

SECTION 304 -- EARTH SHOULDER CONSTRUCTION

304.01 -- Description

The Contractor shall complete the following requirements under the "Earth Shoulder Construction" bid item:

1. Furnish and excavate the embankment material.
2. Haul, compact, blade, and shape the material to conform to the plan's typical cross sections and compaction requirements.
3. Construct embankments as necessary to adjust the grade line of intersecting roads and driveways to meet the elevation of the new shoulder surfaces.

304.02 -- Material Requirements

1. Only when the Department provides the material will the plans indicate where to obtain shoulder construction materials.
2. Soils shall meet the requirements prescribed in Subsection 205.02.

304.03 -- Construction Methods

1. The Contractor shall construct earth shoulders in accordance with the requirements of Sections 201 and 205.
2.
 - a. When the final elevation of the traveled way is different from the elevation of intersecting roads and driveways, the Contractor shall adjust the grade line of intersecting roads and driveways to meet the elevation of the new shoulder surfaces. The existing grade line will be adjusted 2 m horizontally for each 35 mm of vertical change in the surfacing elevation.
 - b. During shoulder construction, the embankments shall be adequately drained to prevent damage to the pavement structure.
3. Piles or windrows of shoulder materials shall not be placed along the traveled way more than 15 days ahead of their intended use.
4.
 - a.
 - (1) The Contractor shall construct shoulders to the typical cross sections shown in the plans.
 - (2) The shoulder shall be tight bladed using a motorgrader to remove any vegetation. The underlying subgrade shall be scarified to a depth of 150 mm and then compacted with at least two complete coverages over the area with an approved roller.
 - (3) Shoulder construction shall match the existing width and fill slope or plan section widths, whichever is widest.

b. Earth Shoulders (Asphaltic Concrete Surfacing):

(1) (i) The latest the Contractor shall begin "Earth Shoulder Construction" is the fifth day of placement of the top layer of asphalt pavement. The Engineer may suspend the Contractor's asphalt placement operation if shoulder construction is not started within this time.

(ii) Should the Contractor discontinue asphaltic concrete placement, shoulder construction shall begin by the third calendar day after the Contractor stopped asphalt placement and shall complete the shoulder work in the areas paved within 7 days.

(iii) Shoulder work will not be considered to have started until soils are placed, graded, and compacted for at least 500 m.

(iv) After the entire top layer of asphalt is placed, the Contractor has the time shown in Table 304.01 below to complete the shoulders:

Table 304.01

Time Allowed to Complete Shoulders	
Length of Pavement (kilometers) <u>(Entire Project)</u>	Maximum Working Days Allowed <u>To Complete Shoulder</u>
0 to 5.00	5
More than 5.00 to 6.50	6
More than 6.50 to 8.00	7
More than 8.00 to 9.50	8
More than 9.50 to 11.00	9
More than 11.00	10

(2) (i) Liquidated damages in the amount of \$500 per calendar day will be assessed on the fourth day after the Contractor discontinues asphalt placement if shoulder construction has not been started. Liquidated damages will continue to be assessed until the Contractor starts shoulder construction. The Engineer may authorize weather and soil condition exclusions.

(ii) Failure to complete earth shoulders within the prescribed working day time limit shown in Paragraphs 4.b.(1)(ii) and 4.b.(1)(iv) of this Subsection shall cause the assessment of \$500 per calendar day liquidated damages until the earth shoulders are completed. "Completion of the Earth Shoulders" shall be defined as the time when all of the required material has been placed, compacted, and the top surface shaped to the finish grade along the main traveled way.

(iii) The Engineer will exclude shoulder requirements for asphalt placed in urban areas, intersections and driveways, and minor isolated areas (less than 500 m²) in the determination of the maximum number of working days to complete the

shoulders shown in Table 304.01 and the determination of the latest date the Contractor can start shoulder construction in Paragraph 4.b.(1)(i) of this Subsection.

(iv) The assessment of all liquidated damages described in Section 304 shall be in addition to any applicable liquidated damages assessed in accordance with Subsection 108.08.

5. a. The Contractor shall place embankment material in successive horizontal layers not exceeding 150 mm in depth before rolling. Each layer will extend the full width of the embankment and shall be leveled before compaction.

b. Each layer of embankment material shall be compacted with at least 2 complete coverages over the area with an approved multiple wheel, pneumatic-tired roller meeting the requirements of Subsection 205.03, Paragraph 14.c.(2).

c. Water may be added to the embankment material to facilitate compaction.

d. When the moisture content of the soil used in constructing shoulders is too high to allow rolling or to obtain satisfactory compaction, each layer shall be disced, harrowed, or otherwise manipulated to facilitate drying.

6. The Contractor shall correct any pavement damage that results from shoulder construction activities.

7. The Contractor shall clean the surfaced areas with mechanical brooms before opening a lane to traffic. Mechanical brooms shall conform to the requirements of Section 501.

8. Care shall be taken to avoid contaminating asphaltic concrete mixes with "rough" surfaces like stonemastic, Type "MQ", Type 13, or Type 15 with earth shouldering material.

304.04 -- Method of Measurement

1. a. Each shoulder will be measured separately in stations of 100 m without regard to width. Stations shall be measured horizontally along the project centerline between the beginning and ending points.

b. Deductions will be made for all areas where shoulders are not required. Intersecting roads and driveways are not exceptions. Additional length of shoulder construction due to intersection returns, tapers, curves, tangents, stubs, driveways, and other irregular areas shall be considered subsidiary to "Earth Shoulder Construction".

c. Shoulder construction will be measured without regard for the width or depth of the work.

2. Water applied at the direction of the Engineer will be measured in accordance with Subsection 302.04.

304.05 -- Basis of Payment

- | 1. | <u>Pay Item</u> | <u>Pay Unit</u> |
|----|--------------------------------------|----------------------------------|
| | Earth Shoulder Construction
Water | Station (StaM)
Kiloliter (kL) |
2. Preparing the shoulder by blading, scarifying, compacting, and disposing of removed material shall be considered subsidiary to "Earth Shoulder Construction".
3. Shoulder construction behind newly constructed curbs is paid for, but the material that is placed on top of the shoulder to make a smooth transition from the top of the new curb to the shoulder surface is subsidiary.
4. Payment is full compensation for all work prescribed in this Section.