

**SECTION 1019**  
**SHOULDER AND SLOPE MATERIAL**

**1019-1 GENERAL**

Use shoulder and slope material to construct shoulders and plate slopes with materials capable of supporting vegetation. Material that contains roots, root mats, stumps or other unsatisfactory material will not be acceptable.

**1019-2 SHOULDER AND SLOPE BORROW**

Use borrow sources in accordance with Article 1018-2.

Use soil consisting of loose, friable, sandy material with a PI greater than 6 and less than 25 and a pH ranging from 5.5 to 7.0. Remove stones and other foreign material 2 inches or larger in diameter.

Soil consisting of a pH ranging from 4.0 to 5.5 may be accepted if the following limestone application used. Substitute listed limestone application rates when performing seeding and mulching operations. Standard lime application rate is 4000 lbs. per acre. Soil type should be identified during the soil analysis. Soils with a pH below 4.0 should not be used. Soils with a pH above 7.0 require acidic amendments to be added. Contract the Roadside Environmental Unit for recommendations to lower pH below 7.0.

pH Test Result	TABLE 1019-1 LIMESTONE APPLICATION RATE (lbs / acre) TO RAISE pH		
	Sandy Soils	Silt Loam Soils	Clay Loam Soils
4.0 to 4.4	4000 + 1000	4000 + 4000	4000 + 6000
4.5 to 4.9	4000 + 500	4000 + 3000	4000 + 5000
5.0 to 5.4	4000	4000 + 2000	4000 + 4000

**1019-3 AGGREGATE SHOULDER BORROW**

Use aggregate shoulder borrow (ASB) that meets the following gradation in Table 1019-2.

TABLE 1019-2 GRADATION OF AGGREGATE SHOULDER BORROW	
Sieve	Percentage Passing
1 1/2"	100
1/2"	55-95
#4	35-74

**SECTION 1020**  
**ASPHALT MATERIALS AND ADDITIVES**

**1020-1 DELIVERY AND ACCEPTANCE OF ASPHALT MATERIALS**

Asphalt materials are accepted at the source of shipment subject to the conditions herein.

All asphalt transport tankers, including rail and truck tankers, shall have a sampling valve in accordance with Asphalt Institute Publication MS-18, AASHTO R66, ASTM D140 or a comparable device acceptable to the Engineer.

Each transport tanker delivering asphalt materials to the project or rail siding shall keep a running log showing the date, destination and type and grade of material hauled on each trip. Print, stamp, or write in ink information appearing in the log and have available for examination upon request.