Suitability for Construction Materials: Roadfill Source - North Carolina (2008)





Suitability for Construction Materials: Roadfill

Roadfill consists of soil material that is excavated from its original position and used in road embankments elsewhere. The evaluations for roadfill are for low embankments that generally are less than 6 feet in height and are less exacting in design than high embankments, such as those along super-highways. The rating is given for the whole soil, from the surface to a depth of about 5 feet, based on the assumption that soil horizons will be mixed in loading, dumping, and spreading.

Soils are rated as to the amount of material available for excavation, the ease of excavation, and how well the material performs after it is in place. Soils are placed into suitability rating classes per their rating indices. These are poor (rating index = 0), fair (rating index > 0 and < 1.0), or good (rating index = 1.0).

Soil properties that affect the amount of material available for excavation are thickness of suitable material above bedrock or other material that is not suitable. The percent of coarse fragments more than 3 inches in diameter, the depth to a seasonal high water table, and the slope are properties that influence the ease of excavation. How well the soil performs in place is indicated by the AASHTO classification and group index and by the shrink

-swell potential. A high content of gypsum can cause piping or pitting. Some damage to the borrow area is expected, but if revegetation and erosion control are likely to be difficult, the soil is rated severe.

Soil survey interpretations for construction materials are designed to provide guidance to users in selecting the site of a potential source. Soils may be selected as potential source materials because they are nearby, are the only source available, or meets some or all of the physical or chemical properties required for the intended application. In theory, every soil may be used as source materials, but in reality, only a few soils have the profile characteristics that meet the defined criteria and performance requirements when rated for a specific propose. The use of rating guides can provide the user a means to select potential sites for further evaluation.

Sources: ESRI. 1992. 1:3,000,000 Oceans. ArcWorld. ESRI - Redlands, CA. National Atlas (http://www.nationalatlas.gov/). Roads. (09/2005). National Atlas (http://www.nationalatlas.gov/). State Boundaries. (03/2007). Soil Survey Staff. 2006. Construction Materials; Roadfill Source Interpetation - National Soil Information System (07/12/2007). USDA Natural Resource Conservation Service, National Soil Survey Center, Lincoln, Nebraska. (http://soils.usda.gov). USDA-NRCS Staff. 2003. County Boundaries derived from 1:100,000 (Bureau of Census – TIGER) source as provided by C. Lloyd, USDA-NRCS, Information Technology Center, Fort Collins, CO. USDA-NRCS. 2008. Soil Survey Geographic Database (SSURGO) version 2.1. North Carolina Collection. Raleigh, NC. Soil Data Mart Source (http://soildatamart.nrcs.usda.gov). Fiscal Year 2008, second quarter edition. USGS. Analytical Hillshade computed from 30 meter National Elevation Dataset (NEDS) using the following parameters: 315 degrees altitude, 45 degrees azimuth, and z factor 1x. Prepared by USDA-NRCS-NGDC, Morgantown, WV.



