supervise the geotechnical investigation. In planning the investigation, the engineer or geologist must—

(A) Determine the number, location, and depth of borings and test pits using current prudent engineering practice for the size of the impoundment and the impounding structure, the quantity of material to be impounded, and subsurface conditions.

(B) Consider the character of the overburden and bedrock, the proposed abutment sites for the impounding structure, and any adverse geotechnical conditions that may affect the particular impoundment.

(C) Identify all springs, seepage, and groundwater flow observed or anticipated during wet periods in the area of the proposed impoundment.

(D) Consider the possibility of mudflows, rock-debris falls, or other landslides into the impoundment or impounded material.

[44 FR 15366, Mar. 13, 1979, as amended at 45
FR 51550, Aug. 4, 1980; 48 FR 44780, Sept. 30, 1983; 50 FR 16199, Apr. 24, 1985; 53 FR 43605, Oct. 27, 1988; 53 FR 48614, Dec. 1, 1988; 59 FR 52028, Oct. 20, 1994; 73 FR 75879, Dec. 12, 2008]

## §784.17 Protection of publicly owned parks and historic places.

(a) For any publicly owned parks or any places listed on the National Register of Historic Places that may be adversely affected by the proposed operation, each plan shall describe the measures to be used.

(1) To prevent adverse impacts, or

(2) If a person has valid existing rights, as determined under §761.16 of this chapter, or if joint agency approval is to be obtained under §761.17(d) of this chapter, to minimize adverse impacts.

(b) The regulatory authority may require the applicant to protect historic and archeological properties listed on or eligible for listing on the National Register of Historic Places through appropriate mitigation and treatment measures. Appropriate mitigation and treatment measures may be required to be taken after permit issuance provided that the required measures are completed before the properties are affected by any mining operation.

 $[52\ {\rm FR}\ 4263,\ {\rm Feb}.\ 10,\ 1987,\ {\rm as}\ {\rm amended}\ {\rm at}\ 64\ {\rm FR}\ 70838,\ {\rm Dec.}\ 17,\ 1999]$ 

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## §784.18 Relocation or use of public roads.

Each application shall describe, with appropriate maps and cross sections, the measures to be used to ensure that the interests of the public and land-owners affected are protected if, under  $\S761.14$  of this chapter, the applicant seeks to have the regulatory authority approve—

(a) Conducting the proposed surface coal mining operations within 100 feet of the right-of-way line of any public road, except where mine access or haul roads join that right-of-way; or

(b) Relocating a public road.

 $[44\ {\rm FR}\ 15366,\ {\rm Mar.}\ 13,\ 1979,\ {\rm as}\ {\rm amended}\ {\rm at}\ 64\ {\rm FR}\ 70838,\ {\rm Dec.}\ 17,\ 1999]$ 

## §784.19 Disposal of excess spoil.

(a) If you, the permit applicant, propose to generate excess spoil as part of your operation, you must include the following items in your application—

(1) Demonstration of minimization of excess spoil. A demonstration, prepared to the satisfaction of the regulatory authority, that the operation has been designed to minimize, to the extent possible, the volume of excess spoil that the operation will generate, thus ensuring that spoil is returned to the mined-out area to the extent possible, taking into consideration applicable regulations concerning restoration of the approximate original contour, safety, stability, and environmental protection and the needs of the proposed postmining land use.

(2) Capacity demonstration. A demonstration, prepared to the satisfaction of the regulatory authority, that the designed maximum cumulative volume of all proposed excess spoil fills within the permit area is no larger than the capacity needed to accommodate the anticipated cumulative volume of excess spoil that the operation will generate, as approved by the regulatory authority under paragraph (a)(1) of this section.

(3) Discussion of how you will address impacts to perennial and intermittent streams and related environmental values. You must design the operation to avoid placement of excess spoil in or within 100 feet of a perennial or intermittent