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.01 Purpose. This Manual Section provides for: The inventory, functional classification, sufficiency analyses, and establishment of maintenance levels on the Bureau's roads for incorporation into the Bureau Planning System and the Transportation Facilities Management Plan; Bureau road standards; and guidelines for road project planning, design, construction, maintenance, and record keeping activities.

.02 Objectives. The objectives are to:

A. Provide adequate information for Bureau planning and operations.

B. Provide coordination with other organizations.

C. Provide safe and adequate BLM roads for users.

D. Protect scenic, cultural, and historic values and conserve resources.

E. Ensure that designs, construction and maintenance activities, and recordkeeping for road projects meet BLM needs and are performed in an acceptable manner.

.03 Authority. (See also Manual Sections 9100.03, 9101.3, 9103.03, 9104.3, and 9110.04.) The authority for providing road facilities is contained in the Federal Land Policy and Management Act of 1976 (FLPMA), as amended. Authorities affecting planning, design, construction, and maintenance of roads include:

A. Federal Highway Act of 1962, as amended.

B. Highway Beautification Act of 1965.

C. Highway Safety Act of 1966, as amended.

D. Surface Transportation Act of 1978.

E. Surface Transportation Assistance Act of 1982.

.04 Responsibility. (See also Manual Sections 9100.04, 9101.04, 9103.04, 9104.04, and 9110.04.) State Directors may issue supplemental Manual Sections on responsibilities as appropriate.

A. The Chief, Division of Engineering (Headquarters Office), commensurate with the above-cited Manual Sections, is responsible for:

1. Providing overall leadership and guidance for the road program.

2. Establishing Bureauwide road standards.

3. Developing Bureauwide systems for road inventory, road classification, sufficiency analysis, maintenance levels, and project recordkeeping.

4. Coordinating with other Bureau divisions and offices to ensure cooperation between the road program and other programs.

5. Coordinating with other Federal agencies, national interest groups, and road associations to ensure that Bureau interests are represented and that the Bureau is kept abreast of the newest developments in road-related activities.

B. The Chief, Division of Engineering Systems (Service Center), commensurate with the above-cited Manual Sections, is responsible for:

1. Providing computer capability for inventory retention, designing roads, training in computer survey, and design applications.

2. Providing guidance for road-program tasks when directed by Headquarters Officials.

3. Providing technical expertise to State Offices, when requested, for road project designs and reviews.

4. Encouraging Bureau personnel to keep abreast of the technical 'state-of-the-art' in road construction and maintenance activities by attending technical meetings and training courses, reviewing appropriate technical journals, and by distributing technical information for Field use.

5. Monitoring road construction and maintenance project plans on an informal basis and making suggestions to the originating State's Chief, Branch of Engineering, on changes required to comply with Bureau procedures and/or technically acceptable methods.

C. The Chief, Branch of Engineering (State Office), is, commensurate with the cited Manual Sections, responsible for:

1. Providing overall guidance and leadership for the road program in the State and ensuring that planning, design, construction, maintenance, and recordkeeping are performed in a timely manner and in accordance with the requirements of this Manual Section.

2. Ensuring that personnel assigned to road design and construction inspection duties receive training and are otherwise qualified.

3. Ensuring all road designs are reviewed and approved before construction work begins.

4. Coordinating with State Highway Departments, Federal Highway Administration Regional and Division officials, and various other organizations as necessary to ensure that the statewide Bureau road program interests are represented.

D. The District Manager is responsible for:

1. Ensuring that an interdisciplinary route selection team reviews each route proposal.

2. Selecting the location of a new or relocated road, using the route analysis report and Environmental Analysis.

E. The Chief, Division of Operations; or Chief, Branch of Engineering; or Area Engineer (District Office), commensurate with previously cited Manual Sections, is responsible for:

1. Accomplishing assigned road program tasks in the District in a timely manner and in conformity with this Manual Section.

2. Accomplishing inventory work, condition surveys, designs, design reviews, and assigning construction inspection tasks only to those personnel who have completed the required training and are otherwise qualified.

3. Recommending training for District personnel to ensure road design and construction inspection capabilities meet the District needs.

4. Coordinating with county road officials, State Departments of Transportation local officials, and other appropriate officials to ensure District road program interests are represented.

5. Coordinating with planning specialists to ensure road inventories and sufficiency analyses are accomplished in a timely manner for Bureau Planning System input.

6. Coordinating and reviewing with District safety coordinator(s) and/or Ranger, as appropriate, on the assessment and identification of reportable vehicle accident locations occurring on BLM roads within their respective jurisdiction (Appendix 7).

F. The Chief, Division of Resources (District Office), or if there is no Chief, Division of Resources, the appropriate Division Chief, has responsibility for:

1. Assigning staff resource specialists to the route selection review team, as may be appropriate.

2. Providing timely resource information to the appropriate Chief or engineer, cited in .04E concerning proposed route alinements.

→.05 References. (See references in Manual Sections 9100 and 9110.) ←

.06 Policy. It is Bureau policy that:

A. Bureau roads must be designed to an appropriate standard no higher than necessary to accommodate their intended functions adequately (timber hauling, administrative access, public travel); and design, construction, and maintenance activities must be consistent with national policies for safety, esthetics, protection and preservation of cultural, historic, and scenic values, and accessibility for the physically handicapped.

B. Bureau roads are for use, development, protection, and administration of public lands and resources, and, though administered by a public agency, "and generally open to use by the general public," are not public roads. Bureau roads are subject to rules and regulations of the Secretary of the Interior, and, although public use is generally allowed, roads may be closed or use restricted to fulfill management objectives such as protecting public health and safety or preserving resources. Bureau roads may also be subject to State and other Federal regulations as necessary to protect public health and safety.

Bureau roads which no longer support a management objective (timber sale, range improvement, etc.) are obliterated and revegetated. Obliterations, closures, and use restrictions, except for emergency reasons, are identified through the Bureau Planning System.

C. Continuous coordination with other agencies and public road authorities is undertaken to assure that land use, resources, and public interests are represented and that Bureau road management actions and activities are appropriate.

D. The location, design, construction, and maintenance of roads crossing public lands must comply with all applicable Federal Laws.

E. All roads controlled by the Bureau must meet appropriate Bureau road standards, whether or not they are constructed by Bureau initiative.

F. All Bureau road designers must be qualified (see .42 for requirements) and all permanent roads constructed by nongovernment entities across public lands must be designed by or under the direction of a licensed professional engineer.

G. All Bureau roads must be identified with appropriate route markers and must be signed adequately for user safety. (See Manual Section 9131.)

H. The location, design, construction, and maintenance of roads crossing public lands must consider and protect endangered species of plants and animals on the Federal List of Endangered Species.

I. Roads crossing public lands must be located, designed, constructed, and maintained so as to protect and preserve natural, historic, cultural, and scenic values.

J. The acquisition of easements for existing roads may not be initiated until a route analysis per .31 has been completed and has determined that an existing facility is sufficient for Bureau needs or, if new construction or reconstruction is required, until an approved design has been developed to a point where the actual easement can be dimensioned. (See Manual Section 2130 et seq.,for requirements.)

K. Bureau roads should be inspected both at regular intervals and immediately after events such as severe storms to determine emergency actions or priority maintenance needs. The top priority is to protect the users, reduce hazards, and prevent further deterioration of the facility.

L. The Bureau will manage the development and use of transportation facilities in energy/mineral resource development areas through the designation of access routes, corridors, or areas of avoidance; prescribed standards of construction and maintenance; restoration and protection of the environment, and provide for the maximum utilization by other resource users in a compatible and safe manner (see Appendix 6).

.07 Scope of Road Program. The management of public lands and resources is affected by continually changing social, economic, and political needs. As management objectives change, road needs also change. An effective program to provide a road system needed to support these changing management objectives must be predicated on current needs and must allocate limited resources by the most efficient method. A current inventory of facilities and a method of measuring their adequacy is basic to managing a road system. The Bureau Planning System identifies needed alterations of the existing system (such as construction of new facilities, improvements, easement acquisitions, obliteration of unneeded facilities, nonemergency road closures, and use restrictions). The Transportation System Management Plan (TSMP) (see Manual Section 9110) then establishes priorities and allocates resources necessary to implement planning system decisions in the most efficient manner.

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.1 Road Program Management. The management of the road program requires data collection, information dissemination, and inter- and intra-Bureau coordination to determine the need to construct, improve, maintain, acquire, transfer jurisdiction, restrict use, or close and obliterate certain roads. Coordination is particularly important, since almost all Bureau roads affect or are affected by resource management decisions or by road management decisions made by other organizations.

.11 Identification of Roads. The District Engineer, in consultation with the Area Manager and area staff, determines which roads are the responsibility of the Bureau. Begin with the existing Bureau transportation plan map and wilderness inventory data. Through coordination with the State Highway Department, county road departments, other Federal agencies, private owners, and any other organizations that are responsible for roads, identify all roads and categorize them by type of jurisdiction. Inform management of any jurisdictional conflict so immediate steps may be taken to resolve the conflict. Include the Access and Transportation Rights-of-Way (ATROW) specialist in the determination of road jurisdictions.

A. Map Identification. Use a map, or map overlays, to show all roads and road jurisdictions within a resource area. Identify each travelway that appears to have been repeatedly used by vehicles on the map and assign it a number (refer to .12 for route numbers).

B. Field Identification. All Bureau roads included in the Bureau Transportation System Management Plan (TSMP) are identified with route markers. (See Manual Section 9131.) A road inventoried as part of the planning process must be identified with route markers as soon as it is included in the TSMP as a BLM road.

.12 Route Numbers. Use the same route number throughout the length of the route. Do not duplicate route numbers within the State. The State Office may assign blocks of numbers to each District to assure that no duplication occurs. If desired, route numbers may be the same as project numbers, providing that assignments conform with Manual Section 1321.12C. Numbers are assigned by the area or District in which the route originates and are continued into the other resource areas or Districts if the route crosses a boundary. As Bureau roads and Bureau jurisdictional boundaries often change, a BLM administrative boundary linked logical system of assigning numbers may not be valid at a later date.

.13 Inventory. If the Bureau appears to have an interest in a road or segment of a road, complete an inventory of the physical and legal elements of the road.

.14 Federal Agencies.

A. BLM-Forest Service (USFS) Relationship. An agreement between BLM and the Forest Service provides procedures for granting and acquiring property rights by each agency from the other necessary for road use, construction, improvement, maintenance, and transferring jurisdiction of roads. (See Appendix 4.)

B. BLM-Federal Highway Administration (FHWA) Relationship. FHWA has certain responsibilities in administering Bureau road programs. The most common joint responsibilities are found in 23 U.S.C. 101, 125, 214, 308, and 402. These relate to Public Land Development Roads and Trails (PLDR&T) construction, Emergency Relief Federally Owned (ERFO) maintenance funds, providing FHWA technical expertise as cost reimbursed engineering services and highway safety. (See Appendices 1 through 3, 5, and 7.)

.15 Use of Bureau Funds on Non-Bureau Controlled Roads. Appropriated Bureau funds may not be used to construct, improve, or maintain roads not owned or controlled by the Bureau, or otherwise authorized.

.16 Functional Classification. The method and terminology recommended by the National Highway Functional Classification Study of 1968 provides guidelines for classifying Bureau roads. The Bureau has added resource roads as a category in addition to those identified in the 1968 study (as recommended by an interagency task group study on low-volume road standards, 1976-77). As Bureau roads are predominately low volume and are generally extensions of, or connectors to State or county systems, an "arterial" category does not apply to Bureau roads. Classify Bureau roads as follows:

A. Collector Roads. These Bureau roads normally provide primary access to large blocks of land, and connect with or are extensions of a public road system. Collector roads accommodate mixed traffic and serve many uses. They generally receive the highest volume of traffic of all the roads in the Bureau road system. User cost, safety, comfort, and travel time are primary road management considerations. Collector roads usually require application of the highest standards used by the Bureau. As a result, they have the potential for creating substantial environmental impacts and often require complex mitigation procedures.

B. Local Roads. These Bureau roads normally serve a smaller area than collectors, and connect to collectors or public road systems. Local roads receive lower volumes, carry fewer traffic types, and generally serve fewer uses. User cost, comfort, and travel time are secondary to construction and maintenance cost considerations. Low volume local roads in mountainous terrain, where operating speed is reduced by effort of terrain, may be single lane roads with turnouts. Environmental impacts are reduced as steeper grades, sharper curves, and lower design speeds than would be permissible on collector roads are allowable.

C. Resource Roads. These Bureau roads normally are spur roads that provide point access and connect to local or collector roads. They carry very low volume and accommodate only one or two types of use. Use restrictions are applied to prevent conflicts between users needing the road and users attracted to the road. The location and design of these roads are governed by environmental compatibility and minimizing Bureau costs, with minimal consideration for user cost, comfort, or travel time.

.17 Average Daily Traffic (ADT). For Bureau purposes, the average daily traffic (ADT) is defined as the annual traffic divided either by 365 or by the actual number of days the road is open to traffic. The amount of traffic is determined by the number of vehicles passing a point, regardless of direction of travel. ADT provides some criteria for geometric design standards and is used for justifications and in the design of structural elements. ADT is used as one of the factors in determining functional classification (see .16). In establishing ADT, consider Seasonal Average Daily Traffic (SADT). SADT, such as during hunting season, may necessiate a higher geometric design standard for the road and a seasonally adjusted higher level of maintenance. Functional classification then determines the appropriate geometric standards (see .23).

.18 Sufficiency Analysis. Bureau roads are analyzed during the detailed road inventories process to determine if they are safe and adequate. These analyses are subjective, but they provide a system for determining Bureauwide needs and for determining priority of needs between Bureau jurisdictions. These analyses do not replace public response, resource needs, and national priorities in the determination of project priority. Utilize standards from .2 in determining the sufficiency of existing roads.

.2 Road Standards. Standards are values established to ensure adequate uniformity and quality of all roads constructed on lands administered by the Bureau. These standards are applied to all Bureau or non-Bureau initiated road construction, and are also used to determine the sufficiency of existing roads. (See .18.)

.21 Development of Geometric Standards. The American Association of State Highway and Transportation Officials (AASHTO) "Policy on Geometric Design of Highways and Streets" contains a section addressing 'Special Purpose Roads', including recreation and resource development roads, that may be applicable to some of the Bureau's roads. AASHTO geometric standards for low-volume, low-speed, single-lane, and unpaved roads are not applicable to all of the Bureau's roads; hence, coordination between Headquarters Office, Field Offices, and other Federal agencies continue to be the best source of information for the development of realistic standards.

.22 Relationship Between Standards and Design Element Values. The value for curve radii, vertical curve lengths, sight distances, superelevation rates and runoff lengths are closely related to design speed. The designer must utilize design element values appropriate to the standard. See .45 for design guidelines.

GEOMETRIC STANDARDS FOR BUREAU ROADS

FUNCTIONAL CLASSIFICATION	EST 20 YR. ADT	TERRAIN	DESIGN SPEED		TRAVELWAY WIDTH		MAXIMUM GRADE	
			PREF.	MIN.	PREF.	MIN.	PREF.	MAX.
Resource	Less than 20	LEVEL & ROLLING	30	*	14	*	8	10
		Mountainous	15	*	14	*	8	16
Local	Less than 100	Level & Rolling	40	30	20	20	6	10
		Mountainous	20	15	14	12	8	15
	More than 75	Level & Rolling	50	40	24	20	6	10
		Mountainous	30	15	24	20	8	14
Collector	50 - 150	Level & Rolling	50	30	24	20	6	8
		Mountainous	30	20	20	20	8	12
	More than 100	Level & Rolling	50	40	24	20	6	8
		Mountainous	30	20	24	20	8	12

NOTE: Design speeds and surface widths chosen are limited to values shown, except that greater widths are allowed when oversize traffic justifies wider widths. Maximum acceptable grade must never be exceeded and maximum preferred grade should be exceeded only when preferred value is not feasible.

* If preferred design speed and travelway width are not feasible for specific resource roads, alternate values are determined by the Chief, Branch of Engineering (State Office).

.23 Geometric Standards. Design speeds, travelway widths, and maximum grades for various combinations of estimated average daily traffic (ADT), functional classification, (see .16), and terrain types are shown on the chart for 'Geometric Standards For Bureau Roads'.

.24 Loadings. Design roads and structures for H-20 loadings, as specified by the American Association of State Highway and Transportation Officials. Designs with heavier loadings may be used if they are compatible with adjacent roads that could be affected by overweight traffic generated on Bureau-controlled roads.

.25 Structure Widths. Bridges, culverts, tunnels, cattleguards, and other structures must have a minimum curb-to-curb or rail-to-rail width (whichever is less) of 14 feet for single lane roads and 24 feet for double lane roads, but in all cases not less than the nominal width of the adjacent travelway as measured at right angles to the travelway centerline.

.26 Vertical Clearance. Overhead vertical clearance must be a minimum of 16 feet from the travelway elevation. (See .45E8.)

.27 Horizontal Clearance. A horizontal clearance of 4 feet from edge of roadway is recommended. (See .45E8.)

.28 Traffic Control Signs. Signs and markers placed on or adjacent to the roadway to regulate, inform, or guide vehicle occupants must conform to the requirements of Manual Section 9131 and the Federal Highway Administration's Manual of Uniform Traffic Control Devices.

.29 Easement Widths. The width of easements for Bureau roads is limited to the minumum width necessary for construction and maintenance operations, and for user safety. A minimum width of 50 feet or the width of construction plus 10 feet on each side (whichever is greater) is generally required. Maintain uniform widths through varying ownerships or legal subdivisions whenever possible, rather than allowing frequent width changes.

.3 Road Project Planning. Road project planning ensures that the project provides safe and adequate service to the user and is compatible with environmental values. Perform road project planning in a manner similar to facility planning (see Manual Section 9101). In addition to the general facility planning requirements, consider the following specific requirements.

.31 Route Analysis. Perform a route analysis to identify all feasible routes that satisfy the required road function. In cases where an existing road could be acquired, the existing road is an alternative and is assessed with other feasible routes. This ensures that the selected route best meets management needs and is not a short-term solution. Individuals knowledgeable in the design of bridges and major culverts may need route analysis information.

A. Management Requirements. Identify the anticipated type and volume of road traffic. Include traffic that may be attracted to the road just because it is there (i.e., many casual users may be attracted as sightseers when a road is constructed). Identify the functional classification of the road (see .16) and specific locations (areas or points) that the road must serve. Map any areas that the road must not penetrate because of withdrawals or reservations, and identify any other special considerations or constraints on selection of feasible routes.

B. Road Standards. The District Engineer or Engineering Staff Specialist recommends appropriate road standards (see .2), for the concurrence of the District Manager.

C. Feasible Route Locations. Plot all feasible route locations (those that meet management requirements and the appropriate road standards) on a topographic map. Make route locations as wide as possible, as this gives the designer the greatest freedom in selecting the alinement to ensure free traffic flow and relative economy of construction.

D. Route Selection Review. An interdisciplinary team determines the most desirable route locations or portions thereof, and analyzes these locations to develop data for the Field review. Document the reasons for eliminating the less desirable feasible route locations (or portions thereof) from further consideration in the analysis report.

E. Field Review. Perform an in-depth Field review for each feasible location not eliminated by the office review. Prior to Field review, affected private land must be identified and appropriate permission secured to perform any needed survey work, soil borings, etc. For each feasible location, consider environmental impacts, resource value impacts, user cost, safety, construction and maintenance costs, acquisition costs (if applicable), suitability of soil and geology for construction, and any other factors relevant to choosing the best locations. If an existing road is to be acquired, consider improvement constructon costs necessary to meet appropriate road standards.

F. Report. Upon completing the Field review, the team prepares a report for management. (See Manual Section 9101.4.)

.32 Environmental Analysis (EA). Prepare an EA for the alternative locations. Determine the need for an Environmental Statement (ES).

.33 Route Selection. The District Manager, using the route analysis report and the EA, selects the location. If the route analysis report or the EA addresses special problems, the selection decision may include specific mitigation requirements or limitations that must be addressed in the design.

.34 Design Narrative. Prepare a design narrative to communicate project requirements to the designer. The design narrative includes a recap of management requirements, road standard selection, any mitigation identified in the EA, and the route analysis report and selection decision. Include a map showing the selected location (including any restrictions identified by management or in the EA) and a copy of the EA. Members of the route analysis team sign the design narrative for concurrence and it is then approved by the District Manager. Forward an informational copy of the approved design narrative to the State Office Branch of Engineering.

.35 Programming. A programming action plan is completed to provide information regarding allocation of people and funds to complete the project. Refer to Manual Section 9101.6 for guidance.

.4 Design. Design work, whether "in-house," by another agency, or by an architectural and engineering firm, commences when project planning (route analysis and selection, environmental analysis, design narrative, and action plan) is complete and the project has been programmed and funded in an approved Annual Work Plan. Work on non-Bureau road designs should normally not begin until the preliminary location has been approved and the road stipulations have been provided to the applicant.

.41 Design Technology. This subsection provides requirements and recommendations to be used in the design of Bureau roads. It does not supply technical know-how or a cookbook procedure for road design. References are cited for technical and procedural information. Design offices should acquire cited references for their technical libraries.

.42 Designer Qualifications. Any road designer assigned lead responsibility for the design of any road must have a working knowledge of highway engineering principles and procedures, and have satisfactorily completed a college or other Bureau approved road design course. The Chief, Branch of Engineering, State Office, is responsible and accountable for the technical correctness of all road designs done "in-house" in the respective State, and determines designer qualifications. All "in-house" designs must receive an independent technical review by a qualified road designer. The Chief, Branch of Engineering, reviews and determines the procedures and organizational level for such reviews. Roads designed by non-Bureau personnel are approved for technical correctness by a qualified registered engineer or another agency's design chief, and are reviewed by the Chief, Branch of Engineering, State Office, or qualified District engineering personnel, to assure that the design meets the appropriate Bureau road standards.

A. Approved Road Design Courses. Satisfactory completion of the following are acceptable for qualifying BLM road design personnel:

1. U.S. Forest Service Basic and Advanced Road Design Courses.

2. University Level Engineering Curriculum Road Design Courses.

3. Certain Bureau of Land Management Training Courses relating to road design.

4. Other Courses approved by the Chief, Division of Engineering (Headquarters Office).

B. Prequalification for Road Design Course Attendance. Prequalifications for road design course attendance include knowledge of algebra, analytic geometry, trigonometry, surveying, hydrology, hydraulics, soil mechanics, and contract administration. Most college courses have prerequisites, and courses offered by other agencies and the Bureau may also require prequalifications. Applicants for courses should be prepared to provide evidence of completion of prerequisites or should be able to pass satisfactorily a prequalification test given by the Service Center Division of Engineering.

C. Computer Design. Computer assisted design is encouraged. Designers are required to use the RDS (U.S. Forest Service computerized road design system) for computer assisted design. Access to the RDS programs is through the engineering computer application specialists at the Service Center. See Manual Section 9107 for policies and procedures for engineering computer applications.

.43 Design Coordination and Reviews. Road and bridge design should include ongoing coordination and partial review during the design process to eliminate any surprises when the final plans and specifications are distributed. Open communication between the road and bridge designers, resource specialists, and other support specialists about areas of interest affected by the road design contributes to better design. Consult watershed and visual management specialists for advice on mitigating erosion and visual scars caused by road construction. Consult fisheries biologists for stream crossings, recreation specialists for vista turnouts, foresters and range conservationists about slopes or clearing widths.

A. Environmental Reviews. Environmental reviews are coordinated with interested resource specialists during the course of design. Briefings on proposed alinements, typical sections, and design features for mitigation of environmental impacts are recommended. An appropriate time for such review is at the conclusion of the earthwork design phase. Computerized plots of plan and profile sheets, cross section plots, and mass diagrams can be helpful, as can computerized perspective plots of areas of major concern. The need for and intensity of such reviews vary with each project; however, reviews should be held to identify and resolve problems at an early date, and to ensure that the final product is substantially acceptable to all who have an interest.

B. Technical Reviews. Technical reviews are undertaken during the course of the design. There is no hard and fast rule on timing of reviews. Points at which review may be useful include: on-the-ground review of staked "P"-line centerline; review of proposed horizontal and vertical alinement plots; review of proposed typical sections; review of mass diagram and cross section plots; review of proposed drainage methods; review of proposed signs, markers, delineators, guardrails, etc.; review of solutions to uncommon design problems; final review of plans and specifications with an "on-the-ground" walkthrough.

.44 Surveys and Investigations. The type, accuracy requirements, and intensity of surveys and materials investigations is determined by the functional classification of the proposed road, land ownership, and the type of construction. Surveys and investigations supply data to the designer; therefore, the designer must work closely with the survey crew and soils/materials investigation crews to assure that the obtained data are pertinent. The designer directs the centerline survey and the location of soils/materials investigations by flagging on-the-ground locations or by plotting the proposed design alinement on large-scale topographic maps or aerial photos.

A. Aerial Surveys. (Reserved).

B. Ground Surveys. Ground surveys for road design are governed by the following guidelines:

1. Permission to Survey. The Bureau is required to obtain permission to survey or to investigate materials on lands not owned by the United States Government or not controlled by the Bureau of Land Management. Notify permittees and lessees whose operations might be affected by or which could affect survey or investigation work. Contact the District ATROW specialist and furnish information as necessary to obtain timely required permission or easements, or to notify concerned parties. Entry to commence such work occurs after the ATROW specialist has notified the designer that permission has been received and/or notices have been sent.

2. Precision of Surveys. The accuracy requirements of road surveys as shown in Illustration 1 must meet the following precision classes:

a. Collector Roads. Traverses, level circuits, and cross sections require precision class B.

b. Local Roads. Traverses not requiring easements are done to precision class C; easements require precision class B. Level circuits require precision class C, and cross sections require precision class D.

c. Resource Roads. Traverses not requiring easements are to precision class E; easements require precision class B. Level circuits require precision class E, and cross sections require precision class F.

3. Stationing. Stations are set continuously along centerline surveys at maximum 100-foot intervals, at all tangent and curve control points, at all fence or utility crossings, and at all breaks in ground profile where the centerline ground varies more than 1 foot vertically from a straight line connecting the above points. Stations should also be set along curves at a maximum of 100 feet or 4° of central arc, whichever is less.

4. Topographic Survey. Survey existing man-made features (buildings, fences, utilities, existing road, etc.) and natural features (rock outcrops, streams, swamps, lakes, trees, and cacti to be preserved, etc.) that require special design considerations or that may affect construction operations. Show these features on the construction drawings.

5. Section Corner and Boundary Ties. All road centerline traverse surveys must be tied to the Public Land survey system, using the same precision required for the traverse. Ties should be made each time the centerline traverse crosses a section line or boundary line (ownership, withdrawal, reservation, etc.). If all of the traverse is within one section, a tie should be made near each end of the centerline traverse.

6. Establishing Bearings. Astronomical observations are used to establish bearings on centerline traverses requiring easements. Establish bearings on other surveys by astronomical observation or by turning an angle from a known bearing, such as cadastral survey lines or other road survey centerlines. The basis of observed or calculated bearings is shown in the survey notes and on the construction drawings.

7. Bridges and Major Culverts. (See Manual Section 9112.)

8. Survey Notes. Survey notes are kept in a bound book using the format required by the RDS handbook.

C. Soil Surveys and Material Site Investigations. Soils surveys and material site investigations furnish necessary information on the types of soils and physical limits of the various soils or materials that will be encountered on a project. The extent of survey and sampling and testing work required depends on the type and size of the project and the character of the soils.

1. Soil Surveys. A soil survey includes a soils profile made along the proposed centerline. Establish a trial profile grade line and conduct an investigation to determine the soil horizons and limits by examining exposed soils, and using auger borings or test holes at sufficiently close intervals and of sufficient depth to identify changes in soil types. Visual classification is sufficient for lower standard roads that will not carry heavy loadings. Roads being designed for heavy loads, high volumes, or paving require more thorough and accurate sampling and testing to determine structural values. Extensive testing is advisable for projects with large earthwork volumes. Use AASHTO classification, sampling, and testing procedures for road soil surveys.

2. Materials Site Investigations. Designated materials sites are sampled and tested to determine if the volume and character of the material is adequate and if the material can meet the required specifications. Use AASHTO sampling and testing procedures for material site investigations.

3. Commercial Material Sources. Manufactured aggregates, ready-mix concrete, and other materials may be available from commercial sources. Sampling and testing for design purposes is unneccessary if the supplier furnishes required information and certification.

.45 Design Guidelines. Design guidelines reflect the Bureau philosophy for road design. Bureau roads are designed and constructed primarily to support the protection, development, use, and administration of public lands and resources, while the primary purpose for most non-Bureau roads and highways is to move traffic rapidly and economically from point to point. Bureau roads must ensure the safety of the user, but should respect the natural setting of the area. Designers of Bureau roads must be sensitive to national policy emphasizing safety, esthetics, protection and preservation of historic and cultural values, and accessability for the physically handicapped. Designers of Bureau roads must routinely incorporate these considerations in their designs.

A. Design Speed. Design speed determines the maximum degree of road curvature and minimum safe stopping, meeting, passing, or intersection sight distances. The design speed selected should be consistent with the anticipated speed users will drive on the constructed road. For example, in flat, open terrain where relatively straight alinement may induce drivers to travel relatively fast, low design speeds are unsafe.

1. Maximum Degree of Curvature. The maximum degree of curvature is determined by design speed, surface type, and the maximum superelevation rate. Using the maximum superelevation rate chosen by the designer (see .45D), and the surface type of the proposed road, the maximum allowable curvature for various design speeds is determined using the rates shown in Illustration 2.

2. Sight Distances. Sight distances are those lengths of road the driver must be able to see to execute safely various vehicle operations. Sight distance requirements affect vertical curvature and may affect horizontal alinement by requiring easier curves to avoid sight obstructions due to terrain, vegetation, or manmade features. The designer may be required to adjust the horizontal or vertical curvature, the typical cross section, or to remove vegetation or manmade features to attain the required sight distances. Sight distance calculations are based on an eye height of 3.75 feet, and object height of 0.5 feet, and an opposing vehicle height of 4.50 feet. Driver perception and reaction time of 2.5 seconds is used. Since research has not determined if braking distance is affected by surface type variations under differing weather conditions, no adjustment is made for surface type. Friction factors for braking distance assume wet pavement conditions. Illustration 3 provides minimum safe stopping, meeting, passing, and intersection sight distance design values for Bureau roads.

B. Horizontal Alinement. Alinement for higher standard roads should be as direct as possible with few curves and more than minimum sight distances. Coordinate horizontal alinement with vertical alinement to ensure user safety and comfort. Lower standard road designs should maintain a high quality alinement, but cost consideration may require that values normally required for higher standard road designs be lessened for construction economy. Accepted practices for good alinement design include the following:

1. Terrain. Fit the terrain.

2. Curve Length. Avoid short curves that provide the illusion of an angle. In open areas with long sight distances, the minimum curve length should be 500 feet for a 5 degree central angle. Where sight distance is limited, choose curves that appear to flow rather than curves that appear abrupt.

3. Reverse Curves. Avoid reverse curves separated by a short tangent. Where terrain dictates reverse curves, a tangent between curves of sufficient length to provide superelevation runoff without overlap is required.

4. Broken Back Curves. Broken back curves (two curves in same direction separated by a short tangent) should not be used. Substitute a longer curve or a compound curve.

5. Curves on Fill. If a curve must be placed on fill, keep it as flat as possible.

6. Compound Curves. Compound curves may be used to fit the alinement closer to the natural contour, or to avoid the use of broken back curves. Compound curves should be limited to three separate curves, with the center curve being the sharpest, but not over 50% sharper than adjacent curves.

7. Tangents. Long tangents, over one mile long, should be avoided, unless the road is a "section line" road.

8. Alinement. Consistent alinement is safer and is more esthetically pleasing. Sharp curves at the end of long tangents, or a sharp curve among easy curves is hazardous. Where a sharp curve must be used, it should be approached by successively sharper curves from both directions.

C. Vertical Alinement. Controls on vertical alinement include maximum grade requirements for the applicable road standard (see.23) and the vertical curve length requirements for minimum sight distances.

1. Vertical Curves. Vertical curves must be long enough to provide minimum stopping sight distance throughout the road length and to provide a road that is safe, comfortable, pleasing in appearance, and adequately drained. Vertical curves longer than required for minimum sight distance should be used to reduce earthwork volume or to provide a better visual appearance.

a. Stopping Sight Distance (SSD). Minimum stopping sight distance must be met for the entire length of all roads. Use Illustration 4 for determining the minimum vertical curve length for crest vertical curves, Illustration 5 for determining minimum vertical curve length for sag vertical curves, and Illustration 6 for determining the minimum lateral clearance to the inside of horizontal curves.

b. Passing Sight Distance (PSD). Minimum passing sight distance should be met at regular intervals on two-lane roads. Higher-volume roads require more frequent passing opportunities than lower-volume roads. Construction costs are a major factor in determining passing sight distance needs.

c. Meeting Sight Distance (MSD). Minimum meeting sight distance must be met over the entire length of all single-lane road sections. Meeting sight distance is calculated as the sum of the opposing stopping sight distances. Distance adjustment for grades may be ignored since such adjustments tend to cancel one another. Vertical curves provide safe stopping sight distances. (See Illustration 7 for determining crest vertical curve lengths.)

However, safe meeting sight distance may require that lateral clearance on the inside of horizontal curves be lengthened, or that a double-lane section be used and the lateral clearance provide minimum stopping sight distance.

2. Recommended Practices. Recommended practices for providing a desirable vertical alinement are as follows:

a. Coordinate vertical alinement and horizontal alinement to ensure a smooth flowing, safe, comfortable, and esthetically pleasing road.

b. Provide a "grass roots" grade requiring minimum earthwork. This limits costs, reduces erosion, and is more environmentally acceptable.

c. Provide a smooth vertical alinement with gradual changes consistent with class of road and character of terrain. Avoid an alinement with abrupt transitions.

d. Avoid grades less than 0.5 percent due to difficulty in providing drainage of side ditches.

e. Reduce grades around sharp curves, at intersections, at turnouts, and at turnarounds.

f. Avoid roller coaster, hidden-dip, and broken back grade lines, even though they may reduce earthwork quantities (not applicable for very low-cost roads).

g. When possible, avoid locating a vertical curve within a horizontal curve.

D. Superelevation of Curves. The selection of a maximum superelevation rate should depend on several factors: frequency and amount of ice and snow; amount and type of roadside development; and number of slow-moving vehicles. Illustration 2 provides recommended maximum superelevation rates for various design speeds. The minimum superelevation rate for any curve is not less than the normal crown rate for adjacent tangent sections. Superelevation is required on all roads with a design speed of 20 mph or greater. Bureau roads with design speeds of 20 mph or less do not require it. See Illustration 8 for runoff lengths for various superelevation rates and design speeds. One-third of this runoff occurs on the curve and two-thirds on the tangent. Increase runoff lengths where necessary to provide for better drainage or esthetics.

E. Cross Section Elements. The designer must determine the typical cross section(s). Changes in terrain, materials, visual resources, and vegetation may justify changing the typical cross section. Elements of the cross section include subgrade width, roadway crown or cross slope, side ditches, cut and fill slopes, widenings, and turnouts.

1. Subgrade Width. The subgrade width normally is equal to the travelway width plus twice the taper width of surfacing materials. For an earthen road, the travelway width is equal to the subgrade width. Extra widening for shoulder area may be provided where estimated ADT is over 400, or where special considerations justify a shoulder area. The taper of the surfacing material on surfaced roads provides a "usable" shoulder area if the tapered slope is 4:1 or flatter. The taper slope ratio should be approximately the same as the slope ratio selected for the flattest fills or side ditch inslope, but should never be steeper than 3:1. A taper slope ratio flatter than 4:1 may be provided if justified, but it should not be common practice. Select the total subgrade width to the nearest even 2 feet.

a. Considerations for designing the subgrade width include the following:

(1) Changes in subgrade soil support values may require a change of the surfacing thickness, resulting in a change in taper and subgrade width.

(2) Using curbs may affect subgrade width.

(3) In areas with steep side slopes, the typical section may be narrowed by reducing the side ditch or by forming the side ditch in the surfacing course. This may be done only if the surfacing material can be protected from saturation and if the ditch shape and dimensions are such that user safety is not compromised.

2. Road Crown. The road should be crowned to ensure proper drainage. All double-lane roads except insloped or outsloped roads must have a centerline or shoulderline crown. (See .45E3.) Place shoulderline crowns with the downstream shoulder highest in order to prevent erosion of fills. Recommended slopes are as follows:

Earth Surface	.03-.05 ft./ft.
Aggregate Surface	.02-.04 ft./ft.
Paved Surface	.02-.03 ft./ft.

3. Insloped or Outsloped Roads. A local road with a design speed of 20 mph or less may be insloped or outsloped for sections where the grade does not exceed 6%. (An insloped or outsloped road is a road without side ditches and superelevated curves.) Insloping or outsloping roads are not recommended unless the subgrade materials are resistant to erosion and traffic volume is extremely low. The slope across the roadway is the same as for normal crowns (see .45E2).

4. Cut and Fill Slopes. Cut and fill slopes provide: a structurally stable road, a safe recovery area for errant vehicles, minimum erosion susceptibility, and maximum revegetation possibility. Slopes steeper than 2:1 in level and rolling terrain or 1 1/2:1 in mountainous terrain must not be used. If the steepest allowable slopes do not intersect with the natural terrain within a reasonable distance, make adjustments in the alinement and/or grade, or provide retaining walls. Fills with heights less than the depth of the side ditch are designed and staked as a cut section to ensure continuty of the side ditch.

a. The following slopes are suggested for use on Bureau roads. Where rock excavation is encountered, cut slopes may be steeper since weathered slopes should remain stable. Cut slopes may be steeper than recommended to reduce resource, environmental, or visual impacts; however, the angle of repose of the exposed material must not be exceeded.

b. Fill widening a minimum of 2 feet is recommended where the slope is 2:1 or steeper. Fill widening must be integrated with the normal embankment. Widening for curves and/or guardrails is determined independently of fill widening, and does not supersede fill widening requirements (see .45E9). Fill widening does not require widening of surfacing courses.

RECOMMENDED EARTH SLOPES FOR BUREAU ROADS

Height of Cut or Fill (in Feet)	Level and Rolling Terrain	Mountainous Terrain
0-4	4:1	3:1
4-10	3:1	2:1
Over 10	2:1	1½:1[1]

[1]In clayey or silty soils subject to erosion. maximum slope should be limited to 2:1 or less, depending on stability of the soils.

c. Slopes can be sculptured to provide a more natural appearance. Sculpturing is recommended for major roads through areas of high visual quality. Consult with visual management specialist on the advisability of slope sculpturing. Sculpturing methods include:

(1) Flattening slope at cut-to-fill transitions;

(2) Laying back cutslopes where a cut intersects a natural drainage to provide a more natural appearance;

(3) Accenting natural ridges intersected by cuts with a steeper cut slope and wider rounding of intersection;

(4) Creating diversity in long cuts by flattening slopes to create false draws;

(5) Providing benches in rock cuts to accent natural strata;

(6) Leaving planting pockets in rock slopes;

(7) Leaving unhazardous rock outcroppings to add variety; and

(8) Varying slopes to save specimen trees, rock outcrops, or other items of visual interest, provided they do not constitute a roadside hazard.

d. The intersection of cut and fill slopes with natural ground should be rounded to improve intergration with the natural topography. Slopes are normally rounded for approximately 5 feet on each side of the intersection between the construction slope and natural ground.

e. Slope treatments include revegetation and other landscaping techniques used to stabilize slopes and retard erosion. Use serrated slopes, topsoil, mulch, and jute matting if local conditions justify them. Revegetation with native grass and wildflower species is preferred. Other landscape treatments such as tree and shrub plantings or selected thinning of adjacent vegetation can mitigate the impact of the construction in areas of high visual quality. The degree of treatment is scaled to the location and purpose of the road. Landscape treatments should be coordinated with a landscape architect.

5. Daylight Sections. Daylighting of cuts is recommended if the disturbed slope area is not excessive. To daylight a slope, use a ratio of approximately 100:1 beginning at the bottom of the side ditch. (Note: The RDS program starts daylight sections at the shoulder point, so if RDS is used for Bureau road designs, consult the engineering computer application specialists at the Service Center to determine proper coding for designing daylight sections.)

6. Side Ditches. Side Ditches (borrow ditches) are adjacent to and parallel with the roadway shoulder. They also collect the runoff from the roadway from adjacent upstream areas if no intercept ditch is provided above the cut slope. The shape and dimensions of the ditch are selected to carry adequately the anticipated runoff from a major storm without saturation of subgrade or surfacing material. As it must be safe for errant vehicles, the ditch is wider for higher design speeds and has an inslope (the slope between the subgrade shoulder and the ditch bottom) of the same ratio as the flattest fill slope. Flat bottom ditches are recommended for higher speed roads, and should have a 10-foot minimum bottom width (to facilitate normal construction equipment) and a bottom sloping slightly away from the travelway. A minimum longitudinal gradient of 0.5 percent ensures good drainage. Vary ditch sections as required to satisfy differing conditions.

7. Turnouts. Turnouts are provided on single-lane roads for opposing traffic. Turnouts normally are spaced at a maximum distance of 1,000 feet. For higher volume or higher speed roads, a maximum distance of 700 feet is recommended. Locate turnouts so they are intervisible, where needed, and where most economical. On haul roads, try to locate turnouts on the right side of the "empty" direction. The most economical locations for turnouts are usually on the low side in cuts, high side in fills, or at the transition between cuts and fills. Recommended turnout dimensions are 100 feet long with 50 feet transitions, but these may be changed to fit terrain. Width should be 10 feet. Eight feet width may be sufficient for longer turnouts. As vehicles generally come to a stop or are travelling at low speed at turnouts, the slope of the turnout may be less then the superelevation of the adjacent travelway on curve sections.

a. Turnouts can provide a second lane to satisfy safe meeting sight distance requirements around blind curves; however, the design must still provide for safe stopping sight distance. The minimum width of turnouts should be at least 10 feet, with additional width recommended for roads serving overwidth vehicles. The cross slope of the turnout is the same as the adjacent travelway cross slope. Satisfying meeting sight distance requirements by providing lateral clearance or by flattening curves is preferable to using blind-curve turnouts. Widening of the travelway with long turnouts encourages higher speeds and increases hazard.

b. Long turnouts are acceptable for double-lane roads with high traffic volumes and a mix of fast and slow-moving vehicles. They allow passing on uphill grades. Safe passing sight distance is not required if lane markings or signing prevent opposing traffic from entering the passing lane.

c. Turnarounds are provided as needed on single lane roads. Turnaround dimensions must be adequate to allow the average vehicle using the road to turn around with minimum maneuvering.

8. Vertical and Horizontal Clearance. A minimum vertical clearance of 16 feet must be provided. Clearances on already existing roads of less than 14 feet must be properly signed. (See Manual Section 9131.) A minumum horizontal clearance of 4 feet from the edge of travelway is recommended. A runoff distance that is safe, negotiable by errant vehicles, and free of hazards located adjacent to the edge of the travelway is recommended. If safe runoff distances for roads with design speeds of 30 mph and above cannot be provided, seriously consider installing guardrails or other protective devices, particularly when the road is used by the general public. (See Manual Section 9112.)

9. Curve and Guardrail Widening. Curve, guardrail, and fill widening (see .45E1) requirements are independent of one another, but widening for any cause is integrated with normal subgrade and surfacing construction operations.

a. Guidelines for determining curve widening are given in Manual Handbook, H-9113-1. Curve widening is generally placed on the inside of a curve, with the transition generally occurring at the same location as the superelevation transition.

b. A 2-foot widening of the subbase, in addition to any necessary fill or curve widening, is required wherever a guardrail is to be placed. Length of transition for guardrail widening is governed by visual acceptability.

F. Earthwork Design. BLM encourages balanced earthwork design. Waste or borrow is discouraged unless material characteristics require it. Adjust alinement, gradient, or slopes to eliminate need for waste or borrow, or utilize retaining walls, cribs, typical section adjustments, etc., to provide a balanced design. Side-cast waste is environmentally unacceptable. Any waste and borrow areas must be located out of view of the constructed roadway. Embankments should be constructed with the addition of suitable moisture to obtain density. Compact the top foot of subgrades of all roads that are to be surfaced or paved to a 95 percent maximum density as determined by AASHTO T-99.

G. Aggregate Surfacing and Pavements. (Reserved.)

H. Drainage Elements. Proper drainage is critical in road design. Protection of the road, adjacent upstream land, and downstream lands depend upon proper drainage design. This requires knowledge of both hydrology and hydraulics. When determining hydrology, the designer must also review land-use plans for upstream areas that could affect the amount of runoff during the life of the structure.

1. Bridges and Major Culverts. Design must conform to Manual Section 9112. A major culvert is a culvert or multiple installation of culverts having an end area opening of 35 square feet or more. A bridge is a crossing structure erected over a depression, or obstruction having a track or passageway for carrying traffic or other moving loads.

2. Drainage Culverts. Culverts are used for all minor drainage crossings, unless debris problems or unusually low volume justify the use of a ford. The ford must be safe and environmentally compatible. Very low volume resource roads that are outsloped or insloped are usually the only type that may utilize fords.

a. Design culverts to pass a 10-year flood without development of static head at the entrance; balance the roadway grade and culvert size to avoid serious head and velocity damage for a 25-year flood. Decrease culvert capacity for shorter return storms or increase culvert capacity for longer return storms, as required by the functional importance of the road. Use any of the standard hydrologic and hydraulic design methods, but use a second method as a check to ensure that the solution is adequate but not extravagant. Special consideration may be necessary for debris passage.

b. The type of culvert is specified in the design. If possible, specify alternate acceptable culvert materials.

c. An 18-inch diameter or equivalent size is the smallest culvert normally used. Smaller sizes are difficult to clean and maintain.

d. Minimum recommended cover over a culvert is 12 inches or one-half the diameter, whichever is greater.

e. Culverts carrying runoff from one side of the road to the other between natural drainages are spaced as shown in Illustration 9, unless local experience dictates otherwise.

f. The inlet and outlet treatments of culverts include drop inlets, downspouts, energy dissipators, flared ends, headwalls, rip-rap, paving, and beveled ends. Choose an end treatment that ensures that the culvert is properly protected, erosion is retarded, and the protrusion of the culvert is not a hazard to errant vehicles.

g. Culverts in small drainages should generally be alined with the natural channel and with a gradient that maintains the natural drainage velocity so sedimentation or erosion is not increased. Culverts used as laterals are skewed to form an entrance angle of 45 to 60 with the side ditch, and have a gradient equal to or slightly greater than the approach ditch gradient.

h. Culverts may be protected from debris by deflectors, racks, cribs, raisers, basins, spillways, or other controls. Incorporate debris protection as necessary.

i. Culverts must be designed for minimum impact on aquatic life. Open bottom shapes should be used if it is necessary to maintain the character of the streambed. If a closed bottom shape is used, install the culvert so the gradient does not exceed one-half percent, placing the invert at least 6 inches below the natural streambed, and fill the bottom with rock and gravel to simulate natural steambed characteristics. Any construction in fish-bearing streams must be accomplished during the time of year when the least aquatic environmental impact will occur. (See Manual Sections in the 6700 series.)

3. Ditches and Channels.

a. Intercept ditches are used to intercept and carry sheet runoff to natural drainages before it can reach the roadway. A gradient of about 0.5 percent is recommended. Design intercept ditches to intercept and concentrate sheet runoff so the ditch does not erode.

b. Natural channels must be avoided when possible. If channel changes must be made, maintain the natural stream depth, width, general flow conditions, and characteristics as closely as possible. Use appropriate protective devices, such as gabions, deflectors, and plantings. Vegetation near banks can provide natural sediment filters, shade, and shadows. Vegetation on slopes adjacent to channels reduces erosion and provides a natural sediment filter. (See Manual Sections in the 6700 series.)

4. Fords and Dips. Fords and dips may be used if they are not a hazard to traffic. Design fords and dips to provide safe stopping sight distance. The roadway must be stable and self cleaning. Place signs and flow depth markers to protect users. Design dip-culvert combinations to ensure that the stream gradient does not cause erosion or sedimentation; provide slope protection. Dip-culverts are to be considered as bridges or major culverts for design purposes and must comply with Manual Section 9112.

5. Subsurface Drainage. Subsurface drainage is required to prevent failures due to excess moisture in the subgrade or subbase. Intercept or drain water with subdrains if necessary. Prevent runoff from saturating the subgrade or subbase material by providing proper drainage.

I. Cattleguards. Cattleguards are placed normal to the roadway centerline on the finished roadway grade. If the road will be surfaced in the future, place the cattleguard at the final design elevation, with a 50-feet temporary ramp on each side to provide a smooth crossing. Use Bureau standard designs for all cattleguards. Cattleguard widths must meet requirements of Manual Section 9113.25.

J. Signs and Markers. Each road design must include provisions for traffic control signing. Signs and markers must be in place prior to opening the road to traffic. These must meet the requirements of Manual Section 9131. Roads open to traffic during construction must be signed in accordance with the Federal Highway Administration's Manual on Uniform Traffic Control Devices.

.46 Specifications, Drawings, and Cost Estimates. Specifications and construction drawings must describe the location, design, and work to be accomplished in sufficient detail to ensure the project is constructed according to the designer's intent and that materials and methods of construction meet or exceed the quality required by the design standards. The cost estimate is the fair value of the proposed work.

A. Specifications. BLM uses the current edition of the Federal Highway Administration's (FHWA) Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects for construction of roads and bridges, if appropriated funds are used for the project. Section 100 of the FHWA specifications, "General Requirements" is amended using BLM Form 9110-9, Road Construction Special Provisions. Roads constructed using other than appropriated funds such as timber sale roads, must be constructed according to specifications designated by the respective State Office or in Supplements to Manual Sections 5400 or 9113.

B. Drawings. Drawings are prepared according to Manual Section 9102, regardless of type of funds used for project construction. See Manual Section 9112 for bridge and major culvert drawings.

C. Cost Estimates. Prepare cost estimates in accordance with Manual Section 9102, regardless of type of funds used for project construction. Cost allowances for timber sale roads are prepared in accordance with appropriate cost schedules.

.47 Permits. Permits may be required whenever a Bureau road intersects with a Federal-Aid, county, or municipal highway. Section 404 permits may be required for stream crossings or construction in streambeds. (See Manual Section 9112.) Determine permit requirements and secure any needed permits in a timely manner in order to prevent construction delays. Permits that contain provisions affecting construction methods or schedules must be addressed in the plans and specifications.

.5 Construction. (See Manual Section 9103.)

.51 Staking. Construction stakes are placed as precisely as required for the design survey. (See .44B2.)

.52 Signing. Roads under construction are required to be signed according to the current edition of the FHWA's Manual of Uniform Traffic Control Devices.

.53 Inspections. Construction inspection must be done by qualified inspectors. (See Manual Section 9103.) Use FHWA's Construction Manual for Use with FHWA Standard Specifications for inspection guidance if FHWA specifications are used for construction.

→ .6 Maintenance. (See Manual 9104.)

.61 Maintenance Management. Follow guidance in Manual Section 9104 for the establishment of a maintenance management program.

A. Maintenance Levels. Based upon functional classification (.16) and resource management needs, each road will be assigned a maintenance level. Maintenance levels may vary from year to year as identified resource management needs change.

Glossary of Terms. (See Glossary of Terms in Manual Section 9100.) ←

9113 - ROADS

Precision Requirements for Road Surveys

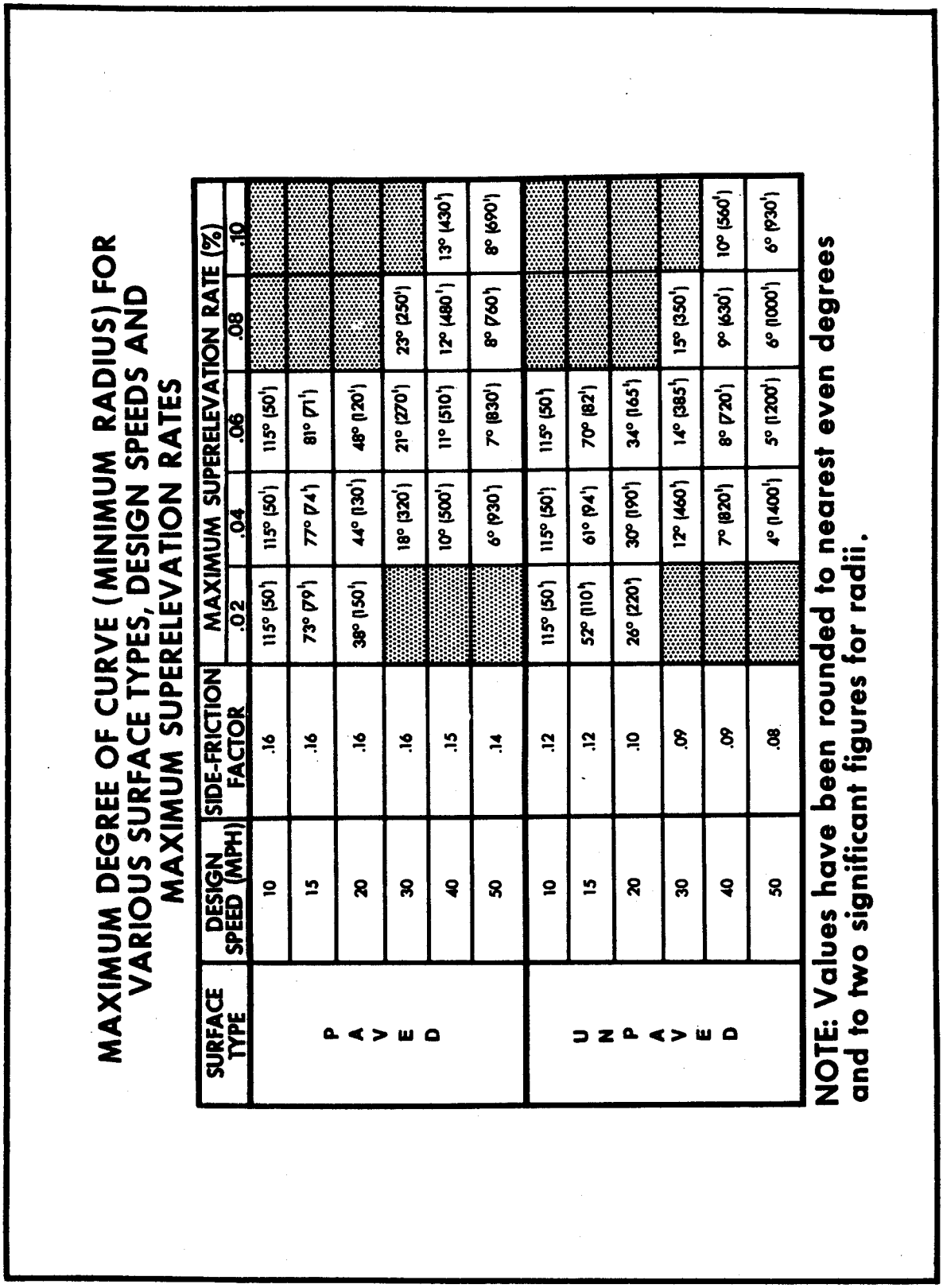
PRECISION REQUIREMENTS FOR ROAD SURVEYS

ITEMS	A	B	C	D	E	F
			TRAVERSES			
Minimum linear closure	1/5000	1/3000	1/1000	1/600	1/300	1/100
Distance accuracy	1/7500	1/4500	1/1500	1/900	1/450	1/150
Angular accuracy *(use least value)*	1/7500. 30 sec. x $\sqrt{N}$ or 8.0 sec. per station. 2 sets, direct and reverse. 20 sec. rejection limit.	1/4500. 1 min. x $\sqrt{N}$ or 15 sec. per station. 1 set, direct and reverse. 1 min. rejection limit.	1/500. 90 sec. x $\sqrt{N}$ or 20 sec. per station.	1/900. If forward and backward bearings of tangents differ by more than 30 min., bearings must be computed as deflection angle traverse.	1/450. If forward and backward bearings of tangents differ by more than 1 deg., bearings must be computed as deflection angle traverse.	1/150
			LEVEL CIRCUITS			
Vertical error of closure on bench mark. *(use least value)*	0.05 $\sqrt{M}$ or 0.0015 foot per station in level circuit.	0.1 $\sqrt{M}$ or 0.0025 foot per station in level circuit.	0.25 $\sqrt{M}$ or 0.005 foot per station in level circuit.	1.0 $\sqrt{M}$ or 0.02 foot per station in level circuit.	2.0 $\sqrt{M}$ or 0.04 foot per station in level circuit.	4.0 $\sqrt{M}$ or 0.1 foot per station in level circuit.
			CROSS SECTIONS			
Allowable deviation of line projection from a true perpendicular to tangents and a true bisector of angle points.	± 2°	± 2°	± 3°	± 3°	± 4°	± 4°
Topography measurements must be taken so that variations in ground from a straight line connecting the cross section points will not exceed:	1.5'	1.5'	2.0'	2.0'	2.5'	3.0'
Horizontal and vertical accuracy, in feet, or percentage of horizontal distance measured from traverse line, whichever is greater.	0.1' or 0.5%	0.1' or 0.5%	0.2' or 1.0%	0.2' or 1.5%	0.3' or 2.0%	0.4' or 3.0%
			SLOPE STAKES, REFERENCES, AND CLEARING LIMIT STAKES			
Horizontal and vertical accuracy, in feet, or percentage of horizontal distance measured from centerline or reference stake whichever is greater.						
a. Slope reference stakes and slope stakes.	0.1'	0.1' or 0.5%	0.2' or 1.0%	0.2' or 1.5%	0.2' or 1.5%	0.3' or 2.0%
b. Clearing limits	1.0'	1.0'	1.0'	1.5'	1.5'	2.0'

N - Number of turns (angles).

M - Miles (length in miles) total out and back.

Maximum Curvature and Recommended Superelevation Rates



MAXIMUM DEGREE OF CURVE (MINIMUM RADIUS) FOR VARIOUS SURFACE TYPES, DESIGN SPEEDS AND MAXIMUM SUPERELEVATION RATES

SURFACE TYPE	DESIGN SPEED (MPH)	SIDE-FRICTION FACTOR	MAXIMUM SUPERELEVATION RATE (%)				
			.02	.04	.06	.08	.10
PAVED	10	.16	115° (50')	115° (50')	115° (50')		
	15	.16	73° (79')	77° (74')	81° (71')		
	20	.16	38° (150')	44° (130')	48° (120')		
	30	.16		18° (320')	21° (270')	23° (250')	
	40	.15		10° (500')	11° (510')	12° (480')	13° (430')
	50	.14		6° (930')	7° (830')	8° (760')	8° (690')
UNPAVED	10	.12	115° (50')	115° (50')	115° (50')		
	15	.12	52° (110')	61° (94')	70° (82')		
	20	.10	26° (220')	30° (190')	34° (165')		
	30	.09		12° (460')	14° (385')	15° (350')	
	40	.09		7° (820')	8° (720')	9° (630')	10° (560')
	50	.08		4° (1400')	5° (1200')	6° (1000')	6° (930')

NOTE: Values have been rounded to nearest even degrees and to two significant figures for radii.

9113 - ROADS

Minimum Sight Distances

WET PAVEMENT
MINIMUM STOPPING SIGHT DISTANCES

DESIGN SPEED (MPH)	ROAD GRADE (IN %)				
	+16 to +10	+10 to +3	+3 to -3	-3 to -10	-10 to -16
10	45	50	50	50	55
15	75	75	80	85	90
20	115	120	125	135	150
30	180	190	200	225	240
40	235	260	275	325	375
50		320	350	450	

WET PAVEMENT
MINIMUM INTERSECTION SIGHT DISTANCE

DESIGN SPEED (MPH) OF MAJOR ROAD	10	15	20	30	40	50
MINIMUM INTERSECTION SIGHT DISTANCE	100′	150′	200′	300′	400′	500′

9113 - ROADS

Minimum Sight Distances

MINIMUM PASSING SIGHT DISTANCE

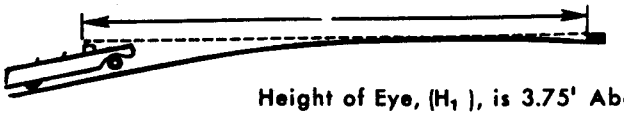
DESIGN SPEED (MPH)	10	15	20	30	40	50
MINIMUM PASSING SIGHT DISTANCE	500′	700′	850′	1100′	1500′	1800′

MINIMUM MEETING SIGHT DISTANCE

DESIGN SPEED (MPH)	10	15	20	30
MINIMUM MEETING SIGHT DISTANCE	100′	160′	250′	400′

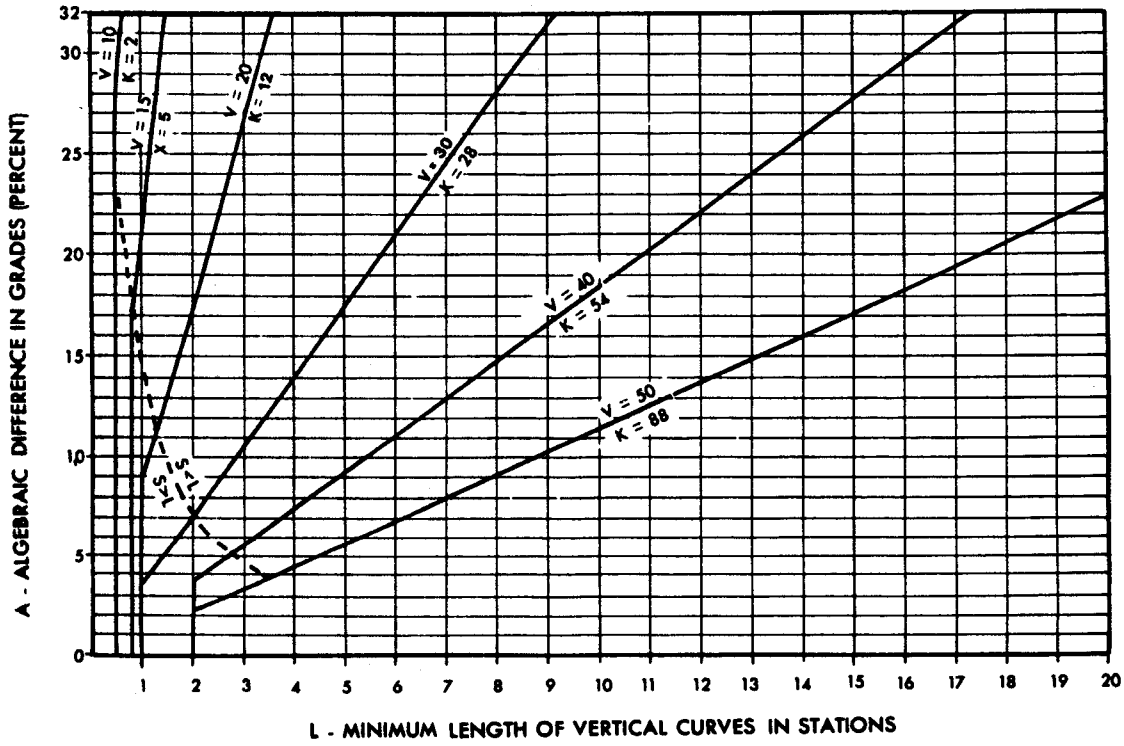
Crest Vertical Curves Based on Minimum Stopping Sight Distance

CREST VERTICAL CURVES BASED ON MINIMUM STOPPING SIGHT DISTANCE



Height of Eye, (H_1), is 3.75' Above Roadway
Height of Object, (H_2), is 0.50' Above Roadway

L=LENGTH OF VERTICAL CURVE IN FEET A=ALGEBRAIC DIFFERENCE IN GRADE(%) S=SIGHT DISTANCE IN FEET	DESIGN SPEED M.P.H. (V)	MINIMUM SIGHT DISTANCE, (S) REQUIRED, IN FEET	K=RATE OF VERTICAL CURVATURE, LENGTH PER PERCENT OF A	MINIMUM LENGTH OF VERTICAL CURVE WHEN S>L
$L = \frac{AS^2}{200(\sqrt{H_1}+\sqrt{H_2})^2}$ WHEN S<L $S = 37.4\sqrt{L/A}$	10	50	2	50
	15	80	5	80
	20		12	100
$K = \frac{L}{A}$ or $L = KA$ Rounded for Design	30	200	28	100
	40	275	54	200
	50	350	88	200



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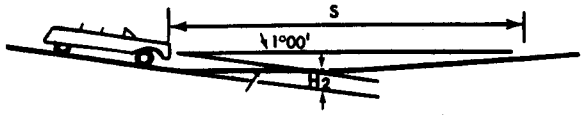
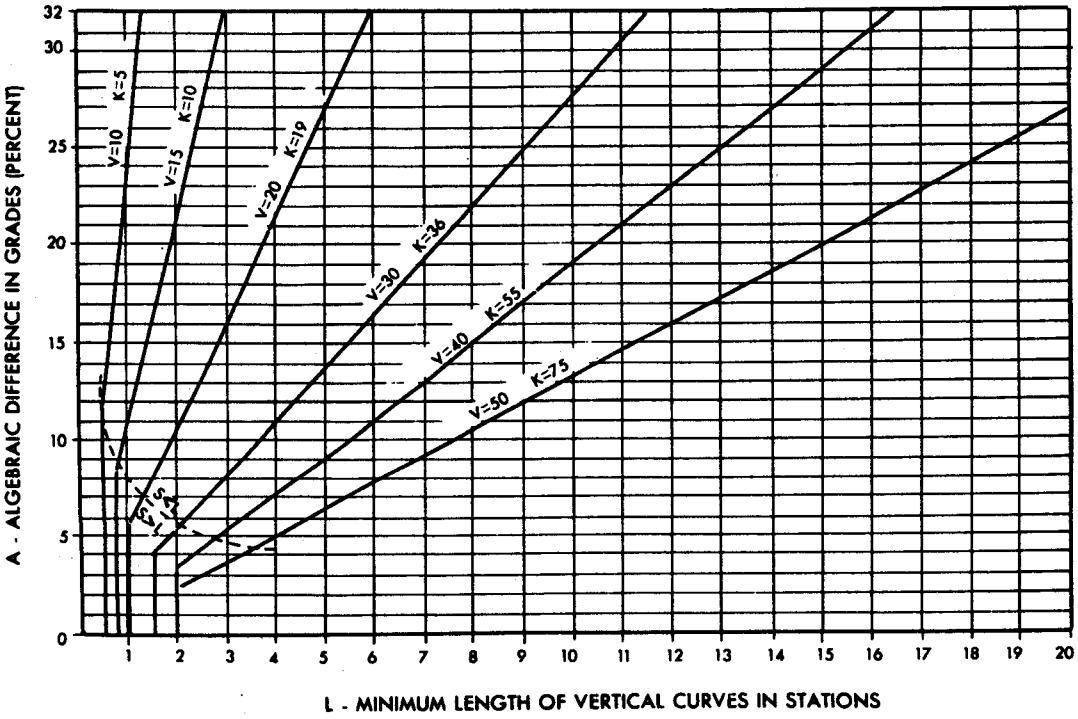
Sag Vertical Curves Based on Minimum Stopping Sight Distance

SAG VERTICAL CURVES BASED ON MINIMUM STOPPING SIGHT DISTANCE



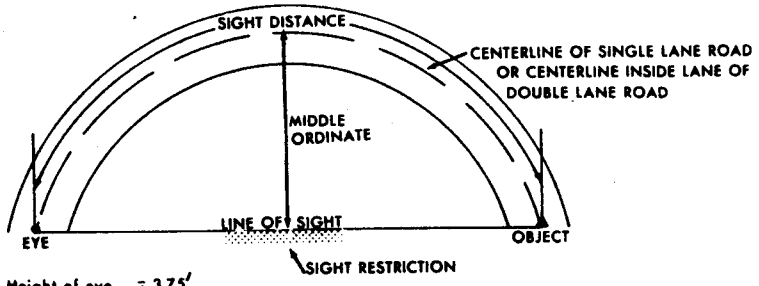
HEIGHT OF HEADLAMP ABOVE ROADWAY (H_2), IS 2.00 FEET

L=LENGTH OF VERTICAL CURVE IN FEET A=ALGEBRAIC DIFFERENCE IN GRADE(%) S=SIGHT DISTANCE IN FEET	DESIGN SPEED M.P.H. (V)	MINIMUM SIGHT DISTANCE (S) REQUIRED, IN FEET	K=RATE OF VERTICAL CURVATURE LENGTH PER PERCENT OF A	MINIMUM LENGTH OF VERTICAL CURVE WHEN S>L
$L = \frac{AS^2}{200\,H_2 + 3.5S}$ When S<L	10	50	5	50
	15	80	10	80
	20	125	19	100
$K = \frac{L}{A}$ OR $L = KA$ Rounded for Design	30	200	36	150
	40	275	55	200
	50	350	75	200

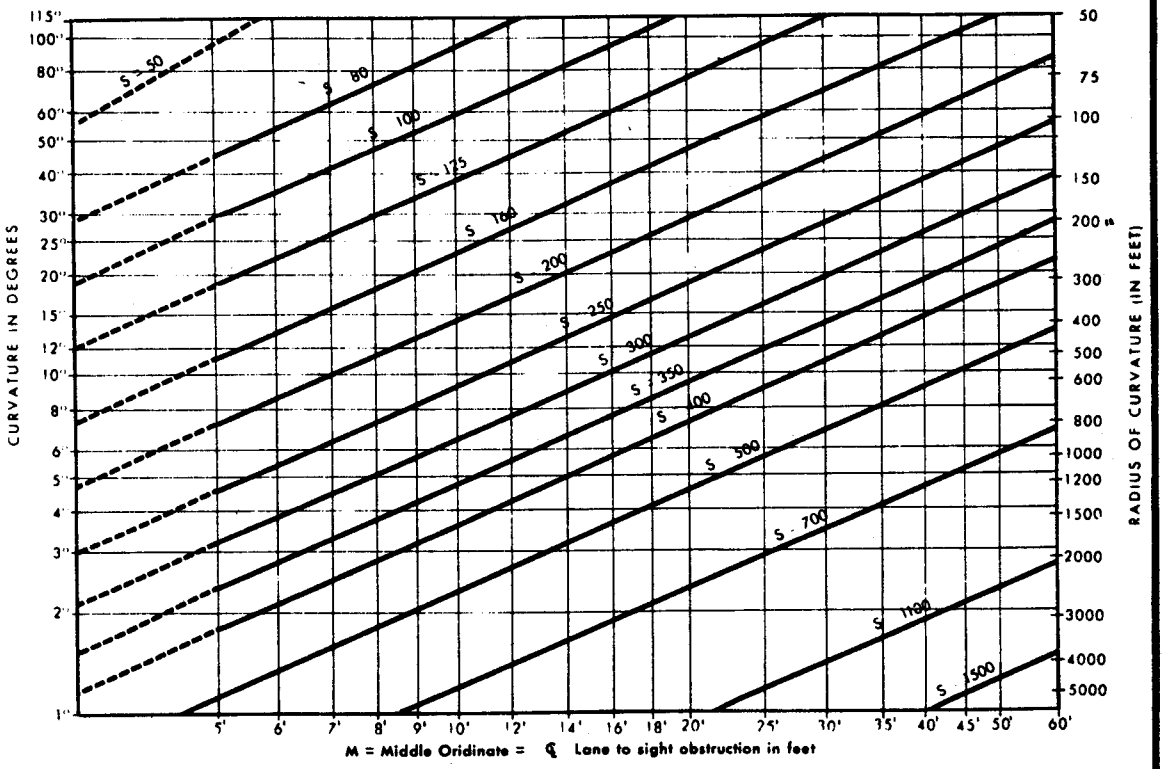


Sight Distance Provided by Lateral Clearance and Curve Combinations

SIGHT DISTANCES PROVIDED BY VARIABLE LATERAL CLEARANCE AND CURVE COMBINATIONS



Height of eye = 3.75′
Height of object = 0.5′ — stopping sight distance
= 4.5′ — meeting sight, passing sight distance



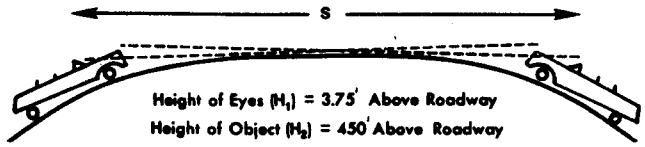
INSTRUCTIONS: Single lane road — determine minimum meeting sight distance required (See illustration 3) and select combination of horizontal curve and middle ordinate that intersect at or below the respective diagonal sight distance line on the chart. If combination is not feasible, provide turnout throughout length of curve and check to see that required stopping sight distance (See illustration 3) is provided, and if not, adjust curvature and/or middle ordinate as required.

Double lane road — Determine minimum stopping sight distance required (See illustration 3) and select combination of horizontal curve and middle ordinate that intersect at or below the respective diagonal sight distance line on chart. Use similar method to determine if minimum passing sight distance (See illustration 3) is provided. Make adjustments in curvature and/or middle ordinate if minimum passing sight distance is desired.

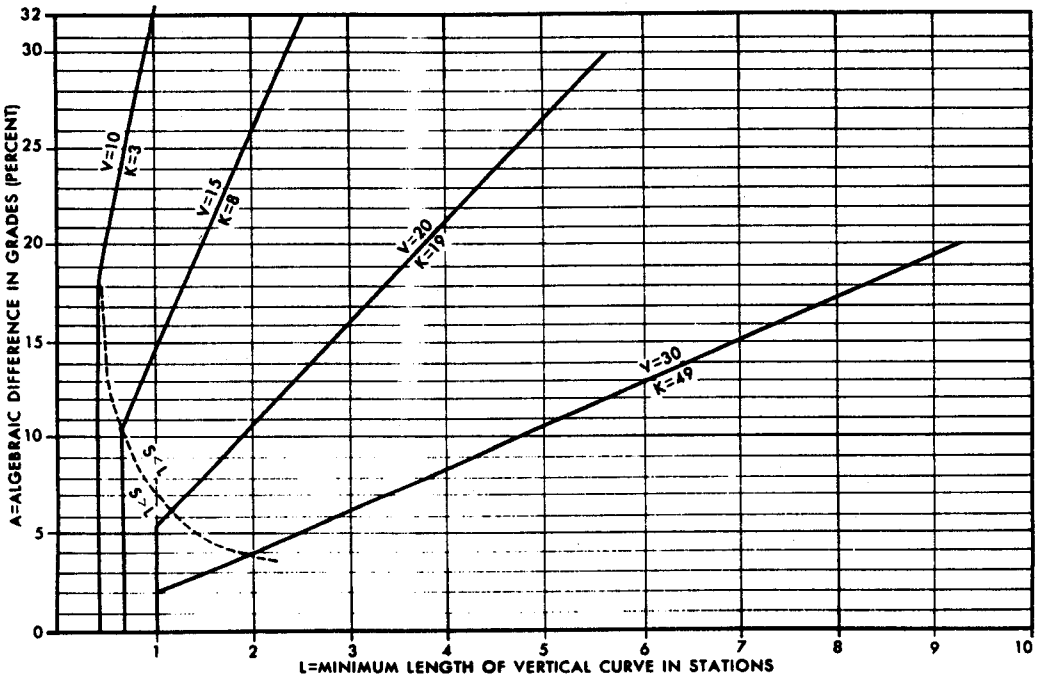
Crest Vertical Curves Based on Minimum Meeting Sight Distance

CREST VERTICAL CURVES BASED ON MINIMUM MEETING SIGHT DISTANCE

(Single Lane Roads Only)



L=LENGTH OF VERTICAL CURVE IN FEET A=ALGEBRAIC DIFFERENCE IN GRADE (%) S=SIGHT DISTANCE IN FEET		DESIGN SPEED M.P.H. (V)	MINIMUM SIGHT DISTANCE, (S) REQUIRED, IN FEET	K=RATE OF VERTICAL CURVATURE LENGTH PER PERCENT OF A	MINIMUM LENGTH CURVE WHEN S>L
$L=\frac{AS^2}{200(\sqrt{H_1}+\sqrt{H_2})^2}$	WHEN S<L	10	100	3	50
		15	160	8	80
$K=\frac{L}{A}$ or $L=KA$	Rounded for Design	20	250	19	100
		30	400	49	100



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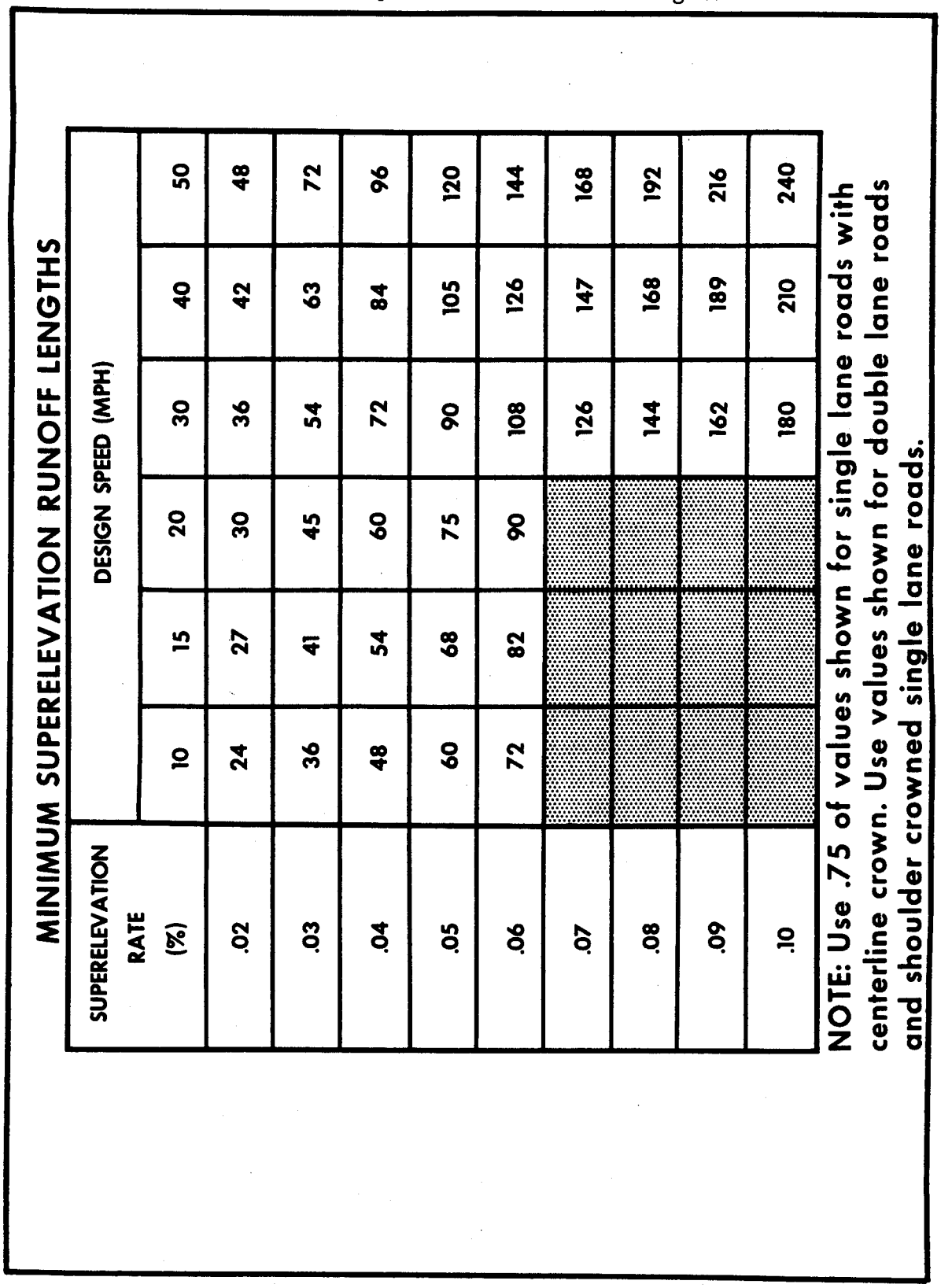
Minimum Superelevation Runoff Lengths



MINIMUM SUPERELEVATION RUNOFF LENGTHS

SUPERELEVATION RATE (%)	DESIGN SPEED (MPH)									
	10	15	20	30	40	50				
.02	24	27	30	36	42	48				
.03	36	41	45	54	63	72				
.04	48	54	60	72	84	96				
.05	60	68	75	90	105	120				
.06	72	82	90	108	126	144				
.07				126	147	168				
.08				144	168	192				
.09				162	189	216				
.10				180	210	240				

NOTE: Use .75 of values shown for single lane roads with centerline crown. Use values shown for double lane roads and shoulder crowned single lane roads.

Spacing for Drainage Laterals

Recommended Spacing for Lateral Drainage Culverts in Various Soil Types*

Soil Types	Erosion Index 10	20	30	40	50	60	70	80	90	100
Silty sands, sand-silt mixtures, inorganic silts and very fine sands, silty or clayey fine sands.	X	X								
Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts, organic silts and organic silty clays or low plasticity, inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.			X	X						
Organic clays of medium to high plasticity, organic silts, inorganic clays of high plasticity, fat clays, clayey sands, sand-clay mixtures, silty-gravels, gravel-sand-silt mixtures.					X	X				
Clayey gravels gravel-sand-clay mixtures.							X			
Clean sands or clean gravelly sands.								X	X	
Clean gravels or sand-gravel mixtures.										X

* Unified Soil Classification

Gradient in percent	Erosion Index	Recommend Spacing in Feet 10	20	30	40	50	60	70	80	90	100
2		900	1225								
3		600	815	1070	1205						
4		450	610	800	905	1015					
5		360	490	640	725	810	865	1000			
6		300	410	535	605	675	720	835	1010		
7		255	350	455	515	580	620	715	865	1030	1210
8		225	305	400	450	505	540	625	755	900	1055
9		200	270	355	400	450	480	555	670	800	940
10		180	245	320	360	405	435	500	605	720	845
11		165	220	290	330	370	395	455	550	655	770
12		150	205	265	305	340	360	415	505	600	705
13		140	190	245	280	310	335	385	465	555	650
14		130	175	230	260	290	310	355	430	515	605
15		120	165	215	240	270	300	335	405	480	565
16		115	155	200	225	255	280	310	380	450	530

This table is based on rainfall intensities of 1 to 2 inches per hour following in a 15 minute period with an expected interval of recurrence of 25 years. For areas having intensities other than 1 to 2 inches per hour, divide values in the table as follows:

Rainfall Intensity	Divisor
2 - 3 inches per hour	1.50
3 - 4 " " "	1.75
4 - 5 " " "	2.00
Less than 1 inch per hour	Whatever the intensity (.75, .85, etc.)

BLM-FHWA Interagency Agreement, Emergency Relief Administration

MEMORANDUM OF AGREEMENT BETWEEN THE BUREAU OF LAND MANAGEMENT AND THE FEDERAL HIGHWAY ADMINISTRATION FOR THE ADMINISTRATION OF EMERGENCY RELIEF AVAILABLE UNDER 23 U.S.C. 125 FOR FEDERAL ROADS OFF THE FEDERAL-AID SYSTEM

The purpose of this agreement is to establish interagency procedures through which the Federal Highway Administration (hereinafter referred to as the FHWA) and the Bureau of Land Management (hereinafter referred to as the BLM) will administer emergency relief for Federal roads not on the Federal-aid system available under 23 U.S.C. 125, and

WHEREAS, the Secretary of Transportation (hereinafter referred to as the Secretary) acting through the FHWA, is authorized to expend monies from an emergency fund authorized under 23 U.S.C. 125 for the repair or reconstruction of public lands development roads and trails which the Secretary shall find have suffered serious damage as the result of a natural disaster over a wide area or catastrophic failure from any cause (such finding actions being referred to, hereinafter, as Finding), and

WHEREAS, authority to make a Finding for Federal agencies for public lands development roads and trails as defined in 23 U.S.C. 101(a) has been delegated to the Regional Federal Highway Administrator in Regions 8 and 10 and the Regional Engineer in Region 15 (these Regional Administrators and Regional Engineer being referred to, hereinafter, as the RFHA), and

WHEREAS, the BLM may from time-to-time need emergency relief for public lands development roads and trails not on the Federal-aid system, (such roads and trails being referred to collectively, hereinafter, as Federal roads),

NOW WITNESSETH that the BLM and FHWA do hereby mutually agree as follows:

1. GENERAL

   a. For the purposes of this agreement, roads commonly called "Land Management Roads" by the BLM and roads and trails on the revested Oregon and California Railroad and reconveyed Coos Bay Wagon Road Grant Lands in Oregon (commonly called O and C Lands) will be considered to be public lands development roads and trails.

   b. The policies, procedures, and program guidance established in the Federal-Aid Highway Program Manual, Volume 6, Engineering and Traffic Operations; Chapter 9, Special Programs; Section 16, Emergency Relief Program; Subsection 2, Procedures for Federal Agencies for Federal Roads (hereinafter referred to as FHPM 6-9-16-2) will be followed in the administration of emergency relief between the FHWA and the BLM for Federal roads not on the Federal-aid system. By attachment as Appendix A, FHPM 6-9-16-2 is hereby made a part of this agreement.

c. A Finding of eligibility for emergency relief requires that serious damage has occurred to Federal roads as the result of (1) a natural disturbance causing serious damage to roads over a wide area, or (2) a catastrophic failure. It is understood that the term "wide area" can include areas outside lands administered by the BLM and can include roads other than Federal roads.

d. Emergency funds are available for reimbursement of costs directly attributable and allocable to preliminary engineering, construction engineering, and repair/reconstruction costs on individual emergency relief projects.

e. Coordination between FHWA and the BLM will be as follows for emergency relief actions under the terms of this agreement:

(1) The BLM State office located in: Billings, Montana; Santa Fe, New Mexico; Phoenix, Arizona; Salt Lake City, Utah; Reno, Nevada; Sacramento, California; Cheyenne, Wyoming; and Denver, Colorado, will coordinate with FHWA Region 8.

(2) The BLM State office located in: Portland, Oregon (for Oregon and Washington); Boise, Idaho; and Anchorage, Alaska, will coordinate with FHWA Region 10.

f. The RFHAs and BLM State Directors (hereinafter referred to as SD) will designate emergency relief coordinators (hereinafter referred to as ERFO Coordinators) in their respective regions and areas to be responsible on a continuing basis for the overall coordination of emergency relief.

g. Projects may be funded by a combination of emergency relief monies covering work eligible for emergency relief and other funds covering work not eligible for emergency relief.

h. The Director, Office of Federal Highway Projects in FHWA Regions 8 and 10 or the Regional Engineer for FHWA Region 15 will be the contracting officer for any project for which FHWA agrees to perform construction engineering regardless of whether the project is financed with emergency relief funds or emergency relief funds combined with other funds.

i. All emergency relief work will be subject to the inspection and approval of the RFHA.

2. NOTIFICATION, DAMAGE ASSESSMENT, AND FINDING

a. Notification - When it appears that damage or destruction of a nature, and from an event, that will justify repair or reconstruction with emergency relief monies is occurring or has occurred to Federal roads, the BLM ERFO Coordinator will promptly notify the FHWA ERFO Coordinator by telephone that the BLM intends to apply for emergency relief and request that a Finding be made. The telephone notification will be followed by a written notification from the SD to the RFHA.

(1) The decision to notify FHWA will be made by the SD. This decision will be made only after it is fairly clear that the conditions described in Section 1c have developed.

(2) In addition to a statement that the BLM intends to apply for emergency relief and a request that a Finding be made, the notification should describe (a) the BLM administered land(s) where damage has occurred; (b) occurrence date(s); (c) the general location and extent of affected BLM area(s); (d) type(s) of damage; (e) a rough estimate of the cost of repair and reconstruction; (f) a general indication of the extraordinary character of the natural disturbance, and (g) if readily available, an indication of the extent of areas affected outside BLM administered lands.

(3) The notification will be made during or as soon as possible after the occurrence.

b. Acknowledgment by FHWA - The RFHA will acknowledge each notification in writing. The acknowledgment will provide basic coordination, eligibility, damage assessment, and Finding information and procedures required by Paragraph 7b of FHPM 6-9-16-2.

c. Field Coordination for Damage Assessment

(1) The RFHA and SD will assign BLM and FHWA individuals to be responsible for field interagency coordination and field coordination between the BLM and FHWA, these individuals being referred to hereinafter as Field Coordinators.

(2) The SD and RFHA will assign BLM and FHWA personnel to cooperate with Field Coordinators in making a field survey of damage for preparation of a report and in making detailed site inspections in accordance with the provisions of Section 2d and Section 2f, respectively.

(3) SD and FHWA Field Coordinators will arrange joint briefing meetings with BLM and FHWA inspection personnel prior to starting damage survey work.

(4) Inspection teams consisting of BLM and FHWA personnel will be assigned jointly by the BLM and FHWA Field Coordinators at the briefing meetings. Inspection procedures and eligibility criteria will be explained to inspection personnel by the Field Coordinators at these meetings.

(5) Two maps depicting designated Federal roads will be provided by the BLM to each inspection team at the time briefing meetings are held. Additional maps will be made available, as needed, for other agencies which may be involved in emergency relief operations.

(6) During the period when damage surveys are in progress, Field Coordinators will manage their time so as to give top priority to the tasks of answering eligibility questions and ensuring consistency between survey teams, making advance arrangements for briefing sessions and subsequent damage inspections, collecting information for preparation of the field report, making changes in damage survey teams as necessary, and ensuring the general efficiency of emergency relief operations.

d. Field Report

(1) FHWA and BLM personnel assigned per Sections 2c(1) and 2c(2) will promptly make a field survey of damage and cooperate in the preparation of a field report. The field report will contain information required by Paragraph 7c of FHPM 6-9-16-2 except that if the President has made a Major Disaster Declaration under the Disaster Relief Act of 1974 (P.L. 93-288), detailed information on the extraordinary nature of the natural disturbance is not required.

(2) Unless unusual conditions prevail, it will be the intent of FHWA and the BLM to complete the field report within 3 weeks after the notification.

e. Finding

(1) Using the field report and any other information he deems appropriate, the RFHA will issue a Finding to the SD stating that repair or reconstruction of Federal roads is (Affirmative Finding) or is not (Negative Finding) eligible for emergency relief.

(2) If an Affirmative Finding is made, the RFHA will delineate the area(s) covered by such Finding. The RFHA may amend the initial Affirmative Finding to cover additional area(s) if supplementary data to that in the field report is provided to, and is acceptable to, the RFHA to support such action.

f. Detailed Damage Site Reports

(1) If an Affirmative Finding is issued, FHWA and BLM personnel assigned as inspection team members pursuant to Section 2c(4) will make a detailed inspection of each damage site and cooperate in the preparation of a damage site report (DSR) to collect information required per Paragraph 7e(1) of FHPM 6-9-16-2.

(2) The DSR will be prepared in a format approved by the RFHA and will provide for high quality photographs of damage to accompany DSR's to show extensive damage where complicated or very costly repairs are proposed, or to show damage of questionable eligibility.

(3) Work eligibility and needs will be based on the criteria established in Paragraphs 6c, d, e, f, and g of FHPM 6-9-16-2, except that roads and trails which evolved over time without the benefit of engineered design will be eligible only for repair to preexisting conditions unless emergency repairs necessitate repair to higher standards. Any differences in opinion between FHWA and BLM inspection personnel concerning work needed and the eligibility of work for emergency relief funding will, to the extent possible, be resolved between the FHWA and BLM Field Coordinators during the period when detailed site surveys are being conducted. Any eligibility questions which cannot be resolved by the Field Coordinators will be forwarded to the FHWA ERFO Coordinator for resolution.

(4) If it appears certain an Affirmative Finding will be made, the RFHA may elect to conduct these inspections at the time damage is initially assessed pursuant to Section 2d.

(5) Due to personnel shortages, the RFHA may elect to prescribe procedures whereby BLM personnel will conduct the detailed damage site inspections and complete the DSR's. As a minimum, such procedures shall provide that:

(a) FHWA personnel will conduct reviews of selected sites and DSR's at a later date to determine the eligibility of damage, the eligibility of repair or reconstruction proposed, and whether the proposed method of construction is appropriate.

(b) Based on the results of FHWA reviews, the BLM will make appropriate changes in inspection procedures, in completed DSR's, in any list(s) of projects submitted per Section 3 as necessary, and will make any other changes deemed necessary by the RFHA.

3. APPLICATION

a. Within 3 months after an Affirmative Finding, the SD will submit an application for emergency relief to the RFHA in the form of a letter which will include a list of projects for which emergency relief is requested. It is desirable that the list of projects indicate whether the BLM will perform the work or if the FHWA is requested to perform the work.

b. The list of projects will be based upon the detailed site inspections conducted per Section 2f, and will include the information required per Paragraph 8b of FHPM 6-9-16-2.

c. The list of projects shall separately identify proposed work which is eligible for emergency relief funding and work which is not eligible.

d. If the initial list of projects is incomplete due to uncontrollable events, e.g., delays in completion of detailed site inspections due to weather, such will be noted in the application and a subsequent list(s) of projects will be forwarded as quickly as possible to the RFHA for approval consideration.

4. PROGRAMING

a. The RFHA will advise the SD by letter which projects in the application, and in any subsequent submittals per Section 3d, are approved including any approval conditions. If applicable, the letter(s) will provide a statement of the work FHWA agrees to perform.

b. Approved projects shall constitute the approved program of projects (program).

c. All requests for FHWA to perform work for emergency relief projects in addition to work requested of FHWA at the time of program approval will be made by letter from the SD to the RFHA. The RFHA will inform the SD in writing of additional work FHWA agrees to perform.

d. The RFHA will, as appropriate, make revisions to any programs approved based on DSR's later found to be in need of revision as the result of reviews per Section 2f(5)(a).

e. Permanent work must have prior program approval in accordance with Section 4a unless such work is performed as emergency repairs. The definition of "permanent work" shall be as defined in Paragraph 3h of FHPM 6-9-16-2.

f. Emergency repairs, including permanent work performed incidental to emergency repairs, and all preliminary engineering may begin immediately and do not need prior program approval. Reimbursement, however, will be contingent upon the work ultimately being included in the approved program. The definition of "emergency repairs" shall be as defined in Paragraph 3d of FHPM 6-9-16-2.

g. Betterments may be programed for emergency relief participation in accordance with Paragraph 6e of FHPM 6-9-16-2 if they are clearly justified pursuant to Paragraph 6f(3) of FHPM 6-9-16-2. The term "Betterments" shall be as defined in Paragraph 3b of FHPM 6-9-16-2.

BLM-FHWA Interagency Agreement, Emergency Relief Administration

5. PROJECT PROCEDURES

a. Plans, specifications, and estimates (PS&E) will be developed based on work identified in the approved program. If the BLM plans other work in addition to that identified in the approved program, the SD will notify the RFHA in writing of the additional work planned and will specify the source of funding and method of payment for such additional work.

b. Standards to be used in reconstruction work shall be consistent with standards in actual use for regular BLM work. The BLM will provide FHWA with such standards for any work to be performed by FHWA.

c. PS&E reviews and approvals, concurrence in award of contract or rejection of bids, determination that construction by the force account method is in the public interest, approval of directives, change orders, and supplemental agreements, acceptance of completed work and other administrative procedures will be in accordance with procedures established by the RFHA.

d. The SD will notify the RFHA in writing of the semi-annual status, and completion of each emergency relief project constructed by the BLM.

e. Where agreed to by the RFHA, simplified procedures, including abbreviated plans, will be used to expedite emergency relief work.

f. Emergency relief projects shall be promptly constructed. Normally, projects will be expected to be under construction by the end of the fiscal year following the year in which the disaster or catastrophic failure occurs. Projects not under construction by the end of the second fiscal year following the year in which the disaster or catastrophic failure occurred will be reevaluated by the RFHA and will be withdrawn from the approved program of projects unless suitable justification is provided by the BLM to warrant retention.

BLM-FHWA Interagency Agreement, Emergency Relief Administration

6. FUNDING PROCEDURES

a. Where the BLM is to perform the work, FHWA will transfer obligational authority and liquidating cash to the BLM not to exceed the amount of the work in the approved program. Obligational authority and liquidating cash will be transferred between the BLM and FHWA at the Headquarters level following arrangements made between the appropriate field offices of the FHWA and BLM.

b. The BLM has the responsibility for administering funds transferred to it. This includes compliance with all applicable laws and regulations, and the reporting of fiscal data as may be required by FHWA.

c. Upon completion of all work under a particular natural disaster or catastrophic failure, the BLM will submit through the RFHA a final accounting of all approved program items listing the program estimates as approved and final actual costs.

d. During August of each year, the SD will submit to the RFHA an estimate of obligational authority and funding which will be needed by the BLM during the next fiscal year to accomplish work to be performed by the BLM to correct past disaster damage.

THIS AGREEMENT will be reviewed by the BLM and FHWA at least every 3 years to determine if changes should be sought.

RENEGOTIATION for any part of this agreement can be initiated at any time by either party.

THIS AGREEMENT shall become effective on the date of the last approving signature and will continue in effect until termination by either party upon giving a 60-day notice.

Approved:

FEDERAL HIGHWAY ADMINISTRATION

By: _____
Deputy Federal Highway Administrator

Date: FEB 5 1979

BUREAU OF LAND MANAGEMENT

By: Gerald E. Petty
Director, Bureau of Land Management

Date: _____

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Federal Highway Administration's FAHPM, Transmittal 291

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

FEDERAL-AID HIGHWAY PROGRAM MANUAL

VOLUME	6	ENGINEERING AND TRAFFIC OPERATIONS
CHAPTER	9	SPECIAL PROGRAMS
SECTION	16	EMERGENCY RELIEF PROGRAM

SUBSECTION 2 PROCEDURES FOR FEDERAL AGENCIES FOR FEDERAL ROADS

Transmittal 291
December 29, 1978
HHO-10

Par.
1. Purpose
2. Authority
3. Definitions
4. Policy
5. Federal Share Payable from Emergency Fund
6. Eligibility of Work
7. Notification, Damage Assessment, and Finding
8. Application Procedures
9. Programing and Project Procedures
10. Funding Procedures
11. Interagency Agreements
12. Manual of Instructions

1. PURPOSE. **To establish policy, procedures, and program guidance for the administration of emergency relief to Federal agencies for the repair or reconstruction of Federal roads which are found to have suffered serious damage by a natural disaster over a wide area or by catastrophic failure.*

2. AUTHORITY. *This directive is issued and administered under the authority of 23 U.S.C. 120(f), 125, and 315; 42 U.S.C. 5155; 49 CFR 1.48(b); and 41 U.S.C. 252.*

*Regulatory material is italicized and appears in the Federal Register under 23 CFR 668, Subpart B.

Federal Highway Administration's FAHPM, Transmittal 291

Federal-Aid Highway Program Manual
Transmittal 291, December 29, 1978

Vol. 6, Chap. 9
Sec. 16, Subsec. 2

3. DEFINITIONS

a. Applicant - *Any Federal agency which submits an application for emergency relief and which has authority to repair or reconstruct Federal roads.*

b. Betterments - *Added protective features such as the relocation or rebuilding of roadways at a higher elevation or the extension, replacement, or raising of bridges, and added facilities not existing prior to the natural disaster or catastrophic failure such as additional lanes, upgraded surfacing, or structures.*

c. Catastrophic failure - *The sudden failure of a major element or segment of a Federal road which is not primarily attributable to gradual and progressive deterioration or lack of proper maintenance. The closure of a facility because of imminent danger of collapse is not in itself a sudden failure.*

d. Emergency repairs - *Those repairs, including necessary preliminary engineering (PE), construction engineering (CE), and temporary traffic operations, undertaken during or immediately after a natural disaster or catastrophic failure (1) to restore essential travel, (2) to protect remaining facilities, or (3) to minimize the extent of damage.*

e. Federal roads - *Forest highways, forest development roads and trails, park roads and trails, parkways, public lands highways, public lands development roads and trails, and Indian reservation roads as defined under 23 U.S.C. 101(a).*

f. Finding - *A letter or other official correspondence issued by the Regional Federal Highway Administrator to a Federal agency giving notification that pursuant to 23 U.S.C. 125, Federal roads have (Affirmative Finding) or have not (Negative Finding) been found to have suffered serious damage as the result of (1) a natural disaster over a wide area, or (2) a catastrophic failure.*

g. Natural disaster - *An unusual natural occurrence such as a flood, hurricane, severe storm, tidal wave, earthquake, or landslide which causes serious damage.*

Federal Highway Administration's FAHPM, Transmittal 291

Federal-Aid Highway Program Manual
Transmittal 291, December 29, 1978

Vol. 6, Chap. 9
Sec. 16, Subsec. 2

h. Permanent work - Repair or reconstruction to pre-disaster or other allowed geometric and construction standards and related PE and CE.

i. Regional Federal Highway Administrator - For the purposes of this directive, Regional Federal Highway Administrator (RFHA) shall be the RFHA in Regions 8 and 10, and the Regional Engineer in Region 15.

4. POLICY

a. This emergency relief program is intended to pay the unusually heavy expenses in the repair and reconstruction of Federal roads resulting from damage caused by natural disasters over a wide area or catastrophic failures.

b. Emergency relief work shall be given prompt attention and priority over nonemergency work.

c. Permanent work shall be done by contract awarded by competitive bidding through formal advertising, where feasible.

d. It is in the public interest to perform emergency repairs immediately and prior approval or authorization from the RFHA is not required. Emergency repairs may be performed by the method of contracting (advertised contract, negotiated contract, or force account) which the applicant or FHWA (where FHWA performs the work) determines to be most suited for this work.

e. Emergency relief projects shall be promptly constructed. Normally, projects are expected to be under construction by the end of the fiscal year following the year in which the disaster or catastrophic failure occurs. *Projects not under construction by the end of the second fiscal year following the year in which the disaster occurred will be reevaluated by the RFHA and will be withdrawn from the approved program of projects unless suitable justification is provided by the applicant to warrant retention.*

f. The Finding for natural disasters will be based on both the extraordinary character of the natural disturbance and the wide area of impact. Storms of unusual intensity occurring over a small area do not meet these conditions.

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g. Diligent efforts shall be made to recover repair costs from the legally responsible parties to reduce the project costs where highway damages are caused by ships, barge tows, highway vehicles, vehicles with illegal loads, and similar improperly controlled objects or events.

h. Emergency funds shall not duplicate assistance under another Federal program or compensation from insurance or any other source. Where other funding compensates for only part of an eligible cost, emergency relief funding can be used to pay the remaining costs.

5. FEDERAL SHARE PAYABLE FROM EMERGENCY FUND. *The Federal share payable under this program is 100 percent of the cost.*

6. ELIGIBILITY OF WORK

a. Permanent work must have prior program approval in accordance with Paragraph 9a unless such work is performed as emergency repairs.

b. Emergency repairs, including permanent work performed incidental to emergency repairs, and all PE may begin immediately and do not need prior program approval. Reimbursement shall be contingent upon the work ultimately being approved in accordance with the requirements of Paragraph 9a.

c. To qualify for emergency relief, the damaged or destroyed road or trail shall be designated as a Federal road.

d. Replacement highway facilities are appropriate when it is not practical and economically feasible to repair or restore a damaged element to its preexisting condition. Emergency relief is limited to the cost of a new facility constructed to current design standards of comparable capacity and character to the destroyed facility. With respect to a bridge, a comparable facility is one which meets current geometric and construction standards for the type and volume of traffic it will carry during its design life.

e. Emergency relief funds may participate to the extent of eligible repair costs when proposed projects contain betterments or other work not eligible for emergency funds.

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f. Work may include:

(1) Repair to, or reconstruction of, seriously damaged highway elements for a distance which would be within normal highway right-of-way limits, including necessary clearance of debris and other deposits in drainage courses, where such work would not be classed as heavy maintenance.

(2) Restoration of stream channels when the work is necessary for the satisfactory operation of the Federal road. The applicant must have responsibility and authority for maintenance and proper operation of stream channels restored.

(3) Betterments where clearly economically justified to prevent future recurring damage. Economic justification acceptable to the RFHA must weigh the cost of such betterments against the risk of eligible recurring damage and the cost of future repair.

(4) Actual PE and CE costs on approved projects.

(5) Emergency repairs.

g. Work shall not include:

(1) Repairs such as correcting eroded shoulders, filled ditches and culverts, pavement settlement, mud and debris deposits, slope sloughing, and minor slides and slip-outs, where such work would be classed as heavy maintenance.

(2) Repair of surface damage by traffic whether or not aggravated by saturated subgrade or inundation unless the traffic was necessary for emergency repairs.

(3) Repair of damage not directly related to, and isolated away from, the pattern of the disaster.

(4) Maintenance of detours and temporary surfaces, upon completion of emergency repairs and prior to permanent reconstruction.

(5) Damage to, or loss of, material stockpiles.

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Transmittal 291, December 29, 1978

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(6) Normal or heavy maintenance and operations functions.

7. NOTIFICATION, DAMAGE ASSESSMENT, AND FINDING

a. *Notification. During or as soon as possible after a natural disaster or catastrophic failure* (normally no later than 2 weeks after the occurrence), *each applicant will notify the RFHA of its tentative intent to apply for emergency relief and request that a Finding be made.*

b. *Acknowledgment. The RFHA will promptly acknowledge the notification and briefly describe subsequent damage assessment, Finding, and application procedures.* This will include the necessary coordination and cooperation between the applicant and FHWA and provide basic eligibility information.

c. *Field report. The applicant shall cooperate with the RFHA to promptly make a field survey of overall damage and in the preparation of a field report.* The report will describe the intensity of the disaster or catastrophic failure including the dates of occurrence, the extent of the affected area, the damage to Federal and other roads to the extent such information is available, the approximate cost of repairs or reconstruction, photographs of typical damage, and appropriate maps showing the locations and extent of damage. Unless unusual circumstances prevail, completion of the report will be expected within 3 weeks after the notification.

d. *Finding. Using the field report and other information deemed appropriate, the RFHA will promptly issue a Finding and if an Affirmative Finding is made, establish the date after which repair or reconstruction will be considered for emergency relief, and note the dates of the extraordinary natural occurrence or catastrophic event responsible for the damage or destruction.*

e. *Detailed Site Inspections*

(1) *If an Affirmative Finding is made, the applicant shall cooperate with the RFHA to make a detailed inspection of each damage site.* The purpose of the inspection is to determine the extent and nature of damage, emergency repairs already completed or those necessary, permanent work necessary, estimated costs, and a recommended method of construction.

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(2) If it appears certain an Affirmative Finding will be made, the RFHA may elect to make these site inspections at the time damage is initially assessed pursuant to Paragraph 7c.

f. The applicant shall make available to FHWA personnel conducting damage survey and estimate work maps depicting designated Federal roads in the affected area.

8. APPLICATION PROCEDURES

a. Based on the detailed site inspections and damage estimates prepared pursuant to Paragraph 7e, the applicant will submit an application in the form of a letter to the RFHA which shall include a list of projects for which emergency relief is requested. The application shall be submitted within 3 months after an Affirmative Finding.

b. The list of projects shall include emergency repairs, PE, and permanent work, and provide for each project a location, length, project number, type of damage, description of work with a separate breakdown for betterments including a justification for those intended for emergency relief funding, proposed method of construction, estimated cost, statement that the applicant will perform the work or that FHWA is requested to perform the work, *and any other information requested by the RFHA.*

c. If the initial list of projects is incomplete due to uncontrollable events such as delays in completing detailed site inspections because of inaccessibility, such will be noted in the application and *a subsequent list(s) of projects shall be forwarded to the RFHA for approval consideration as soon as possible.*

9. PROGRAMING AND PROJECT PROCEDURES

a. The RFHA will advise the applicant in writing which projects in the application, or in any subsequent submittals pursuant to Paragraph 8c, are approved including any approval conditions. Approved projects shall constitute the approved program of projects (program). If applicable, the letter(s) will provide an indication of the work FHWA agrees to perform.

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b. *Plans, specifications, and estimates (PS&E) shall be developed based on work identified in the approved program.*

c. *The RFHA will approve PS&E's, concur in the award of contracts or the rejection of bids, determine that construction by the force account method is in the public interest, and accept completed work in accordance with interagency procedures established by the RFHA.*

d. *The applicant shall notify the RFHA in writing of the semi-annual status and completion of each emergency relief project constructed by applicant forces.*

e. Projects will be numbered in a mutually acceptable manner consistent with data processing requirements for the Form PR-37, Project Status Record.

f. Simplified procedures including abbreviated plans should be used, where appropriate, to expedite emergency relief work.

10. FUNDING PROCEDURES

a. The RFHA will submit to FHWA Headquarters (HNG-12 with a copy to HHO-10) during September of each year an estimate of emergency relief work which will advance to the obligation stage for ongoing disasters or catastrophic failures during the next fiscal year. The estimate shall be broken down according to the expected obligations by each applicant and according to work FHWA is expected to perform for each applicant. The unobligated balance of emergency relief allotments will also be shown.

b. Based on the above submissions and similar reporting for emergency relief work on the Federal-aid system in accordance with FHPM 6-9-16-1, an annual allotment of emergency relief obligational authority will be made to the regions.

c. Should a need for additional obligational authority arise during the fiscal year, a request should be made by the RFHA to the FHWA Headquarters (HNG-12 with a copy to HHO-10).

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d. Work undertaken by an applicant will require a transfer of obligational authority and funds to that agency. Such transfers will be arranged by the RFHA through the FHWA Headquarters (HNG-12 with copies of all requests to HHO-10). Funds will be transferred between the applicant and FHWA at the Headquarters level.

e. The applicant has the responsibility for administering funds transferred to it. This includes compliance with all applicable laws and regulations, and the reporting of fiscal data to FHWA.

11. INTERAGENCY AGREEMENTS. To the extent practicable, this emergency relief program will be tailored to the needs of each applicant by the execution of an inter-agency agreement between FHWA and each applicant establishing operational procedures through which the provisions of this directive will be implemented.

12. MANUAL OF INSTRUCTIONS. A manual providing detailed information and examples of how Federal agencies apply for emergency relief for Federal roads; application approval guidelines; programing, fiscal, and project processes; specific examples and explanations of eligibility criteria; and explanations of other policies and procedures pursuant to this directive can be obtained by contacting:

Federal Highway Administration
Office of Highway Operations
Federal Highway Projects Division
400 7th Street, SW.
Washington, D.C. 20590

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BLM-FHWA Interagency Agreement, FWHA Engineering Services

IN REPLY REFER TO:
1786 (230)
Your Ref.:
HHO-13

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

Mr. Karl S. Bowers
Acting Federal Highway Administrator
Federal Highway Administration
Department of Transportation
Washington, D.C. 20590

JUN 6 1978

Attention: Office of Highway Operations

Dear Mr. Bowers:

We have signed the original and one copy of the enclosed agreement between the Bureau of Land Management and the Federal Highway Administration and are confident that the agreement will facilitate our handling of areas of mutual concern.

In concentrating on program procedures, certain standard provisions we like to see in agreements were overlooked. Rather than renegotiate and rewrite the agreement, we have signed it subject to your concurrence of these conditions:

(1) All performance is subject to availability of appropriated funds and extant statutory authority;

(2) Renegotiations can be initiated by either party;

(3) Prompt reporting to higher echelon for resolution of any novel, disputed, or other issue likely to cause stalemate; and

(4) The right of either party to end the agreement upon notice sufficient to provide an orderly close out of work in progress.

Sincerely yours,

Gerald E. Daly

Acting Associate Director

Enclosure:
Memorandum of Agreement

I concur: H D Lindberg
For Federal Highway Administrator

Date: JUN 9 1978

BLM-FHWA Interagency Agreement, FHWA Engineering Services

Memorandum of Agreement
Between
Bureau of Land Management
and
Federal Highway Administration

The purpose of this agreement is to establish the general procedures under which work shall be performed by the Federal Highway Administration, Offices of Federal Highway Projects (hereinafter referred to as FHWA), for the Bureau of Land Management (hereinafter referred to as BLM).

WHEREAS, 23 USC 308 authorizes the Secretary of Transportation to perform engineering and other services in connection with the survey, design, construction, and improvement of highways for other Government agencies, and

WHEREAS, such authority has been delegated to the Federal Highway Administrator, acting through the FHWA, and

WHEREAS, BLM desires to utilize the engineering capability of FHWA as authorized by 31 USC 686(a).

NOW, THEREFORE, the FHWA and the BLM do mutually agree as follows:

A. Identification of Road Improvements and FHWA Cooperation

The BLM shall be responsible for initiating road improvements including the identification of any necessary planning, economic studies, and surveys; identification of appropriate standards; the purchase of right-of-way; all other activities incidental to the development of an annual work program or separate road projects. The FHWA will cooperate with BLM in making its services available to assist BLM with engineering and technical problems associated with the location, design, estimates of cost, construction, and maintenance of roads consistent with the availability of personnel, providing the work can be performed economically and efficiently and without duplication of staff efforts.

B. Proposed Work

1. Continuing Programs of Work - In those States where FHWA performs work for BLM on a continuing basis, BLM will arrange an annual meeting with FHWA to discuss and reach agreement on the coming year's program and to make tentative arrangements for the following 2 years.

2. Project-by-project Work - When it is more practical to arrange for FHWA to perform work on a project-by-project basis, arrangements may be handled by an exchange of correspondence between the BLM and FHWA offices involved.

C. Joint Field Letters for Individual Projects

The BLM shall initiate a joint field letter to be developed by FHWA and BLM for each project assigned to FHWA. The letter will identify specific responsibilities for each particular project.

D. Financial Assignments

1. Transfer of Funds

a. The BLM shall transfer obligational authority and payment authority by Standard Form 1151, Nonexpenditure Transfer Authorization, to the FHWA for incurrence of obligations and disbursements to cover its cost of preliminary engineering items such as land surveys, soil surveys, environmental analyses, and the preparation of plans, specifications, and estimates; project supervision and inspection; other services requested of and performed by the FHWA under this memorandum; and certain overhead and administrative expenses.

b. The BLM agrees to pay the overhead and administrative support expenses of FHWA necessary for the performance of work performed by FHWA under this agreement.

c. FHWA shall assign funds to projects to cover approved change orders and ordinary contract overruns to the extent that funds are available. In the event adequate funds are not available, FHWA shall confer with BLM to determine a course of action.

2. Cost Accounting

FHWA shall maintain cost accounting records of each project undertaken and shall furnish monthly reports to BLM concerning the funds assigned, obligated, expended, and the balance of funds available for obligation.

E. Triannual Review of Agreement - This agreement will be reviewed every 3 years to determine if changes should be sought.

BLM-FHWA Interagency Agreement, FHWA Engineering Services

F. Upon execution of this agreement, the existing BLM/FHWA agreement covering the revested Oregon and California Railroad and reconveyed Coos Bay Wagon Road Grant Lands in Oregon (O&C lands) dated June 17, 1954, and as amended April 7, 1966, is null and void.

Approved:

Acting Federal Highway Administrator — Date: MAY 5 1978

Acting Associate Director, Bureau of Land Management — Date: JUNE 6, 1978

BLM-FS Interagency Agreement, Road Use and Maintenance

**BLM-FS Interagency Right-of-Way
and Road Use Agreement**

Index

BLM-FS Interagency Agreement, Road Use and Maintenance

United States Department of Agriculture
Forest Service

United States Department of the Interior
Bureau of Land Management

I. Purpose. This agreement provides procedures for granting and acquiring property rights by each agency from the other necessary for road use, construction, improvement, maintenance, and transferring jurisdiction of roads.

For the purpose of land management under the principles of multiple use, including the removal of forest and mineral products, the procedures set out herein are established for the use of roads and lands under the jurisdiciton of the Forest Service and the Bureau of Land Management.

II. Authority.

A. Bureau of Land Management
1. The Federal Land Policy and Management Act of 1976, (90 Stat. 2766; 43 U.S.C. 1737) and (90 Stat. 2781; 43 U.S.C. 1767).

B. Forest Service
1. Organic Administration Act of 1897 (30 Stat. 34 as supplemented and amended; 16 U.S.C. 551) and the Federal Land Policy and Management Act of 1976 (90 Stat. 2781; 43 U.S.C. 1767).

III. Definitions. The following definitions are hereby adopted:

A. "The Agencies" means the Forest Service and the Bureau of Land Management.

B. "Road" means an existing road or interest therein on lands or easements administered by one of the agencies which the other agency needs to use in carrying out its functions; provided, the interest owned allows either qualified or unqualified use by the other agency.

C. "Management" means any of the multiple use activities on the lands under the jurisdiction of each agency including but not limited to the harvesting and removal of forest and mineral products.

D. "Principal sale" means that timber sale to be served by the road, as opposed to the right-of-way timber on that road.

E. "Licensee" means any person who is authorized to remove mineral or forest products in commercial quantities from lands administered by either agency.

F. "Road construction" means the locating, relocating, clearing, constructing, or reconstructing of any road under the jurisdiction of either agency.

C. "Road improvement" means the improvement, widening, surfacing, or the locating of additional structures upon any existing road.

IV. Existing Roads.

Roads that are now existing or hereafter constructed or acquired are available for joint use as follows:

A. Road jurisdiction will not transfer.

1. Each agency is hereby authorized to use such roads in the exercise of its administrative function.

2. Contractors or permittees of the agencies shall be and are hereby authorized to use such roads for the removal of forest or mineral products upon the execution of a license agreement between the contractors or permittees and the agency having jurisdiction or control of the roads to be used. The form of such license agreement is attached hereto and designated Exhibit A and made a part hereof by reference.. Upon written request, such license agreements shall be furnished unsigned to the requesting agency prior to advertising, sale, or the removal of timber or mineral materials.

3. If the grants to the United States will permit, licensees of each agency shall be authorized to use roads constructed or controlled by third parties. Such use shall be subject to and limited by the terms and conditions of the agreements or grants to the United States.

Where there is an unliquidated collection right against the United States timber or mineral products on such a road, the license agreement issued by one agency to the timber or mineral purchaser of the other will contain a provision requiring payments as authorized by the terms of the collection right or a higher payment as agreed to by the two agencies.

4. Nothing in this agreement shall have the effect of curtailing or limiting the administrative use of the agency having the primary administrative control, which control must remain paramount in the event of a conflict.

5. It is understood that if the rights of one agency across private lands are inadequate for the use of the other agency, the latter may acquire additional rights in the name of the United States.

6. Upon completion of the sale or contract for which the license is issued and all requirements of the license agreement have been satisfied, the requesting agency shall notify the Licensor that the bond may be released.

B. Road jurisdiction will transfer.

1. If it is agreed to by both parties that the transfer of road jurisdiction is desirable and will result in a more reasonable, manageable transportation system, the procedure set forth under Section V.A. - "Construction or Transfer of Roads" shall be followed to accomplish the transfer.

BLM-FS Interagency Agreement, Road Use and Maintenance

C. Road Improvement.

In the event one agency seeks the use of a road under the jurisdiction of the other that will require improvement to serve the proposed use, the two agencies will confer at the annual meeting, or at any other time as necessary. Transfer of jurisdiction will be considered, particularly where mutual transportation planning indicates such action. If transfer is not appropriate, the agencies will determine which agency will be responsible for improving the road. The improving agency will be permitted to recover a portion of its investment from any subsequent third party, non-United States users.

If transfer is determined to be appropriate, the agency to which the road is to be transferred shall file an application as set forth in Section V.A. of this agreement.

Any road improvement to be made by one agency upon a road under the jurisdiction of the other agency shall be made pursuant to the written application (Exhibit D - original and one copy) by the constructing agency. The agency having jurisdiction over the road will review the application, and, if in order, the approving agency will execute it and forward a copy to the requesting agency. Any conditions and standards in the approval shall be inserted in the License Agreement to be executed by the licensee and the agency having jurisdiction over the road.

D. Road Maintenance.

Each agency or its licensee shall be responsible for performing the work to maintain the road or for payment of pro rata maintenance expense. The pro rata maintenance expense shall be determined by the total use of the road or part thereof by the agencies. Each year, the agencies shall mutually agree, insofar as is possible, upon the required maintenance and resurfacing work to be done upon the particular road(s) involved. Agency expenditures for the benefit of the other agency's use shall be reimbursed by the benefiting agency under the Act of June 30, 1932, as amended (31 U.S.C. 686), or it shall make other arrangements to provide funds to meet such expense. Maintenance work shall include such work as is reasonably necessary to place the particular road in a satisfactory condition for use, to keep it in such condition, and to reasonably protect said road from weather conditions, and may include blading and shaping, watering or oiling, ditching, repair of drainage improvements, slide removal and such other measures as may be required by the agency having jurisdiction. Upon discontinuing use of a road or any portion of a road, the road shall be placed, as a minimum requirement, in as good a condition as it was prior to commencement of use.

E. Road Use Rules.

Roads that are jointly used shall be subject to reasonable road use rules to be administered and enforced by the agency having jurisdiction. Both agencies shall jointly make a periodic study and review of such roads. Road rules shall be uniformly applicable to all road users, and may include, but not be limited to, matters of speed, load limits, fire and safety equipment, and road closures. The road rules will be posted and made available to the road user.

V. Construction or Transfer of Roads

A. Construction.

It is understood that prior to construction or transfer of a road by or for one agency on lands under the jurisdiction of the other, status will be cleared through the appropriate office of the administering agency. Concurrently therewith, an application in the form of Exhibit B shall be completed by the constructing agency and the original and two copies submitted to the appropriate Forest Supervisor or District Manager with the required attachments. After review and any necessary consultation, the administering agency will execute a Right-of-Way Reservation in the format of Exhibit C and forward the original to the constructing agency.

B. Timber.

The clearing limits on each side of the road centerline shall be designated by the constructing agency. Unless otherwise agreed upon, such timber shall be cruised, appraised and sold by the agency having jurisdiction of the timber.

The following methods may be used for timber disposal:

1. The agency having jurisdiction of the right-of-way timber may sell it and have it removed prior to road construction.

2. The party constructing the road may be required to buck the timber into standard log lengths and deck the logs at locations designated along the right-of-way by the agency having jurisdiction of the timber.

3. The party constructing the road may be required to buy the timber from the agency having jurisdiction of the timber prior to cutting the timber. The timber will be sold lump sum based on the cruise and appraisal of that agency. The appraisal shall be on a stumpage basis with no road construction cost allowance.

4. Where the purchaser of a principal sale is to construct the road, the purchaser may be required to buy the right-of-way timber. Such timber shall be appraised by the agency having jurisdiction of the timber. Appraisal shall be on a stumpage basis with no road construction cost allowance. Following the receipt of bids on the principal sale, the sale price for right-of-way timber shall be determined by increasing the appraised or advertised price of the right-of-way timber, species by species, by the monetary difference between the appraised or advertised and bid prices of the principal sale.

When method 3 or 4 is used, the necessary timber sale contracts shall be furnished to the constructing agency prior to the advertising of the constructing agencies road contract, timber, or mineral products sale.

In the event that the road is constructed by the United States through a road contract or by force account, the agency having jurisdiction of the timber will specify the method of disposal after consultation with the constructing agency.

BLM-FS Interagency Agreement, Road Use and Maintenance

C. Minerals.

In the event saleable or leasable minerals are known to be within the right-of-way or discovered subsequent to the commencement of construction, the agency having jurisdiction over the minerals shall make arrangements with the constructing agency for sale or stockpiling.

VI. General Provisions.

A. Expenditure of Appropriated Funds. Nothing in this agreement shall require either agency to spend money in excess of appropriations.

B. Termination of Agreement. This agreement shall remain in effect unless terminated by mutual agreement or one agency giving the other agency ninety (90) days prior written notice. Such notice and termination shall not affect any outstanding rights under this agreement that are held by either agency over lands of the other agency. All outstanding rights will either continue or terminate in accordance with the terms of the document with which they were acquired.

C. Annual Meeting. Each year during November or December, representatives of the regional, State, district, and forest offices shall meet to review joint transportation planning, desirable transfers of road jurisdiction, joint use, maintenance, improvement and construction of roads within their respective jurisdictions. It is the responsibility of the respective forest supervisors and district managers who share routes of access to arrange such meetings, unless it is determined among them that such a meeting is not desirable. The annual meeting will also be utilized to discuss problems associated with the use of the agreement and decide upon a mutual course of action to solve the problems. Issues that cannot be resolved at the State Director, Regional Forester, level are to be referred to the respective Washington Headquarters Office.

FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C.

Date: 5/20/80

BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C.

Date: 5/20/80

BLM-FS Interagency Agreement, Road Use and Maintenance

Exhibit A

Agreement No. _____

LICENSE AGREEMENT

THIS AGREEMENT, entered into this _____day of _____, 19 ___by and between _____hereinafter called "Licensor" and _____hereinafter called "Licensee."

WITNESSETH

WHEREAS, Licensee has purchased ____(Mineral Material or Timber Sale) or ____(Certain Forest Products or Mineral Products) under (permit) or (contract) dated 19__, Number _____, located in (Sec., T&R, County, State) or appropriate geographic location) and desires to use roads under the jurisdiction of the Licensor in order to (operate said sale) (remove said products), and

WHEREAS, Licensor is willing to grant said access subject to the terms and conditions set forth herein,

NOW, THEREFORE, the parties hereto do mutually agree as follows:

1. Licensor hereby grants to Licensee a nonexclusive license to use the existing roads of the Licensor as listed in Section 3 of this Agreement, and shown on the map attached hereto.

2. Said existing roads shall be open at all times to full use and enjoyment by the Licensor and its permittees for any and all purposes deemed necessary or desirable in connection with the control, management and administration of Licensor's lands or the resources thereof, and insofar as compatible therewith, use by the general public.

3. Licensee shall maintain the road or shall pay his proportionate share as indicated below. Maintenance shall include all expenditures reasonably necessary to place the road in satisfactory condition for heavy hauling, to keep it in such condition, and to reasonably protect the road from winter weather. Maintenance also includes replacement of surfacing lost through wear or displacement resulting from the use of the road.

A. 1/ Licensee shall maintain the following roads in accordance with the specifications shown in the aforesaid (timber sale) (mineral sale or lease) (permit) (contract) or (in Exhibit ____ attached hereto):

Road No.	Segment	Miles	Applicable Specification

1/ Use A, B. C. D. or E, or any combination applicable.

BLM-FS Interagency Agreement, Road Use and Maintenance

B. 1/ Licensee shall make payments into a cooperative account for maintenance to be performed by Licensor at the following rates:

Road No.	Segment	Miles	$/Mbdft	$/cu yd

C. 1/ Licensee shall replace surfacing on the following roads in accordance with the provisions shown in Exhibit ____, attached hereto:

Road No.	Segment	Miles

D. 1/ Licensee shall make payments into a cooperative account for resurfacing to be performed by Licensor at the following rates:

Road No.	Segment	$/Mbdft	$/cu yd

E. 1/ With the prior written approval of the Licensor, the Licensee may arrange for cooperative maintenance with other users of the roads described above; provided, that such cooperative arrangement shall not relieve the Licensee of his liability for the maintenance and repair of the road.

4. The Licensee shall comply with the following requirements:

A. No commercial timber or minerals shall be cut, mined, removed, or destroyed on the right-of-way unless Licensee first obtains specific authority from Licensor.

B. Licensee shall take adequate precaution to prevent and suppress forest, brush, and grass fires and shall endeavor with all reasonably available personnel to suppress any fire originating on or threatening the right-of-way. Licensee shall do no burning on or near the right-of-way without a State permit during seasons when permits are required, and shall set no fires on or near the right-of-way that will result in damage to any natural resource or improvement.

C. All truck drivers shall have a valid chauffeur's license.

1/ See footnote on preceding page

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D. Licensee shall abide by all reasonable traffic regulations imposed by the Licensor; provided, however, such regulation shall be uniformly applicable to all users of the road, including Licensor.

E. 2/_____ Company retains a collection right on this road. Licensee shall pay ($_____ lump sum) ($_____ per Mbd. ft.) ($_____per cu. yd.) (to _____ Company) (to Licensor for transmittal to the Company.)

Any lump sum payment shall be made prior to start of hauling. Per Mbd. ft. or per cu. yd. payments shall be made on or before the 25th day of each calendar month for all forest or mineral products hauled in the preceeding calendar month. Such payments shall be accompanied by a copy of the applicable timber cutting report or weight slip or other appropriate documentation if minerals are involved, certified as correct by the officer in charge of the sale.

5. All of Licensee's equipment operating upon the road shall be maintained in a good and safe operating condition and shall be operated cautiously so as to minimize accidents or hazards.

6. Licensor may suspend the use of the road during periods when the forests are closed by lawful authority. Licensor may also suspend the use of the road when, due to weather conditions, unrestricted use would cause excessive damage to the road. Any suspension shall be applicable to all heavy haulers on the road.

7. Licensee shall not construct landings for loading logs nor yard logs on the road without express written permission from Licensor. Licensee shall not permit slash or debris from its operation to fill in or close the ditches or culverts of the roads.

8. The Licensee shall provide a performance bond in the amount of $_____, acceptable to the Licensor, conditioned upon faithful performance of this agreement 3/ (and shall obtain comprehensive liability insurance covering all operations, including vehicles, of the Licensee under this agreement in amounts not less than the following: (a) bodily injury, $_____for injury or death of one person, $_____for any one occurrence; (b) property damage, $_____for any one occurrence).4/

Before exercising any of the rights granted herein, the Licensee shall deliver the required bond to the Licensor (and shall deliver a certificate from the insurance company stating that such insurance is in force and that the insurance company will give to the Licensor 10 days written notice prior to any cancellation or modification of such insurance, together with evidence that all automotive equipment to be used by the Licensee is covered by insurance).4/ Any insurance or bonding company furnishing bonding or insurance services required by this license shall be duly authorized to do business in the State of _____, and registered pursuant to its statutes.

2/ Delete if not applicable.
3/ Performance bond will normally be computed at the rate of $500 per mile or fraction thereof, to a $10,000 maximum.
4/ Generally, insurance will be required only in those cases where underlying easements or agreements require road users to have insurance and shall be required only in the amount required by the easements or agreements.

BLM-FS Interagency Agreement, Road Use and Maintenance

9. Concurrently with conclusion of Licensee's use of said roads, Licensee shall clean up and remove from the road or right-of-way all debris, refuse and waste material which may have resulted from Licensee's use or operations, shall repair any damage to the road resulting directly or indirectly from Licensee's use or operations; Provided however, that when Licensor is performing the maintenance of the road, Licensee shall not be required to repair any damage resulting from normal use of the road for the removal of forest or mineral products; Provided further that when Licensee is performing the maintenance the road shall be left in as good condition as when Licensee first began to use it.

10. The Licensee shall undertake every reasonable measure to minimize damage to waterways, streams, lakes, or reservoirs near the roads under this agreement. The Licensee shall immediately discontinue operations under this agreement upon receipt of written notice from an authorized officer that such operations or any part thereof are causing any damage or injury to the waterways and watercourses near the roads under this agreement.

11. The rights granted hereunder are not assignable without the prior written consent of the Licensor.

12. The Licensee shall maintain the right-of-way clearing by chemicals only after specific written approval has been given by the (BLM Authorized Officer) (Regional Forester). Application for such approval must be in writing and specify the time, method, chemical(s), pest to be controlled, quantity of chemical to be used, and exact portion of the right-of-way that will be chemically treated.

13. By prior agreement between the Licensor and the (administering agency), the latter will be responsible for administration and enforcement of the terms of this agreement. A copy of any notice under this agreement shall be sent to the Licensor.)5/

14. The terms of this Agreement shall be from the date hereof until the termination of the aforesaid timber or mineral contract or permit.

IN WITNESS WHEREOF, the parties have executed this Agreement in duplicate originals on the day and year first above written.

LICENSOR

By_____

Title_____

LICENSEE

By_____

Title_____

5/ Optional, if not used delete and renumber 14.

BLM-FS Interagency Agreement, Road Use and Maintenance

Exhibit B

R/W No. _____

Serial No. _____

BLM-FS ROAD RIGHT-OF-WAY APPLICATION

1. Name of Agency | National Forest or BLM District | Date of Application

Hereby applies for a right-of-way reservation across land administered by (Name of Agency) _____ pursuant to the BLM-FS Right-of-Way and Road Use Agreement dated _____.

1. Legal description _____.

2. Specify period of time for which right-of-way reservation is requested.

☐ Perpetual ☐ Term _____ (Years)

3. Plan and profile of road to be constructed is attached?

☐ Attached ☐ On file at _____.

Identified as _____.

4. Construction specifications are attached?

☐ Attached ☐ On file at _____.

Identified as _____.

5. Environmental assessment is attached?

☐ Attached ☐ On file at _____.

Identified as _____.

6. Appropriate maps or right-of-way plat attached.

7. Right-of-way width _____ acreage _____.

Constructing Agency

By: _____

Title: _____

BLM-FS Interagency Agreement, Road Use and Maintenance

Exhibit C

RIGHT-OF-WAY RESERVATION

KNOW ALL MEN BY THESE PRESENTS, That in accordance with Section 507 of the Federal Land Policy and Management Act of 1976 (90 Stat. 2781, 43 U.S.C. 1767) that the United States of America acting by and through the (Bureau of Land Management, U.S. Department of the Interior), (Forest Service, U.S. Department of Agriculture), does hereby issue and reserve to the (Bureau of Land Management) (Forest Service), and its assigns, a right-of-way to locate, construct, use, control, maintain, improve, and repair a road over and across the following described real property situated in the County of_____, State of _____, to wit:

The parcel of land to which the above description applies contains _____ acres, more or less.

A plat showing the right-of-way described above is attached hereto as Exhibit A and made a part hereof.

The right-of-way herein granted and reserved is for the full use of the above described property as a road by the (Bureau of Land Management) (Forest Service), its licensees, permittees, agents, and contractors including the right of access for the people of the United States generally to lands owned, administered, or controlled by the UNITED STATES OF AMERICA subject to reasonable rules and regulations of the (Secretary of the Interior) (Secretary of Agriculture), and to the following terms and conditions:

1. The road constructed under the provisions of this right-of-way will be under the control and jurisdiction of the (Forest Service) (Bureau of Land Management).

2. The agency having jurisdiction of the road alone may extend or grant rights and privileges for use of the road to other users, including members of the public and other Government Departments and Agencies, States, and local subdivisions thereof. Such grants may be in the form of regulations, permits, easements, or licenses, as appropriate.

BLM-FS Interagency Agreement, Road Use and Maintenance

3. Any forest products or other resources on lands within the right-of-way shall remain under the jurisdiction of the issuing agency and may be severed or extracted and disposed of only in accordance with applicable law and regulation of the appropriate Secretary. The extraction, severance, and disposal of any such resources shall be subject to such stipulations, if any, that the agencies agree are needed to avoid unreasonable interference with the use of the road.

4. The (Bureau of Land Management) (Forest Service) retains the right to occupy and use the right-of-way, and to issue or grant rights-of-way or other land uses for other than road purposes, upon, over, under, and through the lands, provided that the occupancy and use will not unreasonably interfere with the rights granted herein.

5. This reservation shall remain in effect (until terminated by mutual agreement of the agencies.) (for a term commencing on the date shown below and continuing until _____, 19___.)

Dated this _____ day of _____, 19___.

_____
Signature of Authorized Officer of Issuing Agency

_____
Title

BLM-FS Interagency Agreement, Road Use and Maintenance

ROAD IMPROVEMENT APPLICATION AND APPROVAL **Exhibit D**

Date _____

The (Bureau of Land Management)(Forest Service) in accordance with the Cooperative BLM-FS Right-Of-Way and Road Use Agreement, dated _____, **hereby requests approval of the following special conditions for the improvement of** _____.
(Number or Name of Road)

1. Location as shown on attached map of scale not less than 1 inch equals 1,000 feet._____
(Drawing No. _____, name, date, or other identification)

2. Construction Specifications for improvement
_____
_____

3. Slash Disposal Specifications _____
_____
_____

4. Maintenance _____
_____

5. Other Conditions _____
_____

6. Contract or Permit Designation _____

7. Timber Sale Allowance or Contract Cost of Improvement _____

8. Improving agency may collect road use fees from third party private users in an amount proportionate to third party use.

Constructing Agency:	Approving Agency:
By:_____	By:_____
Title:_____	Title:_____
Date:_____	Date:_____

9113 - ROADS

BLM - Federal Highway Administration Interagency Agreement,

Road Program Review

**Memorandum of Agreement Between the
Bureau of Land Management and the
Federal Highway Administration**

1. PURPOSE.

This Memorandum of Agreement identifies and sets forth the joint and individual responsibilities and procedures of the Bureau of Land Management (BLM) and the Federal Highway Administration (FHWA) in the implementation of legislation concerned with the construction and improvement of Public Lands Development Roads and Trails.

2. LEGISLATIVE AUTHORITIES.

The legislation upon which this Memorandum of Agreement is based is 23 U.S.C. 214.

3. DEFINITIONS.

The following are definitions of terms in this memorandum:

Public Lands Development Roads and Trails (PLDR&T) - The term Public Lands Development Roads and Trails shall mean those roads or trails which the Secretary of the Interior determines are of primary importance for the development, protection, administration, and utilization of public lands and resources under his/her control.

Bureau of Land Management (BLM) - The term BLM shall mean any official or office within the BLM authorized by the Director to act on behalf of the BLM.

Federal Highway Administration (FHWA) - The term FHWA shall mean any official or office within the FHWA authorized by the Administrator to act on behalf of the FHWA.

State Director - The State Director of the BLM for the State in which the project is located.

Division Administrator - The Division Administrator for the FHWA for the State in which the project is located.

4. JOINT RESPONSIBILITIES.

All action and functions outlined herein shall be made effective through the issuance of procedural memoranda by the respective agencies.

BLM - Federal Highway Administration Interagency Agreement,

Road Program Review

5. TRANSPORTATION PLAN.

The BLM will have a transportation plan identifying all PLDR&T facilities for each State having PLDR&T facilities. Such plan shall have been developed through coordination with FHWA, State highway agencies, County road departments, Federal agencies, and other organizations having responsibilities for public or public use road and trail systems.

6. REVIEW OF LOCATION, TYPE, AND DESIGN.

The BLM will develop standards and procedures to be used in the determination of location, type, and design of all PLDR&T projects. Such standards and procedures shall be reviewed and approved by the FHWA before being implemented by the BLM. The FHWA shall notify the BLM within 30 days of receipt of the standards and procedures of approval or any additional requirements. If approval or notice of additional requirements is not received within 30 days, the standards and procedures submitted shall be considered approved.

7. ANNUAL PROGRAM OF PROJECTS.

Each BLM State Office will submit an annual program of construction projects to the Division Administrator of FHWA. The FHWA shall review such annual programs and determine if any additional requirements, such as on-site reviews, reviews of surveys, designs, specifications, and estimates, etc., are necessary prior to construction. The FHWA shall notify the BLM within 30 days of receipt of the annual program of approval or any such additional requirements. If approval or notice of additional requirements is not received within 30 days, the projects identified on the program or projects shall be considered approved as submitted.

8. GENERAL SUPERVISION OF CONSTRUCTION.

The FHWA shall have general supervisory responsibility for ensuring compliance with Federal Construction Guidelines and Standards. Activities in the furtherance of this responsibility shall be coordinated with the appropriate BLM State Office for providing specific construction inspections and/or supervision of PLDR&T projects. The FHWA shall determine individual projects that are to receive a final FHWA inspection prior to acceptance by the BLM, and arrangements shall be made for a joint BLM/FHWA inspection prior to final acceptance of selected projects.

9113 - ROADS

BLM - Federal Highway Administration Interagency Agreement,

Road Program Review

9. FINANCIAL ARRANGEMENTS.

Based on the limited scope of the PLDR&T program presently authorized, the FHWA will not request reimbursement for administrative costs incurred in connection with carrying out its responsibilities for PLDR&T projects under BLM supervision.

10. LIMITATIONS.

The BLM and FHWA agree that:

a. This agreement may be renegotiated or cancelled 30 days after written notice by either party;

b. All performance is subject to availability of appropriated funds and existent statutory authority;

c. Any novel, disputed, or other issue likely to cause stalemate shall be promptly reported to a higher echelon for resolution;

d. This agreement shall be reviewed at least every 3 years to determine if changes should be sought; and

e. This agreement replaces a similar agreement dated May 13, 1963, covering 23 U.S.C. 214 but does not abrogate, amend, or modify any other existing agreements between the BLM and the FHWA.

APPROVED:

Arnold E. Petty (Deputy)
Director, Bureau of Land Management

R. A. Barnhart
Federal Highway Administrator

FEB 26 1982
Date

9113 - ROADS

BLM Policy Statement for Transportation Management Associated With Onshore Energy/Mineral Lease Areas

POLICY STATEMENT
FOR
TRANSPORTATION MANAGEMENT
ASSOCIATED WITH
ONSHORE ENERGY/MINERAL LEASE AREAS

1. Description: This policy statement provides general guidance to Resource Managers for the coordination and management of transportation facilities on the public lands, used by or established in support of Onshore Energy and Mineral Lease Areas.

2. Objective: To manage the development and use of transportation facilities in energy/mineral resource development areas through the designation of access routes, corridors or areas of avoidance; prescribed standards of construction and maintenance; restoration and protection of the environment; and to provide for the maximum utilization by other resource users in a compatible and safe manner.

3. Background: Existing Bureau transportation policy, as it relates to onshore energy/mineral resource development, is not clearly defined and has been subject to varying interpretation across administrative boundaries.

   This lack of uniformity between administrative units is the cause of considerable concern in both the private and Government sectors. Part of this concern stems from a lack of definite policy and procedural guidance for managing transportation facilities, as they relate to energy/mineral resources, on the public lands.

   This policy statement is not intended to change any existing Bureau policy, but rather to reiterate both written and unwritten Bureau policy and emphasize to Bureau Resource Managers that there is procedural guidance available and there is a need to fully utilize this procedural guidance for the management of transportation facilities on the public lands.

4. This policy statement is directed toward onshore energy/minerals lease areas and is not intended to alter any grandfathered rights established through applicable Federal statutes.

A. POLICY STATEMENT -- IDENTIFICATION:

   The Bureau, through the resource management planning process, will identify major access requirements essential to the management of natural resources. For areas of energy/mineral resource development, the Bureau may use the resource management planning process to consider the need for additional access routes to develop the resource.

9113 - ROADS

BLM Policy Statement for Transportation Management Associated With Onshore Energy/Mineral Lease Areas

Major Principles and Standards

Planning

For areas of energy/mineral resource exploration and development, Managers will, prior to such development, identify and designate access routes, corridors, or areas of avoidance for transportation. Standards of access development, consistent with BLM 9113 Manual Section, will be designated for those routes or corridors identified.

Managers are encouraged to work jointly with energy/mineral developers in locating and establishing access routes.

Coordination between State and local governments, the Bureau, the Minerals Management Service, and other agencies is paramount to the development of an overall transportation network.

Existing roads will be the first consideration for use as mainline or primary access routes into areas of energy/mineral resource development and should be utilized whenever possible in lieu of new construction. The Bureau will not foster the proliferation of separate rights-of-way or perpetuate duplicate road systems on the public lands.

Road Use

Roads that are existing, acquired, constructed, or improved by the Bureau are available for use by developers of energy/mineral resources, within limitations as might be imposed by the Secretary of the Interior, through BLM.

Bureau roads that are jointly used shall be subject to reasonable road use rules. Road rules shall be uniformly applicable to all road users, and may include matters of speed, road limits, fire and safety equipment, and road closures. These road use rules will be set out in the appropriate use authorization.

B. POLICY STATEMENT -- CONSTRUCTION/IMPROVEMENT:

Any new road construction or improvement proposed by an applicant, developer, or operator in the development of an energy/mineral resource will be authorized, located, and constructed in compliance with applicable BLM directives, standards, and stipulations based upon users practical requirements.

Major Principles and Standards

Authorization

Construction or improvements, including those identified through the resource management planning process, will be authorized under a Right-

of-Way Grant, Application for Permit to Drill (A.P.D.), or Operations Plan. If bonding is required, follow requirements contained in the Use Authorization, A.P.D., or Operations Plan.

Permittees are responsible for the adequacy of work accomplished under terms of the permit or authorization, including work accomplished by others on behalf of the permittee.

Prior to the construction and subsequent utilization of roads on lands administered by the BLM, the developer will coordinate with the appropriate BLM office(s).

Construction and Improvement

Roads and bridges constructed or improved by others in the development of an energy/mineral resource will be constructed to applicable BLM Manual 9113 and 9112 standards and in compliance with applicable 9103 Manual Section requirements.

C. POLICY STATEMENT --MAINTENANCE:

It is required that energy/mineral developers maintain transportation facilities constructed or used by them, on the public lands, to the standards of construction or maintain existing facilities to the standard existing as of the date of first use or as specified in the use authorization. Developers may either undertake this maintenance in its entirety, enter into cooperative agreements with other users of the road, or cooperation with State and local governments in maintenance operations.

Major Principles and Standards

State and Local Governments

Insofar as possible, State and local governments should be encouraged to dedicate those development roads that serve the public and/or development areas and assume responsibility for regulating the use and maintenance of same.

Exchange of maintenance operation agreements between BLM, private companies, and State and local governments should be encouraged when advantageous.

Maintenance

Each licensee, permittee, or developer or other entity authorized to explore for or develop energy/mineral resources on the public lands shall be responsible for performing the work to maintain roads constructed and used by itself, its licensee, its permittees, or other individuals or corporations doing business with or for the individual or corporation.

Maintenance expenses and operations may be shared with other users, owners, controllers, or developers of energy/mineral resources by mutual agreement among the users of the transportation facility. The users sharing maintenance operations shall mutually agree, insofar as possible, upon the required maintenance and work to be done upon the particular transportation facilities involved.

D. POLICY STATEMENT -- OBLITERATION/RESTORATION:

Roads identified for retention by BLM will be maintained to a Bureau designated standard before acceptance by the Bureau.

Roads no longer required will be closed, obliterated, and the site restored for other resource use.

Major Principles and Standards

Retention

Roads identified for retention by the Bureau for multiple use management purposes will be returned to the design standard of construction; or highest standard achieved by use; or BLM designated alternative. Under no circumstances is the road to be maintained at the conclusion of use to a higher standard than is needed for future resource access use.

Obliteration and Rehabilitation

Roads constructed in support of resource development and not identified for retention by BLM management will be obliterated, and the land restored to the original contour lines and rehabilitated, or to an acceptable BLM designated alternative at the completion of development activities. The rehabilitation is to be accomplished by the holder of the use authorization, before the authorization is terminated.

Concur:

Robert F. Burford
Director

6/24/82
Date

9113 - ROADS
BLM-FHWA Memorandum of Agreement
Highway Safety Program Standards

Memorandum of Agreement Between the
Bureau of Land Management and the
Federal Highway Administration

1. PURPOSE

The purpose of this Memorandum of Agreement between the Bureau of Land Management (hereinafter referred to as BLM) and the Federal Highway Administration (hereinafter referred to as FHWA) is to prescribe the elements of the Highway Safety Program Standards administered by the FHWA which are applicable to the BLM and the implementation responsibilities and requirements of the BLM. It is not intended that the BLM is required to duplicate responsibilities of and services provided by State or local governments on highways controlled by the BLM.

2. DEFINITIONS

The following are definitions of terms in this memorandum:

Public Lands Development Roads and Trails (PLDR&T) - The term Public Lands Development Roads and Trails shall mean those roads or trails which the Secretary of the Interior determines are of primary importance for the development, protection, administration, and utilization of public lands and resources administered by the BLM.

Open to Public Travel - "Open to public travel" means that the road section is available, except during scheduled periods, extreme weather or emergency conditions, passable by four-wheel standard passenger cars, and open to the general public for use without restrictive gates, prohibitive signs, or regulation other than restrictions based on size, weight, or class of registration. Toll plazas of public toll roads are not considered restrictive gates.

3. APPLICABILITY

23 CFR 1230.3 provides as follows:

> Pursuant to 23 U.S.C. 402, the highway safety program standards set forth in this chapter are applicable to Federal departments and agencies that control highways open to public travel within federally administered areas or supervise traffic operations on such highways, to the extent that they engage in activities covered by the highway safety program standards set out in this chapter. (emphasis added)

4. REQUIREMENTS

23 CFR 1230.4(a) provides, in part, as follows:

> "Each department or agency shall implement the highway safety program standards, to the extent that they are relevant to the department or agency . . ." (emphasis added)

9113 - ROADS
BLM-FHWA Memorandum of Agreement
Highway Safety Program Standards

5. AGREEMENT

(a) It is understood and agreed by and between the BLM and the FHWA that, except as provided in subparagraphs (b) and (c) of this paragraph, all of the requirements of highway safety program standards 9, 12, 13, and 14, administered by the FHWA, are applicable to the BLM roads open to public travel. It is understood and agreed by and between the BLM and the FHWA that sections II and V of Standard 14 are administered by the FHWA.

(b) It is understood and agreed by and between the BLM and the FHWA that the following elements of the standards administered by the FHWA are not relevant to the activities of the BLM and, therefore, are not applicable to the BLM:

Standards	Paragraph	Subject
12	I B	Safe traffic environment for pedestrians in residential areas.
12	I C	Roadway lighting.
12	I J 5	Protective features at playgrounds, schoolyards, and commercial areas.
12	I K 1	Emergency care signs at freeway interchanges.
12	I K 3	Freeway access and egress for emergency vehicles.
14	II B	Land use planning for safe pedestrian movement.
14	II D	Environmental illumination.
14	V	Protection of children going to and from school and at play.

(c) It is understood and agreed by and between the BLM and the FHWA that the requirements of the following elements of the standards administered by the FHWA are being provided by State or local governmental agencies or by other Federal agencies under agreement with the BLM.

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BLM-FHWA Memorandum of Agreement
Highway Safety Program Standards

Standards	Paragraph	Subject
12	1 D	Standards for pavement design with high skid resistance qualities.
12	1 E	Resurfacing roads with low skid resistance.
12	1 G	Systematic identification and tabulation of all rail-highway grade crossings and a program for the elimination of hazards and dangerous crossings.
13	1 D 8	Traffic engineering studies to establish traffic regulations such as fixed or variable speed limits.

(d) Under 23 CFR 1230.4, the BLM will:

(1) Review the current status of its activities with regard to the relevant requirements of the standards.

(2) Cooperate with State and local governmental agencies on the implementation of other provisions of the highway safety standards applicable to PLDR&T.

(3) Submit to the FHWA for review, road design standards, and related safety features.

(4) Issue manualized directives requiring the appropriate BLM official responsible for the road, to coordinate with the appropriate BLM safety official on the surveillance, monitoring and identification of potentially high traffic accident locations.

6. EXECUTION AND EFFECTIVE DATE

This Memorandum of Understanding is executed on behalf of the Bureau of Land Management by the Director of the Bureau of Land Management, and on behalf of the Federal Highway Administration by the Federal Highway Administrator, and it is effective as of the last date written below.

Acting Director
Bureau of Land Management

JUN 11 1984
Date

Federal Highway Administration

JUN 22 1984
Date