FEDERAL REGISTER: 48 FR 22110 (May 16, 1983)

DEPARTMENT OF THE INTERIOR
AGENCY: Office of Surface Mining Reclamation and Enforcement (OSM)

30 CFR Parts 701, 816, and 817
Surface Coal Mining and Reclamation Operations Permanent Regulatory Program; Roads

ACTION: Final rules.

SUMMARY: The Office of Surface Mining Reclamation and Enforcement (OSM) is issuing final rules governing roads under the Surface Mining Control and Reclamation Act of 1977. These rules will replace the classification system contained in the previously suspended rules by designating roads as either primary or ancillary. OSM has adopted performance standards which permit the regulatory authorities to approve designs more tailored to local needs and allow them to place greater emphasis on results through analysis of design practices.

EFFECTIVE DATE: June 15, 1983.

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SUPPLEMENTARY INFORMATION:

I. BACKGROUND

On April 16, 1982, OSM proposed rules for its permanent regulatory program regarding the design, construction, maintenance and use of roads utilized in surface coal mining operations. (See *47 FR 16592.)* The proposal included a road classification system, together with performance standards for primary and ancillary roads. A separate definition of "road" was published on January 4, 1982 *(47 FR 56).* These rules finalize those proposals.

OSM has adopted a two level approach in these rules. First, OSM has established basic performance standards with nationwide relevance. Second, when considered necessary to ensure environmental protection and safety consistent with the planned duration and use of the regulated roads, the regulatory authorities may develop design criteria particular to their regions. This combination of national standards, together with any necessary design criteria developed by regulatory authorities will prevent and/or address the adverse effects from road construction, maintenance, and use. Because the areas where surface coal mining operations occur have great diversity in their territorial, climatic, biologic, chemical and other physical conditions, it is difficult to develop design criteria for road construction, maintenance and use with universal applicability.

Sections 515(b) (17) and (18) of the Surface Mining Control and Reclamation Act (the Act), *30 U.S.C. 1201* et seq., specify standards for roads used in surface coal mining and reclamation operations. These rules are intended to implement those standards. In addition, Section 516(b)(10) of the Act requires OSM to consider the differences between surface and underground mining when promulgating rules. However, OSM has not identified any differences between roads for surface mines and roads for underground mines that necessitate differing regulatory provisions. Thus, the performance standards for road construction, maintenance and use being adopted here for surface mining (Part 816) and for underground mining (Part 817) are identical. The discussions which follow, of the rules adopted and the public comment received, will reference surface mining requirements unless a specific issue concerning underground mining was raised.

On March 13, 1979 *(44 FR 14902, 15320),* OSM promulgated permanent program rules pertaining to road location, construction and restoration which established design criteria and which applied a classification system consisting of three classes. (30 CFR 816.150-816.176 and 817.150-817.176.) At the same time, the term "road" was defined at 30 CFR 701.5.

Soon after adoption of the permanent program rules, they were challenged in a lawsuit filed in the U.S. District Court for the District of Columbia. With respect to the road rules, the court found in favor of the challengers and remanded the rules to OSM for further consideration. In re: Permanent Surface Mining Regulation Litigation, Civ. No. 79-1144, Slip op. at 32-36 (D.D.C. May 16, 1980). As a result of this court decision, OSM suspended these rules and the definition for "road" *(45 FR 51547,* August 4, 1980). Therefore, there have been no permanent program rules for roads in effect.

In 1982 OSM again proposed road rules and a 30-day comment period was opened on April 16, 1982. It was scheduled to be closed on May 17, 1982, but on May 13, 1982 *(47 FR 20631),* OSM extended the public comment period indefinitely. On July 13, 1982 *(47 FR 30266),* OSM issued a notice closing the public comment period on August 25, 1982. During the comment period, OSM received approximately 160 individual comments from 30 sources representing industry and associations, environmental groups and Federal and State agencies. The OSM Administrative Record for these and other rules was reopened to allow consideration of the oral comments made at the oversight hearings held by the House Interior and Insular Affairs Committee on September 9 and 10, 1982.

As part of its April 16, 1982 notice, OSM proposed to regulate "other transportation facilities" together with ancillary roads. However, on June 25, 1982 *(47 FR 27690),* OSM proposed that Section 816.180 (other transportation facilities) and Section 816.181 (support facilities and utility installations) of the suspended rules be combined into new Section 816.180 -- Support facilities, and that a new definition of "support facilities" include "other transportation facilities" such as railroads, surface conveyor systems, chutes, aerial tramways or other transportation facilities. OSM has decided to resolve the overlapping approaches by regulating "other transportation facilities" as "support facilities" in final Section 816.181, in another rulemaking.

II. DISCUSSION OF RULES ADOPTED

This portion of the preamble consists of a brief description of the rules adopted. A more detailed discussion of the bases and purpose of these rules is included in the Response to Comments.

In its proposal, OSM presented two options for consideration in establishing standards for primary and ancillary roads. Option (1) included both performance standards and design criteria. Option (2) set performance standards only. In the final rules, OSM has set general performance standards for primary and ancillary roads in 30 CFR 816.150. Under this rule, all roads must meet the performance standards for their design, location, construction, use, maintenance and reclamation which are set forth in Section 816.150(b)-(e). Final Section 816.150(a) pertains to the road definition and is discussed below. A separate provision has been adopted for primary roads, 30 CFR 816.151, which incorporates components of Options (1) and (2) of the proposed rules.

To assist the reader in understanding the changes in the final rules the following Derivation Table shows the relationship of the final rules to the previous suspended rules and the proposed rules, including both options. The same changes apply for Part 817 -- Underground mining activities.

DERIVATION TABLE -- ROADS

Final rule	Previous suspended rules	Proposed rules
Section 816.150:		
(a)(1)		Definition of "road" in Section 701.5.
(a)(2)(i)		Do.
(a)(2)(ii)		Do.
(a)(2)(iii)		Do.
(a)(3)		Do.

Final rule	Previous suspended rules	Proposed rules Option 1	Option 2	Section 816.180
Section 816.150:				
(b)	Sections 816.150(a), 816.160(a), 816.170(a)	816.150(a)	816.150(a)	(a).
(b)(1)	Sections 816.150(a), 816.160(a), 816.170(a)	816.150(a)	816.150(a)(1)	(a)(1) & (b).
(b)(2)	Sections 816.150(a), 816.160(a), 816.170(a)	816.150(b)	816.150(a)(2)	(a)(2).
(b)(3)	Sections 816.150(a), 816.160(a), 816.170(a)	816.150(b)	816.150(a)(3)	(a)(3).
(b)(4)	Sections 816.150(a), 816.160(a), 816.170(a)	816.150(b)	816.150(a)(4)	(a)(4).
(b)(5)	Sections 816.150(a), 816.160(a), 816.170(a)	816.150(a)(5)	(a)(5).	
(b)(6)		816.150(a)(6)	(a)(6).	
(b)(7)	Sections 816.150(a), 816.160(a), 816.170(a)	816.150(a)	816.150(a)(7)	(a)(7).
(b)(8)	Sections 816.154(b), 816.164(b), 816.174(b)	816.154(b)		
(b)(9)	Sections 816.152(d)(9), 816.162(d)(9)	816.151(d)(9) 816.150(b)(1).		
(d)(1)	Sections 816.151(b), 816.161(b), 816.171(b)	816.151(b)		
(d)(2)	Sections 816.151(d)(1), 816.161(d)(1), & 816.171(d)(1)	816.151(d)		
(e)(1)	Sections 816.155(a), 816.165(a), 816.175(a)	816.155(a)	816.150(c)	
(e)(2)	Sections 816.155(c), 816.165(c)	816.155(c)		
(f)	Sections 816.156(a), 816.166(a), & 816.176 Intro	816.156(a)	816.150(d)	
(f)(1)	Sections 816.156(a)(1), 816.166(a)(1), & 816.176(a)	816.156(a)(1)	816.150(d)(1)	
(f)(2)	Sections 816.156(a)(3), 816.166(a)(3), & 816.176(c)	816.156(a)(3)	816.150(d)(2)	
(f)(3)	Sections 816.156(a)(2), 816.166(a)(2), & 816.176(b)	816.156(a)(2)	816.150(d)(3)	
(f)(4)	Sections 816.156(a)(5), 816.166(a)(5), & 816.176(e)	816.156(a)(5) & 816.156(a)(6)	816.150(d)(4)	
(f)(5)	Sections 816.156(a)(9), 816.166(a)(9), & 816.176(h)	816.156(a)(9)	816.150(d)(5)	

Final rule	Previous suspended rules	Proposed rules Option 1	Option 2
Section 816.151:			
Intro			
(a)	Sections 816.150(d)(1), 816.160(d)(1)	816.150(d)	816.150(b)(1) (2)
(b)(1)	Sections 816.151(a), 816.161(a), 816.171(a)	816.151(a)	
(b)(2)	Sections 816.151(c), 816.161(c), 816.171(c)	816.151(c)	
(c)(1)	Sections 816.153(a)(1), 816.163(a)(1)	816.153(a)	
(c)(2)	Sections 816.153(c)(1)(ii), 816.163(c)(1)(ii)	816.153(c)(1)(ii)	
(c)(3)	Sections 816.153(c)(1)(iii)	816.153 (b) & (c)(1)(iii)	
(c)(4)	Sections 816.153(c)(1)(v), 816.163(c)(1)(v)	816.153(c)(1)(iv)	
(c)(5)	Sections 816.153(d), 816.163(d), 816.173(c)	816.153(d)	
(c)(6)	Sections 816.153(e), 816.163(e), 816.173(d)	816.153(e)	
(d)	Sections 816.154(a), 816.164(a)	816.154(a)	
(e)	Section 816.155(b)	816.155(b)	

SECTION 816.150 - ROADS: GENERAL.

Definition of Road. In its January 4, 1982 notice, OSM had proposed to adopt a general definition for "road" which was similar to the suspended definition and described the physical components of a road. That proposed definition, however, made no reference to road classifications. The January 4 proposal was made in connection with proposed rules for the exemption of operations affecting less than two acres provided for in Section 528(2) of the Act. A portion of those rules was adopted on August 2, 1982 *(47 FR 38424).* Readers should consult that Federal Register notice for discussion about the relationship between the terms "affected area" and "road."

In this rulemaking OSM has adopted a definition for the term "road" which limits its application to routes within the "affected area." The term encompasses the entire area and structures within a surface right-of-way. A "road" includes areas such as the roadbed, shoulders, parking, side areas and approaches. The proposed phrase "and such contiguous appendages as are necessary for the total structure" has not been included in the final definition because it is unnecessary. A road consists of structures such as bridges, ditches, drains and culverts. The term "road" applies to access and haul roads which are constructed, used, reconstructed, improved or maintained for use during coal exploration or are within the affected area during surface coal mining and reclamation operations. The definition specifically excludes pioneer or construction roadways used during the road construction procedure and roads within the immediate mining pit area.

SECTION 816.150(a)

The April 16, 1982 proposal provided for the designation of roads as either "primary" or "ancillary." Proposed definitions for these two terms were offered which focused on the frequency of use and the length of time in use. *(47 FR 16596).*

Rather than incorporate the classification system of primary and ancillary roads as part of the general definition of "road" as was proposed on April 16, 1982, these terms appear as Paragraph (a) in final Section 816.150.

In final Section 816.150(a) OSM has defined primary roads so as to include those roads which, in OSM's opinion, have the potential for greater adverse environmental impacts. These comprise all roads which are used for transporting coal or spoil; frequently used for access or for other purposes in excess of six months; or are to be retained as part of the approved postmining land use. Ancillary roads are all roads which are not designated as primary. This division is more clear-cut than the proposal with the result that it will reduce confusion over the identification of a road's classification.

SECTION 816.150(b)

Final Section 816.150(b) enumerates performance standards that operators must meet when locating, designing, constructing, reconstructing, using, maintaining and reclaiming all roads associated with surface coal mining operations. These listed performance standards complement other relevant provisions in Part 816. OSM has modified its proposal by adding to the list of performance standards. These new standards call for stabilizing exposed surfaces to control or prevent erosion, siltation, and air pollution attendant to erosion, through vegetation or other means; prohibiting the use of acidic or toxic substances on road surfaces; and applying a minimum static safety factor of 1.3 for all embankments. Additionally, Paragraph (b)(5) has been changed to make it clear that adverse effects to surface- and ground-water systems must be minimized. The standards also require an operator to control or prevent damage to fish, wildlife or their habitat and related environmental values; control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area; neither cause nor contribute, directly or indirectly, to the violation of State or Federal water quality standards applicable to receiving waters; refrain from significantly altering the normal flow of water in streambeds or drainage channels; and prevent or control damage to public or private property.

SECTION 816.150(c)

Final Section 816.150(c) includes the specific requirement that in order to ensure environmental protection and safety during their planned duration and use, including consideration of the size and type of equipment used, the design and construction or reconstruction of roads and other transportation facilities shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement and culvert size as well as any necessary design criteria established by the regulatory authority. This meets a specific Congressional concern that these parameters will be considered and also provides authority to regulatory authorities to specify criteria where needed for local conditions. See the later discussion of comments for additional explanation of this provision.

SECTION 816.150(d)

Final Section 816.150(d) concerns performance standards for the location of all roads. It is a distillation of provisions appearing in Option (1) of the proposed rule. These requirements also appeared in the preferred alternative in the Final Environmental Impact Statement OSM EIS-1: Supplement (FEIS) for the regulation of primary roads. However, OSM views them has having more general applicability and, therefore, has placed them in final Section 816.150 for both primary and ancillary roads. The location performance standards prohibit the placement of any part of a road in the channel of an intermittent or perennial stream unless the regulatory authority specifically approves such an action. Also, roads must be located to minimize downstream sedimentation and flooding.

SECTION 816.150(e)

Final Section 816.150(e) concerns general maintenance responsibilities. These appeared in Options (1) and (2) of the proposed rules and in the preferred alternative in the FEIS. OSM has placed them in final Section 816.150 because of their general applicability. Under this paragraph, a road must be maintained throughout its entire life to meet all performance standards and any additional design criteria established by the regulatory authority. Rather than prohibiting the use of flood damaged roads until they can be reconstructed, as was proposed in Section 816.155(c) of Option (1), the final rule provides that in event of damage due to a catastrophic event, roads must be repaired as soon as practical. This is derived from the second sentence of Section 816.155(c) of the previous rules.

SECTION 816.150(f)

Final Section 816.150(f) addresses reclamation of roads which are not to be retained under an approved postmining land use. This section is derived from proposed Option 1 and Option 2 (see the derivation table). Such roads must be reclaimed immediately when no longer being used for mining and reclamation operations. The five reclamation activities listed in this paragraph include (1) closing the road to traffic; (2) removing all bridges and culverts; (3) restoring the natural drainage patterns; (4) reshaping cut and fill slopes to be compatible with the postmining land use and to complement the drainage pattern of the surrounding terrain; and (5) replacing topsoil and revegetating disturbed surfaces. These requirements, plus the other relevant reclamation requirements of Part 816, obviate the need for the additional provisions in Option (1) for proposed Section 816.156.

SECTION 816.151 - PRIMARY ROADS.

Because primary roads have the potential to result in greater adverse environmental impacts, OSM has adopted an additional set of performance standards for their design, construction, and maintenance. These more detailed performance standards appear in final Section 816.151 and are based on standards which appeared in Option (1) of the proposed rule.

SECTION 816.151(a)

Final Section 816.151(a) requires an operator to secure certification by a qualified registered professional engineer that the design and construction or reconstruction of a primary road meets the performance standards of Part 816, current, prudent engineering practice, and any design criteria established by the regulatory authority. This certification requirement is discussed in greater detail in the Response to Comments portion of this preamble. The phrase

"current, prudent engineering practices" has been adopted to make the rules consistent with the rules of the Mine Safety and Health Administration in 30 CFR 77.215. It includes practices well-established by engineering principles and widely recognized by experts and with experience in the subject.

SECTION 816.151(b)

Final Section 816.151(b) limits the location of primary roads.

Final Section 816.151(b)(1) requires primary roads to be located, insofar as practical, on the most stable available surfaces to minimize erosion. The reference to limiting primary road location "outside of valley bottoms," which appeared in the preferred alternative of the FEIS has not been adopted because it was an incorrect statement. The material in this paragraph is based on Option (1) of the proposed rule. Proposed Section 816.151(a) in Option (1) would have required primary road locations on ridges, or the most stable slopes available to minimize erosion. The reference to "ridges" is not necessary as long as the most stable route is chosen. The word "surfaces" rather than "slopes" is used because roads are often constructed on flat terrain.

Final Section 816.151(b)(2) prohibits primary roads from using stream fords unless specifically approved by the regulatory authority for temporary routes during road construction. This provision tracks proposed Section 816.151(c). The proposed sentence concerning stream fords not adversely affecting stream sedimentation or fish and wildlife values was redundant in light of final Section 816.150(b)(2) and (d)(3) and so has not been adopted.

SECTION 816.151(c)

Final Section 816.151(c) concerns drainage control and is based upon the performance standards which appeared in Option (1) as proposed Section 816.153. It requires that, at a minimum, drainage control systems shall be designed to safely pass the peak runoff from a 10-year, 6-hour precipitation event. To provide flexibility to regulatory authorities to account for particular situations likely to be encountered over the life of the mine or related to specific downstream conditions, the rule allows for modification by the regulatory authority in those situations when the 10-year, 6-hour precipitation event measurement will not be appropriate.

The storm design event being adopted is consistent with the criteria of the Mine Safety and Health Administration (MSHA) published as "Design Guidelines for Coal Refuse Piles and Water, Sediment, or Slurry Impoundments and Impoundment Structures" (IR 1109). OSM recognizes the 24-hour duration storm usually results in a runoff volume and peak somewhat higher than the 6-hour storm for the same area (See *44 FR 15207).* However, in some watersheds, a 6-hour event can result in a higher peak flow. For a given storm frequency, the time of concentration and watershed shape can be more influential in determining the peak flow than the storm duration. Therefore, in most cases the differences in any increased volume of peak flows will be minor from a practical design and construction standpoint. Any computed increase in peak flow volume would most likely not result in any significant change in flow depth or flow velocities, and correspondingly, any alteration in drainage channel design.

Final Section 816.151(c) also includes the requirement of proposed Section 816.153(a) that primary roads must be designed, constructed, reconstructed and maintained so that they have adequate drainage control by using structures such as bridges, ditches and drains. Drainage pipes and culverts must be constructed and maintained to avoid plugging or collapse and erosion at inlets and outlets. Drainage ditches must be designed to prevent uncontrolled drainage over the road surface and embankment. Trash racks and debris basins shall be installed in drainage ditches where debris may impair functions. Culvert design, installation and maintenance shall take into account the vertical soil pressure, passive resistance of the foundation and weight of vehicles using the road. Natural stream channels shall not be altered or relocated except as provided by the rules on hydrologic balance. All stream crossings, except as provided for in paragraph (b)(2), are to be accomplished using bridges, culverts or other structures designed, constructed and maintained using current, prudent engineering practices. These provisions are derived from proposed Section 816.153(b), (c) and (d).

SECTION 816.151(d)

Final Section 816.151(d) specifies the kinds of materials, which may be used when surfacing primary roads and includes rock, crushed gravel, asphalt, or other material approved by the regulatory authority as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road. This section was proposed at Section 816.154(a) in Option (1). The prohibition on the use of acid- and toxic-forming substances for road surfacing, which appeared in proposed Section 816.154(b) and in the preferred alternative for primary roads, has been moved to the more general final Section 816.150, thereby making it applicable to ancillary roads as well.

SECTION 816.151(e)

Final Section 816.151(e) details routine maintenance responsibilities for primary roads. It is based on the Option (1) proposal at Section 816.155(b). The final rule eliminates redundant language and references to an activity which the Act does not regulate, i.e., watering for dust control. Such maintenance includes repairs to the road surface, blading, filling potholes and adding replacement gravel or asphalt. It also includes revegetation, brush removal, and minor reconstruction of road segments as necessary. Proposed Section 816.155(a) requiring maintenance throughout the life of the road has been subsumed within final Section 816.150(e).

III. DISCUSSION OF COMMENTS

A. GENERAL COMMENTS

OSM Authority. One commenter maintained that no section of the Act could be found that mandated OSM to give any advice, guidance, or instruction to operators on road building. The same commenter felt that Section 101(f) of the Act gave the States, not OSM, the responsibility for developing rules for surface mining and reclamation operations and that OSM rules basically should consist of the requirement for certification of road design by a registered professional engineer.

The authority for developing rules pertaining to roads is found in Sections 102, 201, 501, 503, 504, 515, 516 and 701 of the Act. While the cited Section 101(f) of the Act recognizes that the primary governmental responsibility for developing, authorizing, issuing and enforcing rules for surface mining and reclamation operations should rest with the States, Section 201(c)(2) of the Act specifically mandates that the Secretary, acting through OSM, shall publish and promulgate such rules and regulations as may be necessary to carry out the purposes and provisions of the Act. Also Section 501(b) of the Act charges the Secretary with the responsibility for promulgating rules covering a permanent regulatory procedure for surface coal mining and reclamation operation performance standards based on and conforming with Title V of the Act. Additionally, Section 503(a)(7) of the Act requires that, in order to be approved, State programs must contain provisions consistent with the Secretary's regulations. Furthermore, the Secretary's authority to promulgate regulations implementing the Act and to require that State programs be consistent with them was upheld in In re: Permanent Surface Mining Regulation Litigation, Civ. No. 79-1144, Slip-op. at 5-8 (D.D.C., February 26, 1980).

These rules were developed to implement the environmental protection performance standards for the design, construction, use, maintenance, and restoration of roads at surface and underground coal mining operations. Together with the certification by professional engineers in the case of primary roads, these performance standards are necessary for adequate assurance that roads at mine operations will minimize adverse environmental effects and not cause damage to public or private property.

One commenter thought that improperly constructed roads could violate Section 515(b)(17) of the Act, and argued that a number of the proposed rules failed to consider the critical significance of the potential for erosion and sediment contributions from "haul roads." In addition to suggesting that the proposed rules violated the Act, the commenter felt that the previous rules for roads were heavily supported with scientific data while no new data were cited as evidence for the proposed changes.

The essential environmental protection requirements for roads are highlighted in Sections 515(b) (17) and (18) of the Act. The final rules succinctly set out required performance standards to accomplish these ends and are consistent with the Act.

With regard to the commenter's concern about haul roads, a road used for transporting coal or spoil, in essence a haul road, is defined as a primary road and its design and construction or reconstruction must be certified by a professional engineer as meeting both the performance standards of Part 816 and any design criteria set by the regulatory authority. Potential erosion and sediment problems from primary roads are adequately addressed by the requirements of Section 816.151. Moreover, OSM has separately addressed the general problem of erosion by adopting a performance standard in Section 816.95 which implements Section 515(b)(4) of the Act. This requirement is applicable to all roads associated with surface coal mining operations.

With respect to the comment concerning scientific data, the technical data which were listed under Reference Materials in the Federal Register notice *(47 FR 16595,* April 16, 1982) supplemented the technical materials which were used in the development of the suspended rules. *(44 FR 15245,* March 13, 1979). The data continue to support these final rules.

Option (1) vs. Option (2) and Performance Standards vs. Design Criteria. Option (1) of the proposed rules *(47 FR 16592,* April 16, 1982), included both design and performance standards for roads. Option (2) contained performance standards only. It was anticipated that either one of the options would be selected or features from both would be combined into a final rule after comments were evaluated. The final rules adopted combine aspects of Options (1) and (2) with modifications incorporated in response to comments and analysis in the FEIS.

One commenter felt that OSM's conclusion in the April 1982 preamble that general performance standards under Option (2) would provide equivalent environmental protection to detailed design criteria under Option (1) was not buttressed by the material in the March 13, 1979 preamble to the previous rules *(44 FR 15246).*

Although OSM has chosen not to include design criteria within the rules, these final rules have incorporated more detailed performance standards for primary roads than were contained in Option (2). Upon reviewing the legislative history of the Act, it is OSM's view that the adoption of these performance standards, coupled with the ability of regulatory authorities, provided under Section 816.150(c), to set design criteria for specified parameters and the requirement (under Section 816.15(1)(a)) that the design and construction of primary roads be certified by qualified registered professional engineers, will result in the necessary environmental and public safety protection. This approach also advances the finding in Section 101(f) of the Act because it takes into account regional, physical, biological, and climatic diversity among the States by giving the regulatory authorities the responsibility to develop appropriate design criteria when necessary.

One commenter opposed the adoption of design criteria arguing that the operator could not be held liable for consequences in the event such design criteria failed to meet performance standard requirements.

OSM disagrees with the commenter's conclusion. When engaged in a surface coal mining operation, an operator is responsible to meet the performance standards of the Act and the implementing rules as promulgated in 30 CFR Part 816. Establishment by a regulatory authority of a design criterion will not insulate an operator from this responsibility. In the event a specific design fails to meet the performance standards, an operator must take appropriate mitigative measures. See previous 30 CFR 786.29 and proposed 30 CFR 773.17(e) at *47 FR 27694,* June 25, 1982.

Though preferring Option (2), one State commenter recommended the adoption of Option (1) with the design criteria because this would allow the State to propose standards based on its existing State requirements. The commenter thought that the State's rules would then be "as effective as" the OSM rules. The question of whether a State's rules are no less effective than OSM's rules in Part 816 depends on the substance of the State's rules and not merely on whether a regulation does or does not contain design criteria.

One commenter suggested that OSM insert language in the preamble to make it clear that under Option (2) the States would have the opportunity to establish design criteria to meet their respective conditions. The final rules have

been written so that regulatory authorities may develop general design criteria as part of the State program, or evaluate road designs on a case-by-case basis.

One commenter thought that incorporating specific design criteria for primary roads under Option (1) would be less burdensome for the operators and regulatory authorities because it would not require an operator to design a road system completely, therefore saving additional engineering costs. Another commenter saw Option (1) as simplifying the review and enforcement process and pointed out that the relatively high initial construction costs would be offset, to some extent, by lower long-term maintenance costs.

OSM disagrees with the assessment of the first commenter. The establishment of design criteria by OSM or the regulatory authority would not necessarily be the equivalent of specifications which must be included in a design for a specific road. Operators have the responsibility to submit sufficiently detailed designs for each road that demonstrate compliance with the performance standards promulgated in Part 816.

With respect to the second comment, construction cost savings can be realized by the establishment of design criteria on a localized or regional basis, rather than by national criteria. Construction costs can escalate from underdesign, as well as overdesign, and maintenance costs are minimized when a road is designed to meet specific needs and then used as intended.

One commenter felt that elimination of design standards would substantially increase the likelihood that roads would be improperly constructed for the following three reasons: (1) The proposed performance standards were vague and difficult to enforce; (2) OSM had indicated its intent to eliminate detailed information requirements for road design during permit review; and (3) OSM assumed that professional engineers would design roads but this was not required in the proposal and would result in design by non-engineers to cut costs.

OSM disagrees with the commenter's first point. The performance standards in final Sections 816.150 and 816.151 are sufficiently specific to allow the regulatory authorities to evaluate whether roads are being properly designed, constructed, and maintained. Although OSM has minimized the use of design criteria in the national standards, regulatory authorities may include additional design criteria in their individual programs (either generally or on a case-by-case basis) and may develop technical guidelines when they consider such added specificity is needed. Furthermore, as an aid to regulatory authority review, OSM requires certification by a registered professional engineer that proposed design and actual construction or reconstruction for primary roads meet Part 816 performance standards and any design criteria required by the regulatory authority.

In response to the commenter's second point, OSM has not proposed changes to the information collection rules for road design under 30 CFR Parts 780 and 784 and no changes are made in this final rule.

Finally, the commenter misstates OSM's intention concerning the development of road designs. The final rules do not specify who must prepare the design. Rather, they require certification by a qualified registered professional engineer that the design submitted to the regulatory authority meets the performance standards of Part 816 and any design criteria required by the regulatory authority. The important consideration is whether the design meets the prescribed standards and not who does the preparation.

One commenter considered it "noteworthy" that Section 816.150(d)(1) in the suspended rules allowed use of alternative design specifications if the design by a professional engineer resulted in performance equal to or better than the design standards. The commenter felt this added important flexibility and pointed out that the provision for alternative specifications had been eliminated from proposed Option (1).

OSM agrees that important flexibility is attained by allowing for approval by the regulatory authority of designs which will take into account site specific or regional conditions. This adaptability is intended by this final rule.

One commenter thought that the degree of environmental protection to be achieved under Option (2) would depend on the attitude of each operator, permit reviewer and inspector. The commenter felt that review of design proposals would be inconsistent and problematic, and that some operators would attempt to cut costs by designing

roads which would eventually develop instability, erosion and flooding problems leading to high maintenance costs for correction. In the commenter's opinion the operators who continued in good faith to construct properly designed roads would find themselves at an economic disadvantage.

As pointed out in the FEIS, inconsistent implementation of the permanent program rules among States or within a State is as likely under previous rules as under the new rules. Consistent application of the rules depends upon the personnel involved. The final road rules provide sufficient guidance to regulatory authorities to result in consistent application. In addition, Sections 780.11, 780.14 and 780.37 of the permitting rules require sufficient technical information from the operator to allow proper permit application evaluation. Moreover, regulatory authorities may require supplemental information. Finally, although those regulatory authorities which choose not to incorporate design criteria within their rules could place demands for increased competence on their reviewing personnel, these demands can be reduced significantly through the use of technical and policy guidelines.

The commenter's fear that poor attitudes would result in problematic and inconsistent design review and subsequent construction problems is based on the view that the regulatory authority cannot adequately develop standards and will not proceed in the review, inspection or enforcement actions. Under the provisions of Section 503 of the Act, the State is required to demonstrate that it has the capability to carry out the provisions of the Act both from administrative and technical standpoints. After implementation of a State program, OSM maintains a continuing oversight role to help assure that the provisions of the Act are being met. These two factors in the regulatory scheme should militate against ineffective or incomplete enforcement by the regulatory authorities.

Several commenters proposed changes to Option (1) and Option (2) which included different combinations of performance standards, design criteria, and constraints. The emphasis and importance that the commenters placed on the individual areas of road design varied widely. For example, one commenter preferred Option (2) but felt it was necessary to retain the Option (1) provisions that prohibited the use of unsuitable material in road embankment construction, required compaction of road building material, and dealt with disposal of excess material from excavations. Another commenter did not express a preferred option but proposed a combination which called for the adoption of most of Option (1) with modifications and specific sections selected for deletion. A third commenter expressed opposition to Option (2) and offered a compromise which provided for a variance for road routes and grades, deletion of embankment specifications, reduction of the design storm frequency, establishment of a safety factor on all cuts and fills, sediment sumps in the drainage systems, and imposition of time limits for drainage and stabilization on infrequently used roads.

As described earlier in this preamble, OSM has considered the comments and adopted performance standards for primary roads (Section 816.151) in addition to the more general performance standards of Section 816.150. The wide range of comments received on the proposed alternatives demonstrates the need for leeway on the part of the regulatory authority to establish criteria which address the prevailing conditions and potential severity of environmental problems associated with particular situations. Some of these comments suggested rule changes that reflect concerns considered critical to particular interests and regions, but which are not necessarily important or appropriate for other regions or interest. The final rules allow regulatory authorities to adapt their programs beyond the minimum requirements to cover any particular situation. If some of the comment proposals representing regional conditions had been adopted nationwide, the final rules could have become unnecessarily inflexible or inappropriate for application based upon site- or region-specific conditions.

Many commenters expressed general opposition to Option (1) and supported the use of performance standards under Option (2). They found Option (2) provided greater flexibility, was result-oriented and would be cost effective. Conversely, a number of commenters expressed general opposition to adoption of Option (2) and the use of performance standards within the rules.

They cited a wide range of environmental and public safety concerns that they believed would result from the removal of Federal minimum design criteria.

The adoption of performance standards rather than design criteria is not contrary to the environmental concerns of the Act. The central issue is whether, in addition to performance standards, minimum design criteria are necessary

within the body of the rules in order to effect the requirements of the Act. There has been insufficient evidence presented to rebut OSM's conclusion that allowing a variety of designs subject to the approval of the regulatory authority through the permit and, which will be adapted to specific settings, will offer overall protection at least as effective as a single design applied uniformly and irrespective of local conditions. At the same time, the approach adopted gives the regulatory authority the leeway to match the design to its particular situation. Furthermore, the requirement in the rules that the design and construction of primary roads to be certified by a qualified registered professional engineer gives added assurance that the requirements of the Act will be met. (A further discussion of the relative merits of the design criteria versus the performance standards approach appears in OSM's final environmental impact statement. FEIS Volume I, pp. II-7 and IV-5.)

Finally, the imposition of rigid limits through design and construction specifications to ensure a high degree of control over adverse environmental effects associated with construction, operation and reclamation of roads would result, in many instances, in excessive and unnecessary construction and operation costs.

B. SPECIFIC COMMENTS

Section 701.5 and 816.150(a) -- Definition of Road and Primary and Ancillary Roads. One commenter was of the opinion that the primary/ancillary designations might be more burdensome then the suspended classification system because the majority of the roads on a mine site would have to be designed and constructed to more stringent standards under primary road requirements. The commenter suggested designating roads as "light use," "access" and "haul" roads.

All roads, both primary and ancillary, must be designed appropriately for their planned duration and use. This means that consideration must be given to such items as the total life of the road, schedule of use, type and size of vehicles and equipment used, and trip frequency. These are the considerations which establish whether or not the majority of roads within a given site fall within OMS's specific categories. Although most roads may well fall into the category of primary road, such a classification is necessary for compliance with the environmental protection requirements of the Act.

One State commenter disagreed with OSM's assertion that the potential severity of damage and risk of harm are less from short-term and infrequently used roads than from long-term and heavily used roads. The commenter thought that whenever the conditions and potential for damage were the same for both types of roads, that the potential severity and risk of harm were also the same and that conditions could be such that roads of a temporary nature could have more potential for harm than those heavily used. The commenter questioned establishing the two categories indicating that, as proposed, some roads my not fit in either class, resulting in decreased flexibility. The commenter viewed the primary/ancillary designations as ambiguous. The commenter suggested that the primary/ancillary designations be eliminated and that all roads be required to meet the performance standards under proposed Section 816.150, with the regulatory authority deciding how best to meet performance standards after considering site-specific conditions.

Another group of commenters concurred in the belief that the primary/ancillary designations should be eliminated but for a contrasting reason. They believed that all roads should meet the design criteria under Option (1) for primary roads and felt this was a sound approach to regulation and one which would serve automatically to reduce erosion potential.

OSM agrees that certain roads (e.g., haul roads) have a potential for environmental damage regardless of whether their use is frequent or long-term. These have been included in the category of primary roads. Generally, the potential for both environmental and property damage attributable to the operation of roads varies with their frequency of use and their conditions of use, such as vehicle speed, vehicle type, operational restrictions, maintenance schedules, etc. The level of use associated with those roads which are "ancillary" roads and the decrease in area disturbance necessary for their construction significantly reduces their potential for environmental or property damage as compared to the potential for damage from long-term or heavily-used roads. This distinction was cited by many commenters who advocated some form of categorization of roads during development of the definition for the term "road" in the previous permanent program rules *(44 FR 14937*, March 13, 1979). The distinction was applied by

OSM when it finalized the classification system in the 1979 rules which were later suspended. *(44 FR 15246,* March 13, 1979). Some form of categorization for roads is necessary from both environmental and economic points of view due to the wide range of road uses and needs and associated with coal mining operations. The primary/ancillary designations were proposed in response to the need for flexibility in design consideration. Rather than developing numerous categories for roads centered around specific use conditions, OSM has decided to use only two classifications.

Several commenters expressed confusion with the proposed definitions for primary and ancillary roads. In contrast, one commenter encouraged adoption of the primary/ancillary designations and felt they thoroughly covered the uses of coal haul roads and should be self-explanatory. Another commenter felt that the proposed definitions were not all inclusive and that roads of frequent use over short duration and roads of infrequent use throughout the life of the mine were not covered by either definition. Several of the commenters cited the preamble to the proposed rules *(47 FR 16593,* April 16, 1982) and their belief that it was OSM's intention to allow some longer term roads of infrequent use to be classified as ancillary roads. The commenters suggested changing "and" to "or" within the proposed definition for ancillary roads to allow roads used infrequently throughout the life of the mine to be designated ancillary.

To eliminate possible confusion about the coverage of the two terms, OSM has specified which roads will come within the primary road designation and left all other roads to come within the ancillary road designation. The commenter was correct in saying that the proposed categories for primary and ancillary roads did not adequately address roads frequently used for short periods of time or infrequently used for substantial periods of time. After further analysis, OSM has concluded that regardless of their frequency of use, roads used to transport coal or spoil and roads that will be retained for postmining land uses shall be classified as primary. Any other road which is used frequently for a period in excess of six months is also to be classified as primary. This six month period was selected to set an objective limit between short- and long-term usage. Thus, an ancillary road is one that is (1) not used for transporting coal or spoil; (2) not to be retained following mining and reclamation; and (3) either used infrequently for any length of time or used at any level of frequency for periods of less than six months.

The performance standards of Section 816.150 apply to both primary and ancillary roads. These standards will be sufficient to meet the potential environmental risks for ancillary roads. In OSM's experience the roads classified as "primary" have the greater potential for adverse environmental and property damage than ancillary roads and, therefore, have the added protection of professional engineer certification for design and construction as well as specific performance standards for location, drainage control, surfacing, etc. Because the risks from ancillary roads are less than for primary roads, the added expense for design and construction certification by a registered professional engineer is not justified. In the case of ancillary roads an operator may use technicians with specialized background experience to locate and design such roads at considerable savings through use of standard field design methods and any minimum design criteria which the regulatory authority may establish to meet environmental and safety requirements. For example, while it could be necessary to have geotechnical analysis to demonstrate stability on the large cut and fill embankments associated with primary roads, nevertheless such analysis is often unnecessary for ancillary roads because their low volume of embankment materials and low traffic volumes decrease both the potential for environmental harm as well as harm to public health and safety. Also, since ancillary roads are not eligible for retention under postmining land use, engineering input for long range maintenance and operational considerations is not warranted.

In response to those commenters who urged the same design criteria for all classes or roads, the imposition of design criteria for all roads, regardless of their planned use, and the resulting unnecessary costs from instances of overdesign, cannot be justified. Such an approach will not assure that all environmental concerns will automatically be satisfied. Additionally, under Section 505 of the Act, the regulatory authorities may establish supplemental criteria within their rules for dealing with situations that may require distinctions beyond the primary/ancillary classifications. In summary, it is appropriate to give the regulatory authorities the flexibility to develop rules that address site and local conditions and, at the same time, are cost effective.

Two commenters suggested language to allow all roads located within a drainage area controlled by a sediment pond or other sediment control structure to be exempted from the definition for "road" under Section 701.5.

OSM has not accepted the suggestion. The control or prevention of siltation and water pollution, as afforded by a controlled drainage, addresses only part of the requirements for environmental protection for roads. Section 515(b)(17) of the Act requires environmental protections for other matters such as fish and wildlife and public and private property. Moreover, despite their small size relative to the total permit area, roads located outside the immediate pit area can have the potential for increased adverse environmental effects because they form a narrow corridor where the impacts on the adjacent area may be magnified due to the extended periphery and the steady use patterns over a long duration (e.g. air pollution attendant to erosion, damage to wildlife and wildlife habitat, and damage to public or private property). Attention to these other statutory concerns are reflected in the performance standards prescribed under Section 816.150. If all roads within controlled drainage situations were exempted from the definition for "road" under Section 701.5, then they would necessarily be exempt from the performance standards of Section 816.150, with the resulting protection level being insufficient to meet all of the requirements of the Act.

One commenter felt that the proposed definitions of primary road and ancillary road should take into account those portions of a road that may be classified differently depending upon use, location or special minesite factors. The final rules provide ample latitude for classification of a road segment based on type of use and other conditions. Further delineation is unnecessary.

One commenter expressed concern that ramp roads from the pit area would fall under the primary road category because such roads are "frequently used" for access, coal hauling and other purposes for extended periods of time. Another commenter suggested that pioneer or construction roads, which are to be either stabilized or replaced in accordance with Parts 816 or 817, not be included within the definition for road. The commenter also suggested exempting from the performance standards those roads which do not require extensive upgrading to meet the general performance standards which are maintained by county, State or Federal governments.

The final definition for "road" is similar to that used in the suspended rules. This definition provides a description of the physical area and structures covered and the kinds of roads included for purposes of specific road regulation. The definition includes the entire area within the right-of-way, including the roadbed, shoulders, parking and side areas, approaches, structures, ditches and surface. The definition excludes roads outside the "affected area," pioneer or construction roadways used for road construction procedures and roads within the immediate mining-pit area. Although pioneer roads, construction roads or ramps from the pit area will not be subject to the performance standards for roads, nevertheless as part of the permit area, they will be subject to the other Part 816 performance standards, such as the topsoil, backfilling and grading, and revegetation rules.

With respect to the question of regulating public roads, OSM recognizes that there is a limit to the types of roads which should be considered a part of a "surface coal mining operation." This is reflected in the definition of "affected area" in Section 701.5 which has been revised to clarify those circumstances under which access or haul roads are sufficiently public so as not to be considered part of the affected area. The reader is referred to the Federal Register notice of August 2, 1982 *(47 FR 33430)* and April 15, 1983 *(48 FR 14819)*, for further discussion on the exclusion of roads which are controlled and maintained by a public entity.

Section 816.150(b)-(e) General Standards For All Roads. Several comments dealt with specific portions of the design criteria for primary road rules that were proposed under Option (1). Since some of these comments did not discuss the merits of keeping or not keeping the design criteria, but rather dealt with specific wording and other details of design criteria not included in this final rule, it is not necessary to address them in this preamble.

Section 816.150(b) Performance standards. Proposed Section 816.150(a) is being adopted as final Section 816.150(b). One commenter suggested that proposed Section 816.150(a) be rewritten using the language from section 515(b) (17) and (18) of the Act and deleting the seven proposed requirements. The commenter thought that, as proposed, the paragraph was confusing and left too many unanswered questions. The commenter believed that Congress intended OSM to set "attainable" standards because total prevention of adverse hydrologic effects is impossible and cited House report language in support of this position (H.R. Rep. No. 95-218, 95th Cong., 1st Sess., 110 (1977)).

The general performance standards under Section 515(b) (1) through (25) of the Act apply to all surface coal mining and reclamation operations, including, where applicable, roads. Therefore, limiting the effect of final Section 816.150(b) to only Section 515(b) (17) and (18), as suggested by the commenter, would not completely fulfill the requirements or the intent of the Act. The final rules accurately reflect the intent of Congress, denote standards that are both attainable and feasible and highlight those concerns that are especially significant for roads.

SECTION 816.150(b)(1)

Several commenters proposed deleting the requirement to control or prevent air pollution attendant to erosion. They argued that Section 515(b)(17) of the Act did not mention controlling air pollution from roads and that according to the decision in In re: Permanent Surface Mining Regulation Litigation, supra, Congress only intended to regulate air pollution related to wind erosion. Two of the commenters believed that Section 816.95 of the previous rules adequately addressed wind erosion.

In In re: Permanent Surface Mining Regulation Litigation, supra, Sections 816.95 and 817.95 of the permanent program rules were remanded by the court to the Secretary of the Interior for revision. In the court's opinion, the legislative history to Section 515(b)(4) of the Act indicated that Congress intended to regulate only air pollution related to erosion and not air pollution from an entire mining operation. OSM agrees with the court's interpretation which is reflected in this final rule, as well as in the revisions to Sections 816.95 and 817.95. *(48 FR 1160,* January 10, 1983). Instead of requiring coal mine operators to plan and use specific fugitive dust control measures as part of the total operation, the final rules at Sections 816.95 and 817.95 require operators to take steps to stabilize and protect all exposed surface areas in order to effectively control erosion and air pollution related to erosion. Because air pollution from road-related erosion can be a serious concern, and because Section 515(b)(17) of the Act specifically requires control or prevention of erosion resulting from roads, a provision regulating air pollution attendant to erosion appears in the final Section 816.150(b)(1). The proposed provision has been modified to provide a more specific standard. The final rule requires all exposed surfaces to be revegetated or otherwise stabilized in accordance with current, prudent engineering practices. This was included to emphasize the ongoing nature of erosion control.

SECTION 816.150(b)(2)

One commenter suggested that endangered species be addressed under proposed Section 816.150(a)(2) such that no primary road would be constructed which was likely to jeopardize the continued existence of endangered or threatened species or destruction of critical habitat.

The performance standards for protection of fish and wildlife in 30 CFR 816.97(b) require consideration of threatened or endangered plant and animal species and their critical habitats listed by the Secretary under the Endangered Species Act of 1973, as amended *(16 U.S.C. 1531* et seq.). The provisions of Section 816.97 coupled with the performance standards of final Section 816.150(b)(2), which provide that roads shall be operated and reclaimed so as to control or prevent damage to fish and wildlife habitat, will provide adequate protection for threatened and endangered species and other fish and wildlife.

SECTION 816.150(b)(3)

One commenter suggested rewording proposed Section 816.150(a)(3) to read: "Prevent to the extent possible, additional contributions of suspended solids to stream flows or runoff outside the permit area" in order to track the language of Section 515(b)(10)(B)(i) of the Act.

This commenter's suggested language does not exactly follow Section 515(b)(10)(B)(i) as that statutory provision also requires the use of the best technology currently available to prevent additional contributions of suspended solids. The standards of Section 515(b)(10)(B)(i) will be incorporated in the performance standards for protection of the hydrologic balance at Sections 816.41-816.46. The requirement in final Section 816.150(b)(3) to control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area is intended to emphasize OSM's concern in this matter.

SECTION 816.150(b)(4)

One commenter stated that it was understood that other applicable State and Federal water quality standards could not be violated during the conduct of operations, and that statements to that effect should be removed from the rules.

Roads have long been recognized as major contributors to stream sedimentation *(47 FR 16592,* April 16, 1982). Section 515(b)(10)(B)(i) of the Act further provides that in no event shall contributions be in excess of requirements set by applicable State and Federal law. The language in Section 816.150(b)(4) simply reflects these requirements.

SECTION 816.150(b)(5)

Although no comments were received specific to proposed Section 816.150(a)(5), OSM has modified the language of this provision in final Section 816.150(b)(5) to emphasize that protection is for both surface- and ground-water systems.

SECTION 816.150(b) (6) and (7)

No comments were received specific to proposed Section 816.150(a) (6) or (7). They are redesignated Section 816.150(b) (6) and (7) and are adopted as proposed.

SECTION 816.150(b)(8)

One commenter objected to the preferred alternative in the final EIS which would have allowed operators to use acidic or toxic materials in ancillary road surfacing. OSM has accepted this comment and placed the prohibition under the general performance standards applicable to all roads as new final Section 816.150(b)(8).

SECTION 816.150(b)(9)

OSM has adopted in new final Section 816.150(b)(9) a minimum static safety factor of 1.3 rather than 1.25 which appeared in the suspended rules. This standard is the same as that being required for backfilled areas and is slightly more stringent than that required in the suspended rules. It is based on engineering analysis used by OSM for the development of the suspended rules. See *43 FR 41739* (September 18, 1978) and *44 FR 15245* (March 13, 1979). Rather than specify particular design criteria for road embankments, the 1.3 factor of safety sets a standard to be attained. Where it is clear to the regulatory authority that a particular design will meet the standard, there is no need to require geotechnical or other more rigorous analysis of such embankments.

Section 816.150(c) -- Establishment of Design Criteria. Final Section 816.150(c) is based on proposed Section 816.150(b)(1). One State commenter thought that while the regulatory authorities should ensure that roads do not create environmental problems, nevertheless, they should not become involved in establishing and enforcing highway design criteria for haul roads nor should they use technical guidelines as implicit regulatory standards. It was suggested by another commenter that design criteria such as were contained in Option (1) be furnished as guidelines to be used and modified as appropriate by professionals to meet local conditions. A different commenter felt that the operator should have the complete flexibility to handle unique situations.

Regulatory authorities are not required to adopt design criteria for roads. However, the regulatory authorities have the responsibility to see that any design submitted with a permit application will assure that operators achieve the required performance standards. If, due to local conditions or situations, design criteria are needed to assure the performance standards are met, then the regulatory authority is authorized under Section 816.150(c) to establish necessary design criteria. While OSM has minimized the use of specific design criteria within these rules, each road design must include appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, and culvert size. OSM has compiled abstracts of publications related to the design, construction and reclamation of roads for use as a reference by the regulatory authorities and others.

Several commenters were confused by the phrase "recognized engineering minimum design criteria" in proposed Section 816.150(b)(1). They recommended use of the phrase "recognized engineering practice" because it has accepted meaning among engineers. They objected to having minimum design criteria established by the regulatory authority, preferring that designs be reviewed on a case-by-case basis so as to encourage technological advances in mining and reclamation.

The phrase "recognized engineering minimum design criteria" has not been adopted in these final rules. As adopted, Section 816.150(c) identifies instead the above-referenced parameters for which appropriate consideration must be given in the design. This requirement fulfills the Congressional intent as revealed in the following quotation appearing in the legislative history.

Access and haul roads constructed for the purpose of the mining operation area are major sources of siltation on a continuing basis both during and after mining. In order to overcome the continuing and longstanding environmental problems these roads present, the committee specifies in the Bill that roads are to be designed and constructed with appropriate limits to grade, width, surface material and culvert placement and size in order to control drainage and prevent erosion outside the permit area. H.R. Rep. No. 90-218, 95th Cong., 1st Sess. 128 (1977).

OSM agrees that one intent of the Act is to encourage advances in mining and reclamation. Section 816.150(c) will encourage advances in mining and reclamation techniques because the regulatory authority may modify any design criteria it develops to accommodate future technological advances, and also may approve designs on a site-specific basis.

The Mine Safety and Health Administration requested that OSM ensure that, in establishing design and construction limits for roads, consideration be given to the type and size of equipment using the roads. This suggestion is accepted. Final Section 816.150(c) has been revised accordingly.

Section 816.150(e) -- Maintenance. One commenter suggested striking the word "criteria" from proposed Section 816.150(c) so that the road would be "maintained to meet the approved design," not "to meet the approved design criteria." The commenter argued that the engineer should have the latitude to design the road to meet performance standards and not specific design criteria.

The design and construction or reconstruction of roads must meet the performance standards of Section 816.150 and any design criteria that the regulatory authority may set under Section 816.150(c). The language of the maintenance provision (Section 816.150(e)) has been written taking both of these factors into account. Regardless of how well a road is planned and constructed, lack of a maintenance program will lead to failure of the road to function as it was planned. The adverse environmental effects and threats to public safety from abandoned or upkept roads are well known.

Section 816.150(f) -- Reclamation. One commenter found it illogical and counter-productive to require removal of perfectly useable roads after mining, and felt that removal was not required by the Act. In contrast, another commenter suggested that road reclamation be strictly enforced because abandoned roads are one of the major contributors to watershed degradation in mined areas.

The final rules allow for retention of any roads that will be part of the approved postmining land use. The postmining land use plan must outline the need to retain the roads and should establish the responsibilities for their long-term maintenance.

However, many mine roads have little continuing social or economic value. This, in turn, leads to cessation of maintenance and abandonment. In many instances, abandoned roads associated with surface mining contribute substantially to stream sedimentation, thus affecting water quality flowing from the mined watersheds. Section 515(b)(17) of the Act explicitly covers postmining conditions. Therefore, specific performance standards for the control or prevention of postmining environmental and property damage from roads are needed. The provision for removal of all roads not part of the approved postmining land use will assist in controlling or preventing such damage.

Two commenters suggested deleting the proposed requirement that roads not in use be "immediately" reclaimed. The commenters asked that the word "immediately" be removed from proposed Section 816.150(d) to bring the section more in agreement with Section 508(a) of the Act. They claimed that imposition of a time constraint was not supported in the preamble. One of the commenters believed that such a modification to proposed Section 816.150(d) would allow the regulatory authority more flexibility to permit the operator to re-use the road as local conditions changed. The other suggested that road reclamation should be in accordance with the schedule approved in the permit.

OSM believes that the word "immediately" is in keeping with the intentions of the Act as expressed in Sections 102(e), 515(b) (2) and (16). Since roads serving the mining operation are often needed in their entirety until the very last stages of reclamation, they represent significant areas of disturbance which are not reclaimed as contemporaneously as other segments of the permit area. Thus, immediate reclamation presents a means of satisfying the requirements of Section 515(b)(10) of the Act for minimizing the disturbance to the hydrologic balance, and the requirements of Section 515(b)(10)(B)(i) of the Act to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to stream flow or runoff outside the permit area. Any possible re-use of a road should be established as part of the postmining land use plan to allow proper consideration of interim protection requirements or treatment.

One commenter proposed deletion of the word "natural" so that proposed Section 816.150(d)(3) would read, "restore drainage patterns". The commenter contended that the phrase "natural drainage patterns" implied no man-made disturbances and introduced the possibility for excessive requirements.

The construction of roads often involves some relocation or alteration of existing natural drainage ways which subsequently depends on maintenance by the operator to ensure continued environmental protection. It is OSM's intention that these drainage ways be restored to their preconstruction condition in accordance with 30 CFR 816.43.

One commenter objected to the language of proposed Section 816.150(d)(4) contending that the establishment of cut and fill slopes which would support the postmining land use should be the objective to be attained without setting a universal requirement for "reshaping" cuts and fills. The commenter felt that substituting the word "insuring" for "reshaping" would require less regrading and disturbance of vegetated areas thus minimizing the potential for additional contributions to stream flow. The commenter pointed out that the preamble to the proposed rules failed to indicate why "reshaping" was selected over "insuring" as provided in the Act. Also, the commenter thought that other sections of the rules, e.g., Section 817.102(k)(2), allowed slopes to be left in place and thus it was not always necessary, as a uniform practice, to reshape or redisturb an area where an operator ensures slope stability.

This comment is rejected. OSM intends that reclaimed roads be regraded when necessary in order to restore the approximate original contour of the land as required by Section 515(b)(3) of the Act. The word "reshaping" was chosen because it encompasses the action of regrading. The word "insuring" could be read to mean that the roadbed need not be removed in order to be compatible with the postmining land use. Unless the retention of the road to be used as a right of way is specifically approved as part of the postmining land use, retention of the roadbed would not be consistent with OSM's intent.

SECTION 816.151 - PRIMARY ROADS.

Section 816.151(a) -- Certification. Final Section 816.151(a) is based on proposed Section 816.150(d) of Option 1 and Section 816.150 (b)(1) and (b)(2) of Option 2. Two commenters objected to requiring certification of design, construction and reconstruction for primary roads by a qualified registered professional engineer. One thought that the type of engineer relied upon should be left to the operator. The commenter also felt that professional registration per se did not always guarantee that the most qualified person would be consulted and that any design deficiencies would be exposed ruling the permit review process. The other commenter stated that it was standard engineering practice to use recognized engineering procedures in large mines, and therefore, it was unfair to require smaller operators to obtain professional engineer design and certification on roads that had limited traffic.

The requirement for certification of design and construction or reconstruction of primary roads by registered professional engineers is in keeping with the Act's reliance on the input from these professionals for review of other critical structures and preparation of important plans. See Sections 507(b)(14), 515(b)(10)(B)(ii) and 515(b)(22)(H) of the Act. No such requirement is established for ancillary roads because the risks from such roads are less, making the added expense less justified.

Because the overall adverse environmental effects from coal mine roads can be equally as great or greater from a small mining operation or series of small operations as from one large operation, it is necessary to apply this certification standard to small operations as well as large ones. Insofar as the provisions of Section 816.150(c) require that each road must be designed only to the extent necessary to assure the required environmental protection and safety for its planned duration and use, the engineering costs will likely be kept commensurate with the size of the operation.

One commenter felt that while engineers could design roads to meet certain standards, nevertheless they could not guarantee compliance. Another commenter felt that the practice of engineering did not include expertise in environmental disciplines, and therefore, engineers could not certify that environmental performance standards were met. By way of support, the commenter quoted from the definition of "practice of engineering" used by the National Council of Engineering Examiners (NCEE).

While engineers cannot guarantee compliance with a design, nevertheless they can evaluate it prior to implementation and later determine whether it was carried out as specified. This view accords with the spokesman for the engineering profession in a recent hearing itself. During an oversight hearing on the Act before the House Subcommittee on Energy and the Environment, a spokesman for the American Consulting Engineers Council (ACEC), which has a membership of 3,800 private firms representing over 110,000 professional engineers and other scientific technical personnel, testified that "the public and environmental interests are best served if all technical design work is conducted under the supervision of a registered professional engineer who also certifies that the actual field construction is in accordance with those designs." The spokesman went on to make the following point:

The engineering profession has the training and experience to design and certify the geotechnical, structural, mining, and environmental facilities used in the mineral extraction industry. The engineering profession is recognized in registration laws and by this nation's legal system for just such tasks. Moreover, the profession is bound by a code of ethics that makes the public welfare and safety the highest priority, superior even to its responsibility to the client. [Oversight hearing on Pub. L. 95-87, House of Representatives, Subcommittee on Energy and the Environment, Committee on Interior and Insular Affairs, September 9, 1981, Transcript p. 181, Insert 3b-1.]

Moreover, the position espoused on behalf of the ACEC is consistent with the NCEE definition for the "practice of engineering" referred to by the commenter.

One commenter suggested changing the word "and" to "or" immediately preceding proposed Section 816.150(b)(2) to give operators the added option of designing their own roads in accordance with recognized and approved engineering practice rather than providing a certification.

The comment is rejected. Competent design involves more than the mere application of standard criteria to all situations, including the assessment of potential environmental effects. Certification by a qualified registered professional engineer that both the proposed design and construction or reconstruction of primary roads meet the performance standards and any design requirements of the regulatory authority is a critical element in the regulatory scheme to assure compliance with the Act.

Section 816.151(b) -- Location. One commenter was concerned that the absence of specific criteria for route location as was contained in suspended Section 816.150(a)(1) would encourage the selection of the shortest feasible route, even if on excessively steep and unstable slopes, causing a very high potential for erosion.

Selection of the shortest, environmentally protective route should be encouraged. The final rule does respond to the commenter's concern. Section 816.151(b) requires primary roads to be located on the most stable available

surface.

One commenter was of the opinion that the lack of specific restrictions against stream fords would most likely result in their use as a common cost-saving method and contended this would result in downstream erosion because heavy equipment would be driven over the stream bed instead of using bridges and culverts. In contrast, another commenter believed that both the Act and Congress clearly intended that the use of fords, culverts and bridges should not be prohibited. The commenter interpreted the proposed rules as prohibiting the use of all structures such as bridges and culverts.

While the final rules do not prohibit the use of fords, bridges or culverts, nevertheless they do limit the use of stream fords in a similar way to that in the suspended rules. Under the suspended rules, OSM recognized that the use of fords over intermittent or ephemeral streams for controlled, low-frequency use roads, and over streams during construction of permanent structures, would have minimal adverse environmental effect *(44 FR 15248,* March 13, 1979).

The regulatory authority's evaluation of a proposed stream crossing, including fords, under both the suspended and the final rules centers on whether requirements of Section 515(b) (10), (17), (18), and (24) of the Act and subsequent regulatory programs are met.

Discussion of Comments Specific to Ancillary Roads. One commenter wanted to allow wide latitude in the types and construction of ancillary roads, so that regulatory authorities would not impose uniform or stringent standards on all ancillary roads.

The general performance standards are the same for ancillary and primary roads. However, when establishing design criteria, regulatory authorities may set different limits for different classes of roads. Although some design and construction latitude is afforded by these rules, they should not be construed as abandoning proper design consideration. The regulatory authority is responsible to see that the environmental and safety performance standards are met for both ancillary and primary roads. It also has the authority to establish any additional standards it deems necessary to meet these requirements.

Two commenters felt that because ancillary roads were of short duration, they should be maintained only throughout their planned duration and use.

For maintenance to be effective in minimizing the adverse environmental effects from roads, it must be preventative as well as corrective in nature. A standard simply to maintain a road to its "planned duration and use" will not ensure that design integrity will be maintained throughout the life of the road. Because the assurance of environmental performance is based on design adherence, roads must be maintained throughout their lives.

Several commenters maintained that there should be provisions for retention of ancillary roads when they are a part of the postmining land use.

No provision has been made for retention of any roads for postmining land uses without satisfaction of the final Section 816.151 requirements. This has been reflected in the definition for "primary road" under final Section 816.150(a). The longer time frames associated with roads to be retained for postmining land use warrant the requirement of design and construction certification by a qualified registered professional engineer and the imposition of additional performance standards.

The occasion may arise when it will be desirable to consider retention of a road classified earlier as ancillary. In that event, OSM expects the operator to apply for a permit revision and to present to the regulatory authority the necessary engineer certification for design and construction or reconstruction. The operator will also have to present information on special maintenance or other steps to be taken based on the changed duration and use so as to meet the required performance standards.

IV. PROCEDURAL MATTERS

Executive Order 12291. The Department of the Interior (DOI) has examined these final rules according to the criteria of Executive Order 12291 [February 17, 1981]. OSM has determined that these are not major rules and do not require a regulatory impact analysis because they would impose only minor costs on the coal industry and coal consumers. The final rules emphasize the use of performance standards instead of design criteria which will allow operators to use the most cost effective means of achieving the performance standards.

Regulatory Flexibility Act. The DOI has also determined, pursuant to the Regulatory Flexibility Act, *5 U.S.C. 601* et seq., that these rules will not have a significant economic impact on a substantial number of small entities. The funds a small operator will have to invest in the construction of roads to comply with these final rules will only be minimally increased over what would normally be spent to ensure efficient transportation and minimal vehicle damage. The cost of the road will be defrayed by less maintenance costs for the road and vehicles. The operator will also avoid losses from a shutdown of operations due to impassable roads.

Paperwork Reduction Act. The information collection requirements in 30 CFR Parts 816 and 817 were approved by the Office of Management and Budget [OMB] under *44 U.S.C. 3507* and assigned new clearance number 1029-0048. OSM has codified the OMB approvals under the new Sections 816.10 and 817.10.

The information required by these parts will be used by the regulatory authority in monitoring, evaluating, and inspecting surface mining and the surface impacts of underground mining activities to ensure that they are conducted in a manner which preserves and enhances environmental and other values of the Act. This information requirement is mandatory.

National Environmental Policy Act. OSM has analyzed the impacts of these final rules in the Final Environmental Impact Statement OSM EIS-1: Supplement in accordance with Section 102(2)(c) of the National Environmental Policy Act of 1969 (NEPA) [*42 U.S.C. 4332*(2)(c)]. This supplement is available in OSM's Administrative Record in Room 5315, 1100 L Street, NW., Washington, D.C., or by mail request to Mark Boster, Chief, Branch of Environmental Analysis, Room 134, Interior South Building, U.S. Department of the Interior, Washington, D.C. 20240.

This preamble serves as a record of decision under NEPA. The final rules differ from the preferred alternative published in Volume III of the FEIS in the following ways:

1. References to "other transportation facilities" have been eliminated from the performance standards for roads; such facilities will be regulated as support facilities, and option encompassed by Alternative C in the FEIS;

2. Additions have been made to the list of general performance standards;

3. Certain standards which appeared in Option (1) of the proposed rules or in the preferred alternative under regulation of primary roads have been moved to Sections 816.150 and 817.150 because they are of general applicability; and

4. Clarification was made that drainage control systems may be designed to pass events other than the 10-year, 6-hour precipitation event.

The inclusion of some new provisions and the rearrangement of other provisions will result in the final rule having less potential for adverse environmental impacts than the preferred alternative. Thus, the analyses in the FEIS supplement under Alternatives A, B, C and D encompass the potential impacts from these final rules.

Agency Approval. Section 516(a) requires that, with regard to rules directed toward the surface effects of underground mining, OSM must obtain written concurrence from the head of the department which administers the Federal Mine Safety and Health Act of 1977, the successor to the Federal Coal Mine Health and Safety Act of 1969. OSM has obtained the written concurrence of the Assistant Secretary for Mine Safety and Health, U.S. Department of Labor.

LIST OF SUBJECTS

30 CFR Part 701
Coal mining, surface mining, underground mining.

30 CFR Parts 816
Coal mining, environmental protection, reporting and recordkeeping requirements, surface mining.

30 CFR Part 817
Coal mining, environmental protection, reporting and recordkeeping requirements, underground mining.

Accordingly, 30 CFR Parts 701, 816 and 817 are amended as set forth herein.

Dated: April 15, 1983.
William P. Pendley, Acting Assistant Secretary, Energy and Minerals.

PART 701 -- PERMANENT REGULATORY PROGRAM

1. In Section 701.5 the definition of road is revised to read as follows:

SECTION 701.5 - DEFINITIONS.

* * * * *

ROAD means a surface right-of-way for purposes of travel by land vehicles used in coal exploration or coal mining and reclamation operations. A road consists of the entire area within the right-of-way, including the roadbed, shoulders, parking and side areas, approaches, structures, ditches and surface. The term includes access and haul roads constructed, used, reconstructed, improved, or maintained for use in coal exploration or within the affected area of surface coal mining and reclamation operations, including use by coal hauling vehicles leading to transfer, processing, or storage areas. The term does not include pioneer or construction roadways used for part of the road-construction procedure or roads within the immediate mining-pit area.

* * * * *

PART 816 -- PERMANENT PROGRAM PERFORMANCE STANDARDS -- SURFACE MINING ACTIVITIES

2. Section 816.150 is revised to read as follows:

SECTION 816.150 - ROADS: GENERAL.

(a) Road classification system.
(1) Each road shall be classified as either a primary road or an ancillary road.
(2) A primary road is any road which is:
(i) Used for transporting coal or spoil;
(ii) Frequently used for access or other purposes for a period in excess of six months; or
(iii) To be retained for an approved postmining land use.
(3) An ancillary road is any road not classified as a primary road.

(b) Performance standards. Roads shall be located, designed, constructed, reconstructed, used, maintained and reclaimed so as to:

(1) Control or prevent erosion, siltation and the air pollution attendant to erosion by vegetating or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practice;

(2) Control or prevent damage to fish, wildlife or their habitat and related environmental values;

(3) Control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area;

(4) Neither cause nor contribute to, directly or indirectly, the violation of State or Federal water quality standards applicable to receiving waters;

(5) Minimize the diminution to or degradation of the quality or quantity of surface- and ground-water systems;

(6) Refrain from significantly altering the normal flow of water in streambeds or drainage channels;

(7) Prevent or control damage to public or private property;

(8) Use nonacid- or nontoxic-forming substances in road surfacing; and

(9) Have, at a minimum, a static factor of safety of 1.3 for all embankments.

(c) Design and construction limits and establishment of design criteria. To ensure environmental protection and safety appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, culvert size, and any necessary design criteria established by the regulatory authority.

(d) Location.

(1) No part of any road shall be located in the channel of an intermittent or perennial stream unless specifically approved by the regulatory authority.

(2) Roads shall be located to minimize downstream sedimentation and flooding.

(e) Maintenance.

(1) A road shall be maintained throughout its life to meet the performance standards of this part and any additional criteria specified by the regulatory authority.

(2) A road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as practical after the damage has occurred.

(f) Reclamation . A road not to be retained for use under an approved postmining land use shall be reclaimed immediately after it is no longer needed for mining and reclamation operations, including:

(1) Closing the road to traffic;

(2) Removing all bridges and culverts;

(3) Restoring the natural drainage patterns;

(4) Reshaping all cut and fill slopes to be compatible with the postmining land use and to complement the drainage pattern of the surrounding terrain; and

(5) Replacing topsoil and revegetating disturbed surfaces in accordance with Sections 816.22 and 816.111-816.116.

3. Section 816.151 is revised to read as follows:

SECTION 816.151 - PRIMARY ROADS.

Primary roads shall meet the requirements of Section 816.150 and the additional requirements of this section.

(a) Certification . The design and construction or reconstruction of primary roads shall be certified by a qualified registered professional engineer as meeting the requirements of this part; current, prudent engineering practices; and any design criteria established by the regulatory authority.

(b) Location.

(1) To minimize erosion, a primary road is to be located, insofar as practical, on the most stable available surfaces.

(2) Stream fords by primary roads are prohibited unless they are specifically approved by the regulatory authority as temporary routes during periods of construction.

(c) Drainage control.

(1) Each primary road shall be designed, constructed or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to, bridges, ditches, cross drains, and ditch relief drains. The drainage control system shall be designed to pass the peak runoff safely from a 10-year, 6-hour precipitation event or greater event, unless otherwise specified by the regulatory authority.

(2) Drainage pipes and culverts shall be constructed to avoid plugging or collapse and erosion at inlets and outlets.

(3) Drainage ditches shall be designed to prevent uncontrolled drainage over the road surface and embankment. Trash racks and debris basins shall be installed in the drainage ditches where debris from the drainage area may impair the functions of drainage and sediment control structures.

(4) Culverts shall be designed, installed, and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.

(5) Natural stream channels shall not be altered or relocated without the prior approval of the regulatory authority in accordance with Sections 816.41-816.43 and 816.57.

(6) Except as provided in Paragraph (b)(2) of this section, drainage structures shall be used for stream channel crossings shall be made using bridges, culverts, or other structures designed, constructed, and maintained using current, prudent engineering practice.

(d) Surfacing. Primary roads shall be surfaced with rock, crushed gravel, asphalt, or other material approved by the regulatory authority as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

(e) Maintenance. Routine maintenance for primary roads shall include repairs to the road surface, blading, filling potholes and adding replacement gravel or asphalt. It shall also include revegetation, brush removal, and minor reconstruction of road segments as necessary.

SECTIONS 816.152 through 816.176 [Removed]

4. Sections 816.152, 816.153, 816.154, 816.155, 816.156, 816.160, 816.161, 816.162, 816.163, 816.164, 816.165, 816.166, 816.170, 816.171, 816.172, 816.173, 816.174, 816.175, and 816.176 are removed.

PART 817 -- PERMANENT PROGRAM PERFORMANCE STANDARDS -- UNDERGROUND MINING ACTIVITIES

5. Section 817.150 is revised to read as follows:

SECTION 817.150 - ROADS: GENERAL.

(a) Road classification system.

(1) Each road shall be classified as either a primary road or an ancillary road.

(2) A primary road is any road which is --

(i) Used for transporting coal or spoil;

(ii) Frequently used for access or other purposes for a period in excess of six months; or

(iii) To be retained for an approved postmining land use.

(3) An ancillary road is any road not classified as a primary road.

(b) Performance Standards. Roads shall be located, designed, constructed, reconstructed, used, maintained and reclaimed so as to:

(1) Control or prevent erosion, siltation and the air pollution attendant to erosion by vegetating or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practice;

(2) Control or prevent damage to fish, wildlife or their habitat and related environmental values;

(3) Control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area;

(4) Neither cause not contribute to, directly or indirectly, the violation of State or Federal water quality standards applicable to receiving waters;

(5) Minimize the diminution to or degradation of the quality or quantity of surface- and ground-water systems;

(6) Refrain from significantly altering the normal flow of water in streambeds or drainage channels;

(7) Prevent or control damage to public or private property;

(8) Use nonacid- or nontoxic-forming substances in road surfacing; and

(9) Have, at a minimum, a static factor of safety of 1.3 for all embankments.

(c) Design and construction limits and establishment of design criteria. To ensure environmental protection and safety appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, culvert size, and any necessary design criteria established by the regulatory authority.

(d) Location.

(1) No part of any road shall be located in the channel of an intermittent or perennial stream unless specifically approved by the regulatory authority.

(2) Roads shall be located to minimize downstream sedimentation and flooding.

(e) Maintenance.

(1) A road shall be maintained throughout its life to meet the performance standards of this part and any additional criteria specified by the regulatory authority.

(2) A road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as practical after the damage has occurred.

(f) Reclamation. A road not to be retained for use under an approved postmining land use shall be reclaimed immediately after it is no longer needed for mining and reclamation operations, including:

(1) Closing the road to traffic;

(2) Removing all bridges and culverts;

(3) Restoring the natural drainage patterns;

(4) Reshaping all cut and fill slopes to be compatible with the postmining land use and to complement the drainage pattern of the surrounding terrain; and

(5) Replacing topsoil and revegetating disturbed surfaces in accordance with Sections 817.22 and 817.111-817.116.

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SECTION 817.151 - PRIMARY ROADS.

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(a) Certification. The design and construction or reconstruction of primary roads shall be certified by a qualified registered professional engineer as meeting the requirements of this part; current, prudent engineering practices; and any design criteria established by the regulatory authority.

(b) Location.

(1) To minimize erosion, a primary road is to be located, insofar as practical, on the most stable available surfaces.

(2) Stream fords by primary roads are prohibited unless they are specifically approved by the regulatory authority as temporary routes during periods of construction.

(c) Drainage control.

(1) Each primary road shall be designed, constructed or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to, bridges, ditches, cross drains, and ditch relief drains. The drainage control system shall be designed to pass the peak runoff safely from a 10-year, 6-hour precipitation event, or greater event unless otherwise specified by the regulatory authority.

(2) Drainage pipes and culverts shall be constructed to avoid plugging or collapse and erosion at inlets and outlets.

(3) Drainage ditches shall be designed to prevent uncontrolled drainage over the road surface and embankment. Trash racks and debris basins shall be installed in the drainage ditches where debris from the drainage area may impair the functions of drainage and sediment control structures.

(4) Culverts shall be designed, installed, and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.

(5) Natural stream channels shall not be altered or relocated without the prior approval of the regulatory authority in accordance with Sections 817.41-817.43 and 817.57.

(6) Except as provided at Paragraph (b)(2) of this section, drainage structures shall be used for stream channel crossings shall be made using bridges, culverts, or other structures designed, constructed, and maintained using current, prudent engineering practice.

(d) Surfacing. Primary roads shall be surfaced with rock, crushed gravel, asphalt, or other material approved by the regulatory authority as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

(e) Maintenance. Routine maintenance for primary roads shall include repairs to the road surface, blading, filling potholes and adding replacement gravel or asphalt. It shall also include revegetation, brush removal, and minor reconstruction of road segments as necessary.

SECTIONS 817.152-817.176 [Removed]

7. Sections 817.152, 817.153, 817.154, 817.155, 817.156, 817.160, 817.161, 817.162, 817.163, 817.164, 817.165, 817.166, 817.170, 817.171, 817.172, 817.173, 817.174, 817.175, and 817.76 are removed.

(Pub. L. 95-87, *30 U.S.C. 1201* et seq .)

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