrier curb is to be permanently installed, the work of formation of subgrade shall be performed on the area under the precast concrete barrier curb.

Where shoulders are to be reconstructed and the existing subbase is to remain, the work of formation of subgrade shall be performed at the plane coincident with the surface of the existing subbase.

After all grading for the roadbed has been substantially completed and all drains laid, the subgrade shall be brought to the lines, grades and cross-sections shown on the plans.

When no item for "Clearing and Grubbing" and no grading items appear in the proposal, the work of clearing waterways, ditches, drainage structures and culverts, as described in Article 2.01.03, shall be performed as part of this work.

2.09.03--Construction Methods : All soft and yielding material and other portions of the subgrade which will not compact readily shall be removed and replaced with suitable material.

In cut areas, the surface shall be uniformly compacted by use of equipment specifically manufactured for that purpose. Rollers shall deliver a ground pressure of not less than 52.5 N/mm of contact width and have a mass of not less than 9100 kg. Vibratory units shall have a static mass of not less than 3650 kg. The amount of compactive effort shall be as directed by the Engineer, but in no case shall be less than four (4) complete passes of the compacting equipment being used.

The dry density after compaction shall be as specified in Subarticle 2.02.03-6.

Where more than one compacting unit is to be used, that unit which exerts the larger compactive effort shall make the initial passes. Any portion of the subgrade not accessible to larger compacting units shall be compacted, as directed by the Engineer, to a degree equal to that obtained on the other portions of the subgrade with equipment and by methods appropriate to the size of the inaccessible area.

After compacting, the subgrade shall be true to required line and grade. There will be no direct payment for any materials required to bring the subgrade to the line, grade and cross-section shown on the plans.

The Contractor shall protect the completed subgrade from damage by exercising such precautions as the Engineer deems necessary. The subgrade surface shall be maintained in such condition as to permit proper drainage. It shall be checked and approved by the Engineer prior to placing any pavement structure and shoulders thereon.

2.09.04--Method of Measurement: Payment lines for formation of subgrade shall be coincident with the outside edges of the pavement or where paved shoulders are constructed, with the outside edges of the shoulder. Where precast concrete barrier curb is permanently installed, payment shall include the area under the precast concrete barrier curb. Payment for formation of subgrade will be allowed when such work is done in providing connections to public roads. Payment for formation of subgrade will not be allowed for work at private drives, in areas where traffic bound gravel is constructed or in areas where existing pavement is used as a base for resurfacing with bituminous concrete.

The area computed for payment shall not include the area of any bridge floor where the type of construction is such as to eliminate any necessity for the work described herein.

2.09.05--Basis of Payment: Formation and protection of subgrade, including all work provided for hereinbefore, will be paid for at the contract unit price per square meter for "Formation of Subgrade," which price shall include all materials, equipment, tools and labor necessary thereto.

There shall be no specific payment for the work of scarifying existing stone or gravel roads as described in Article 2.02.03, but the cost of such work shall be considered included in the payment for the item providing for the formation of subgrade.

When no item for "Formation of Subgrade" appears in the proposal, the cost of this work shall be included in the contract unit price for the pavement item or items involved.

Pay Item	Pay Unit
Formation of Subgrade	m ²