



**PIMA COUNTY
DEVELOPMENT SERVICES DEPARTMENT**

201 N. Stone Avenue, 1st Floor
Tucson, Arizona 85701-1207

CARLA BLACKWELL
Director

Phone: (520) 740-6520
FAX: (520) 798-1843

September 14, 2020

Page 1 of 5

HEARING ADMINISTRATOR'S FINDINGS AND DECISION

P20CU00001

WILCOXEN — W. MANVILLE ROAD

Type I Conditional Use – Campground

Background & Authority

Chapter 18.97, in accordance with Section 18.13.030 of the Pima County Zoning Code, requires a Type I conditional use permit (CUP) for a campground (considered an “other use which is similar in type, scale, and intensity as other listed conditional uses”) on property zoned RH (Rural Homestead). (District 3)

Particulars of the Request

This particular request pertains to a proposed campground on private property that is adjacent to public lands in the form of Ironwood Forest National Monument. The site is approximately ten miles west of the intersection of Manville Road @ Sandario Road.

The applicant intends to offer primitive-style camping sites without individual water or electric service. The intention is to serve “adventure style” campers; large recreational vehicles are not appropriate given the remote location of the property and the long segment of primitive, unimproved roadway by which it is reached (more on this topic below). The applicant will provide a centralized shower and bathroom building, also therein offering wifi and some community electrical outlets. While ultimately envisioning fifty sites, they will begin with a smaller number and then add more over time as market demands indicate.

With respect to access, it should be noted that the Manville Road pavement ends approximately six miles west of its intersection with Sandario Road. From that point westward to the site, it is a primitive dirt road that exists only within a right-of-way easement (also known as Agua Blanco Ranch Road) through the Ironwood Forest National Monument. This segment of the road is primitive at best, with multiple difficult wash crossings. It is not suitable for most any vehicle that does not possess a high clearance and four-wheel drive capability. For this reason, the treatment of this roadway received significant attention during this conditional use permit process from the Bureau of Land Management, the Pima County Department of Transportation, the applicant, and the Hearing Administrator.

Public Hearing

In accordance with Pima County Zoning Code Section 18.97.030.F.3, a public hearing was opened on this application on June 29, 2020. The hearing was conducted telephonically due to the prevailing Covid-19 pandemic. Due to the aforementioned access issue pertaining to Manville Road (Agua Blanco Ranch Road) being as yet unresolved at that time, the public hearing was continued. The final public hearing on this application ultimately occurred on September 9, 2020. At same, the applicant's representative (Mr. William Jones) and a representative of the Bureau of Land Management (Ms. Colleen Bergmanis) were in concurrence as to suitable provisions for roadway maintenance by the property owner/applicant.

No (0) other individuals from the public attended the hearings to speak on this application and no other issues of note were raised during the public hearing process. All parties were generally accepting of a primitive-camping use at this location, given its remote setting and significant scenic beauty. The primary concern all along has been with providing suitable vehicular access to potential campers.

Staff reported that no (0) other public comment, telephone calls, emails or correspondence had been received on this request.

After hearing all of the above, the Hearing Administrator thanked the parties for working together to address the access issue and verbally indicated his intention to approve the application, subject to certain special conditions designed to frame the intended camping use as described in the submitted application.

Hearing Administrator's Comments

The Hearing Administrator thanks the Bureau of Land Management (BLM) for providing the suggested wording for a special condition addressing the maintenance of Manville Road (Agua Blanco Ranch Road) through the Ironwood Forest National Monument. The Hearing Administrator also thanks the owner and their applicant/representative for working in good faith with the BLM to satisfactorily resolve this issue.

Required Standards and Findings

Following are the Hearing Administrator's findings relative to the standards set by Pima County Code Sec. 18.97.030.F.3.c. These Sections stipulate that the following standards be met by the proposed use:

1. It will not be in serious conflict with the objectives of the general land use plan or the area plan in which situated.

The Comprehensive Plan designates the subject site as *Resource Sensitive (RS)*, the purpose of which is to identify land holdings with environmentally sensitive characteristics within close proximity to public preserves (such as national parks) and to help ensure uses which are compatible with same. In the present case, the *RS* designation applies due to the proximity of both the Ironwood Forest National Monument and, further to the east, Saguaro National Park West.

It is the Hearing Administrator's finding that, when operated under the stipulated special conditions attached to this approval, the proposed primitive-camping use is wholly compatible with the nearby public preserves and is not in conflict with the stated goals of the Comprehensive Plan.

2. It will provide safeguards for the protection of adjacent developed property, or if the adjacent property is undeveloped, for the legal permitted uses of such property.

The Hearing Administrator finds that the proposed use can coexist peacefully and respectfully with the surrounding public preserves and private properties and their legally permitted uses, as long as it is operated in accordance with the Special Conditions stipulated herein.

3. It has adequate accessibility to the County road network.

Access has been the central issue of this entire application, due to the primitive and unmaintained nature of the western segment of Manville Road (Agua Blanco Ranch Road). While the proposed use is a comparatively minimal traffic generator, it will bring a higher level of traffic than is now the case and, as importantly, will attract more private passenger vehicles with questionable ability to navigate a rough, primitive roadway possessing multiple challenging wash crossings. Provisions for going-forward roadway maintenance by the owner/applicant have been included in the special conditions of this approval. With these provisions in place, the Hearing Administrator finds access to be adequate.

4. It has sufficient off-street parking and loading facilities, that will be developed in accordance with County engineering standards.

Parking sufficiency and compliance with the Zoning Code will be verified during the review of the site plan required by the proposed Special Conditions.

5. It will meet County standards in terms of control of noise, smoke, glare or heat, odors, vibrations, fly, ash, dust, fumes, vapors, gasses, and other forms of air pollution, liquids and solid wastes.

The proposed use will not impact the surrounding properties in any of the above ways, nor otherwise interfere with their routine use. Special Conditions have been proposed to ensure the ultimate size and intensity of the campground going forward.

6. Hours of operation will not be detrimental to adjoining residents.

Hours of operation are found to not be an issue in this case. The site will serve short-term campers and provide for the type of passive activities that are compatible with the public preserve surrounding it. When operated in accordance with the proposed Special Conditions, the proposed use is found to not be detrimental to any adjoining properties.

7. Landscaping will be fully in conformance with zoning code regulations.

Landscaping requirements, if any, are a matter that will be verified with the review of the required site plan.

Hearing Administrator's Decision

This application for a Type I conditional use permit for a campground, on property zoned RH, is hereby **approved** by the Hearing Administrator, subject to the following standard and special conditions:

Standard Conditions

The Pima County Zoning Code allows the proposed use within the RH zone, subject to the Type I conditional use permit process.

Special Conditions

1. This conditional use permit approval is for a primitive/adventure-style campground and its customary appurtenant activities and uses for the campers, such as night-sky observation and “star parties”, western-themed cook-outs, and a centralized shower and bathroom building. No other non-residential or commercial uses are implied or approved for the property.
2. Special events and larger group gatherings, involving non-camper guests, such as weddings, planned celebrations, and/or other organized affairs are expressly prohibited.
3. The expectation of this use is that it is for primitive/adventure-style campers using private vehicles with the suitable clearance and four-wheel drive capability sufficient to safely navigate the primitive nature of Manville Road (Agua Blanco Ranch Road). Recreational vehicles (RV’s) and campers without such four-wheel drive capability and vertical clearance are not allowed.
4. The campground is limited to a total of no more than fifty (50) spaces. The use shall substantially adhere to the conceptual site plan submitted with this conditional use permit application. Any desired expansion of the campground by the applicant beyond the above fifty (50) spaces, or adding any more centralized facilities, will require a new CUP, public notice, and public hearing process.
5. No formal Development Plan or Site Construction Permit shall be required, other than that which may be required to satisfy Building Code requirements for the proposed centralized building.
6. The applicant shall submit, however, a more formal site plan with appropriate notes and drawn to scale, to the Pima County Chief Zoning Inspector, who is then tasked with reviewing it, coordinating as needed with other County reviewing departments, and for determining any related permits necessary to ensure compliance with applicable codes (e.g. Floodplain Use Permit and Riparian Habitat Mitigation requirements).
7. The access road to the property (Manville Road/Agua Blanco Ranch Road) shall be maintained by the landowner to a Primitive Road Type “B” standard; the details of this standard can be found in *Appendix E of the Ironwood Forest National Monument (IFNM) Transportation Maintenance Guidelines* document.
8. The designated check-in area for the campground does not require asphalt paving. Gravel or a similarly durable surface is acceptable, with the exception of any handicapped accessible parking spaces and routes, which shall be asphalt or concrete.
9. No amplified music is allowed and all group activities (such as cook-outs or “star parties”) shall conclude no later than 10:00 PM.
10. Any outdoor lighting fixtures shall comply with the Pima County Outdoor Lighting Ordinance.
11. The owner/applicant shall work in good faith with the Bureau of Land Management for the provision of signage along Manville Road (Agua Blanco Ranch Road).

Protest Period and Appeal Procedures

As is the case with all Type I conditional use permit applications, this decision is subject to a statutory 30-day protest period from the date of this decision. If a valid protest is received within the 30-day period from a property owner within the formal notification area, an appeal hearing will be scheduled before the Board of Supervisors, who shall then make the final decision on this conditional use permit. Given that the Hearing Administrator rendered his verbal approval of this application at the September 9, 2020 public hearing, the 30-day protest period shall commence from this public hearing date.

Any party interested in filing an appeal should contact Mr. Tom Nicholas Coussoulis, Senior Planner, at phone number 724.9000. Please be advised that filing fees apply to any appeal, and that these fees are payable by the party filing the appeal request.

Respectfully Submitted:



Jim Portner
Pima County Hearing Administrator

September 14, 2020
Date

APPENDIX E
TRANSPORTATION MAINTENANCE GUIDELINES
Ironwood Forest National Monument
Travel Management Plan

Maintenance guidelines for Monument Roads and Primitive Roads are established to achieve consistency in the way that Monument routes are maintained, and to ensure that only minimal maintenance work is accomplished for the access purposes that the different routes serve as identified in the land use allocations made in the IFNM RMP and the route designations established concurrently.

Monument transportation routes provide access for administrative purposes that require access by different types of vehicles depending on the management activities (i.e. special projects, resource surveys, monitoring, law enforcement and emergencies) including sport utility vehicles, off highway vehicles, 4WD trucks, service trucks, wild land fire engines, and transports for construction and maintenance equipment. Monument access routes also provide access for the use, maintenance and operation of existing facilities and improvements under current land use authorizations (i.e. utilities, transportation, communication sites, range improvements, wildlife waters) that need access by different types of vehicles for normal inspection, maintenance, and emergency repairs. The Monument routes also provide access to not-federal land inholdings, including residential areas and ranch headquarters which need access by passenger car and livestock trailer trucks. The routes also provide access for outdoor recreational use by the general public who visit the Monument by variety of motor vehicle types, including passenger car, pick up truck, motor home and various off highway vehicles. The different types of vehicles using Monument routes have differing physical characteristics and performance capabilities, which were considered in developing maintenance guidelines for Monument roads, primitive roads and trails.

Monument Primitive Roads will be maintained according to the guidelines described in this Appendix until standards for BLM Primitive Roads are established, as indicated in current Bureau travel management guidance¹, road maintenance guidance², and trail maintenance guidance³.

Maintenance according to these guidelines will ensure that reasonably reliable access by the type of vehicle identified in the TMP for roads and primitive roads is available. Routes maintained according to the different types of routes will be available for public use by vehicles that have similar geometric requirements based on the access vehicles' characteristics, performance and capabilities of the driver/operator. Maintenance standards and guidelines for administrative routes by public would allow physical access by medium class vehicles, but would be subject to the use restrictions and limitations described in the TMP.

¹ BLM Handbook, H-8342 Travel and Transportation Handbook, Bureau of Land Management, (page 116).

² BLM Manual 9113 - Roads.

³ BLM Manual 9114 - Trails.

1. Transportation Assets:

The Monument transportation assets to be maintained under this program include Roads, Primitive Roads, and Trails, according to BLM-wide definitions⁴. These definitions are constrained by the language of the Proclamation prohibiting “all motorized and mechanized vehicle use off road”, and to meet local Monument access needs, as noted below.

- a. **Road:** Linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.
- b. **Primitive Road:** A linear route managed for 4WD or high-clearance vehicles. Primitive Roads do not normally meet any BLM road design standards. Two types of Primitive Roads are defined to accommodate access needs in the Monument, as described in section 3 below.
- c. **Trail:** Linear route managed for human-powered, stock, or off-highway vehicle forms of recreation or for historic or heritage values. Trails are not generally managed for use by 4WD or high-clearance vehicles. Trails in the Monument are limited to non-motorized human- or livestock-powered travel.

2. Maintenance Intensities:

BLM Route Maintenance Intensities provide guidance for appropriate “standards of care” to recognized routes within the BLM. Recognized routes by definition include Roads, Primitive Roads, and Trails carried as Assets within the Bureau of Land Management Facility Asset Management System (FAMS).

Maintenance Intensities provide consistent objectives and standards for the care and maintenance of BLM routes according to identified management objectives. Maintenance Intensities are consistent with land-use planning management objectives (for example, natural, cultural, recreational setting, and visual quality). Maintenance Intensities provide operational guidance to field personnel on the appropriate intensity, frequency, and type of maintenance activities that should be undertaken to keep the route in acceptable condition and provide guidance for the minimum standards of care for the annual maintenance of a route.

Maintenance Intensities do not describe route geometry, types of route, types of use, or other physical or managerial characteristics of the route. Those items are addressed as other descriptive attributes to a route. Maintenance Intensities provide a range of objectives and standards, from “identification for removal” through “frequent and intensive maintenance”.

The definitions for BLM Transportation maintenance intensities are:

- a. **Level 0 Maintenance Description:** Existing routes that will no longer be maintained or declared as routes. Routes identified as Level 0 are identified for removal from the transportation System entirely.

⁴ Roads and Trails Terminology Technical Note 422, November 2006, U.S. Department of the Interior, Bureau of Land Management, Washington D.C. 20240

Maintenance Objectives: No planned annual maintenance. Meet identified environmental needs. No preventive maintenance or planned annual maintenance activities.

Maintenance Funds: No annual maintenance funds allocated.

- b. **Level 1 Maintenance Description:** Routes where minimal (low-intensity) maintenance is required to protect adjacent lands and resource values. These roads may be impassable for extended periods of time.

Maintenance Objectives: Low (Minimal) maintenance intensity. Emphasis is given to maintaining drainage and runoff patterns as needed to protect adjacent lands. Grading, brushing, or slide removal is not performed unless route bed drainage is being adversely affected, causing erosion. Meet identified resource management objectives. Perform maintenance as necessary to protect adjacent lands and resource values. No preventive maintenance. Planned maintenance activities will be limited to environmental and resource protection. Route surface and other physical features are not maintained for regular traffic.

Maintenance Funds: Maintenance funds provided to address environmental and resource protection requirements. No maintenance funds provided to perform preventive maintenance.

- c. **Level 2 RESERVED FOR POSSIBLE FUTURE USE**

- d. **Level 3 Maintenance Description:** Routes requiring moderate maintenance because of low-volume use (e.g., seasonally or year-round for commercial, recreational, or administrative access). Maintenance Intensities may not provide year-round access, but are intended to generally provide resources appropriate for keeping the route in use for the majority of the year.

Maintenance Objectives: Medium (Moderate) maintenance intensity. Drainage structures will be maintained as needed. Surface maintenance will be conducted to provide a reasonable level of riding comfort at prudent speeds for the route conditions and intended use. Brushing will be conducted as needed to improve sight distance when appropriate for management uses. Landslides adversely affecting drainage will receive high priority for removal; otherwise, they will be removed on a scheduled basis to meet identified environmental needs. Generally, they will be maintained for year-round traffic, including the annual maintenance necessary to protect adjacent lands and resource values. Preventive maintenance will be performed as required to generally keep the route in acceptable condition. Planned maintenance activities should include environmental and resource protection efforts, and annual maintenance of the route surface. Route surface and other physical features are maintained for regular traffic.

Maintenance Funds: Maintenance funds provided to preserve the route in the present condition, perform planned preventive maintenance activities on a scheduled basis, and address environmental and resource protection requirements.

- e. **Level 4 RESERVED FOR POSSIBLE FUTURE USE**

- f. **Level 5 Maintenance Description:** Routes for high (Maximum) maintenance because of year-round needs, high-volume traffic, or significant use. Also may include routes identified through management objectives as requiring high intensities of maintenance or to be maintained open year-round.

Maintenance Objectives: High (Maximum) maintenance intensity. The entire route will be maintained at least annually. Problems will be repaired as discovered. These routes may be closed or have limited access because of weather conditions but are generally intended for year-round use. Meet identified environmental needs. Generally maintained for year-round traffic. Perform annual maintenance necessary to protect adjacent lands and resource values. Perform preventive maintenance as required to generally keep the route in acceptable condition. Planned maintenance activities should include environmental and resource protection efforts, annual route surface. Route surface and other physical features are maintained for regular traffic.

Maintenance Funds: Maintenance funds provided to preserve the route in the present condition, perform planned preventive maintenance activities on a scheduled basis, and address environmental and resource protection requirements.

The maintenance guidelines for Monument routes identify the key geometric elements and typical dimensions required accommodate the type of access and vehicles the routes are intended to serve. These guidelines will be applied on maintenance projects for existing routes, and on any reconstruction or new construction. The environmental impact analysis of the Monument transportation maintenance program is based on the changes and modifications to existing route conditions required to maintain them in proper condition (vegetation clearance trimming, removal of plant growth in travel way, re-grading and reconstructing the road bed, etc.).

3. Primitive Road Maintenance Guidelines

The designated road and primitive road network in the Monument is in poor condition and the travel way, drainage, and vegetation clearance need to be maintained so the routes continue to provide the access purpose they serve. The roads and primitive roads have important administrative access needs that need to be accommodated, and they also have characteristics that are important for the recreational experience of Monument visitors in the different Recreation Management Zones established for the Monument. The existing roads and primitive roads were developed over time for mining, utilities and range improvement, and current condition vary greatly and affect the route's use-ability (grade steepness, roughness, travel-way width, horizontal and vertical alignment, side and overhead vegetation clearance).

Monument access vehicles identified in the (passenger cars, light trucks, stock 4WD high clearance vehicles, routes requiring use of all-terrain vehicles only, or to other OHVs with extremely capable equipment and driving skill.

The maintenance guidelines identify the desired physical condition of the different transportation assets, the type of access accommodated, and the ROW needs associated with the different types of motorized routes.

A. Typical Road Maintenance:

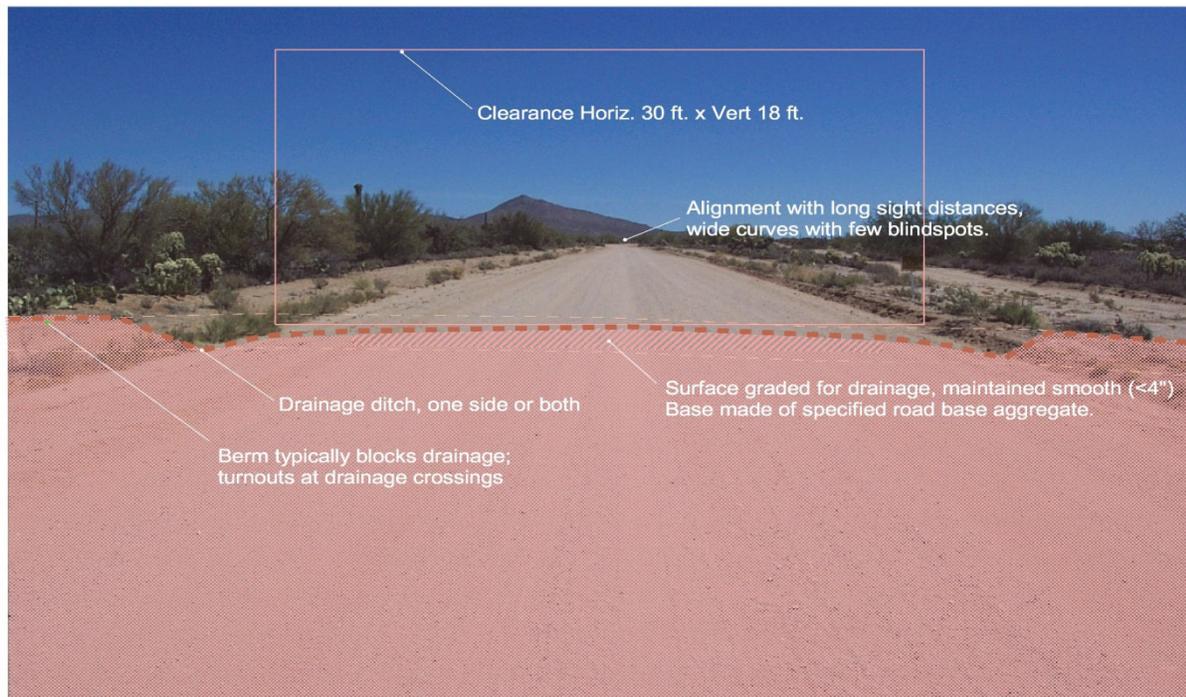


Figure E-1. **Typical Road:** Two lane roads used for general access to the Monument from the local public highways, used by all types of vehicles including wild land fire and emergency vehicles, passenger car and minibus. These roads maybe under a right of way to the local county, and are subject to county road standards. Roads across Monument lands may be improved to standards for low volume rural roads in accordance with BLM engineering handbook H-9113, and AASHTO standards for low volume roads⁵ to minimize impacts on Monument objects.

- a. Functional class: 'Collector', 'Local' or 'Resource'.
- b. Maintenance intensity: Level 5.
- c. Traffic type: All vehicle types (passenger car, motor home, trailer towing vehicles, heavy trucks and equipment).
- d. Traffic volume: Low volume, under 250 vehicles per day, varies seasonally with peak use in fall, winter and spring. Engineering analysis required with daily traffic levels of 150 to 250 vehicles.
- e. Speed: 35 miles per hour or higher.
- f. Cut and Fill Banks: Graded 3:1, or at angle of repose depending on soil conditions. Allow natural revegetation outside ditch.
- g. Travel way width: 24 feet overall, two lanes (plus 1:3 ditch one or both sides).
- h. Curves and alignment: Curvilinear alignment will be designed to promote low speeds. Typically open and broad horizontal curves, with gently rolling vertical curves; large radius over 200 feet, per engineering analysis.

⁵ Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT \leq 400), American Association of State Highway and Transportation Officials, 2001.

- i. Driving surface: Asphalt or aggregate pavement, depending on engineering analysis. Roads in soils prone to fugitive dust will be surfaced with aggregate to minimize impacts on air quality.
- j. Grades: Flat to gentle grades, 12% max.
- k. Drainage: Crowned or outsloped depending on site conditions. Ditched on one or both sides, with lead off ditches as needed. Stabilized low water crossings with improved approaches; culverts or other drainage structures may be used at natural drainage crossings to achieve objectives.
- l. Vegetation clearance: Side clearance 4 feet from edge of roadway, 16 to 20 feet overhead clearance.
- m. Construction/maintenance equipment: Access by standard road maintenance equipment (motor grader, water truck, backhoe and 12-20 yard dump truck).

B. Typical Primitive Road Type A:

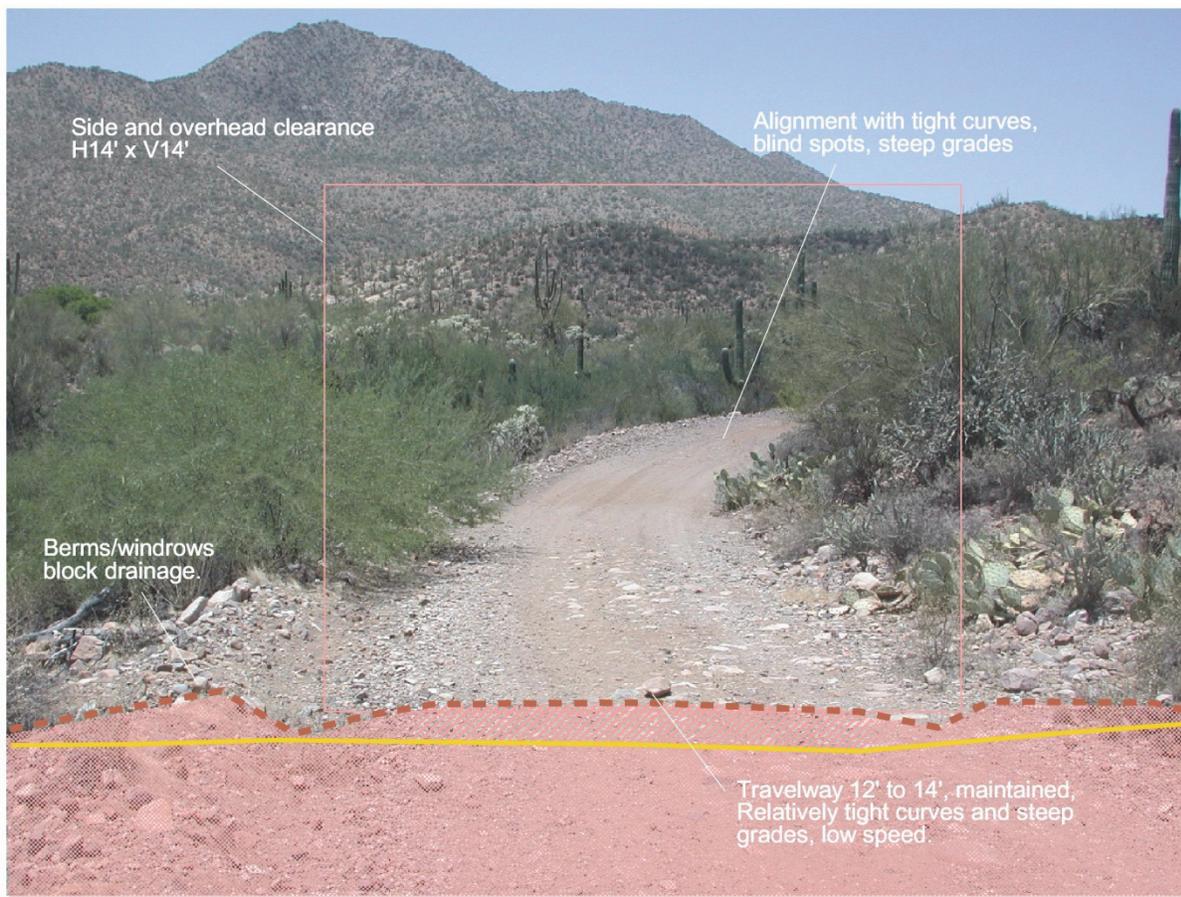


Figure E-2. **Typical 'Type A' Primitive Road:** Narrow single lane, low volume, low speed primitive road used by Type 6 wild land fire engine, utility line truck and other vehicles for administrative purposes and public use. Some of these roads are designated for administrative vehicles only (service roads for utility rights of way including natural gas transmission pipeline, electric powerlines and high voltage transmission lines), and are open to public use by non-motorized travel only. These routes are not intended to accommodate passenger car access or mini-bus, though may be temporarily useable by these vehicles for a period after maintenance work.

- a. Functional class: 'Local' or 'Resource'.
- b. Maintenance intensity: Level 3.
- c. Traffic type: Administrative and emergency access by Type 6 wild land fire engine. Predominantly high clearance 2WD or 4WD vehicles, and OHVs (all-terrain vehicle, utility vehicle, motorcycle).
- d. Traffic volume varies depending on time of year, type of route and location. ADT 50 to 150 vehicles during peak times (fall-winter-spring weekends, holidays, and events).
- e. Speed: 15 miles per hour.
- f. Cut and Fill Banks: At angle of repose depending on soil conditions. Allow natural revegetation.
- g. Travel way width: 14 feet with turnouts or spot widening.
- h. Curves and alignment: Short radius (<25 ft.) horizontal curves common, with rolling vertical curves.
- i. Driving surface: Natural soil, unpaved surface (bedrock, consolidated stone/cobble, gravel). Roads on soils prone to fugitive dust will be capped with aggregate to minimize air quality impacts
- j. Grades: Gentle to moderate grades depending on topography (max. 12%).
- l. Drainage: Open or confined by berms, waterbars and turnout ditches at intervals depending on natural drainage patterns and soil type. Low water crossings typically, with culverts in spots.
- k. Vegetation clearance: Minimal side clearance (12 to 14 feet horizontal, 16 feet overhead).
- l. Construction/maintenance equipment: These roads typically have a narrow travel way and restricted operating clearance. Road maintenance requiring earthwork will be performed using small construction equipment to minimize collateral disturbance to adjacent soils and vegetation. Dozer with 6-way blade less than 11 ft. width will be used (Caterpillar D3C, D3G, D4G, D4H, or equivalent, Sweco tractor)

Maintenance on roads limited to administrative vehicles will only be performed when the authorized utility infrastructure requires maintenance work and access by line trucks and other vehicles, and will be subject to case by case notifications and approval by BLM.

C. Typical Primitive Road Type B:

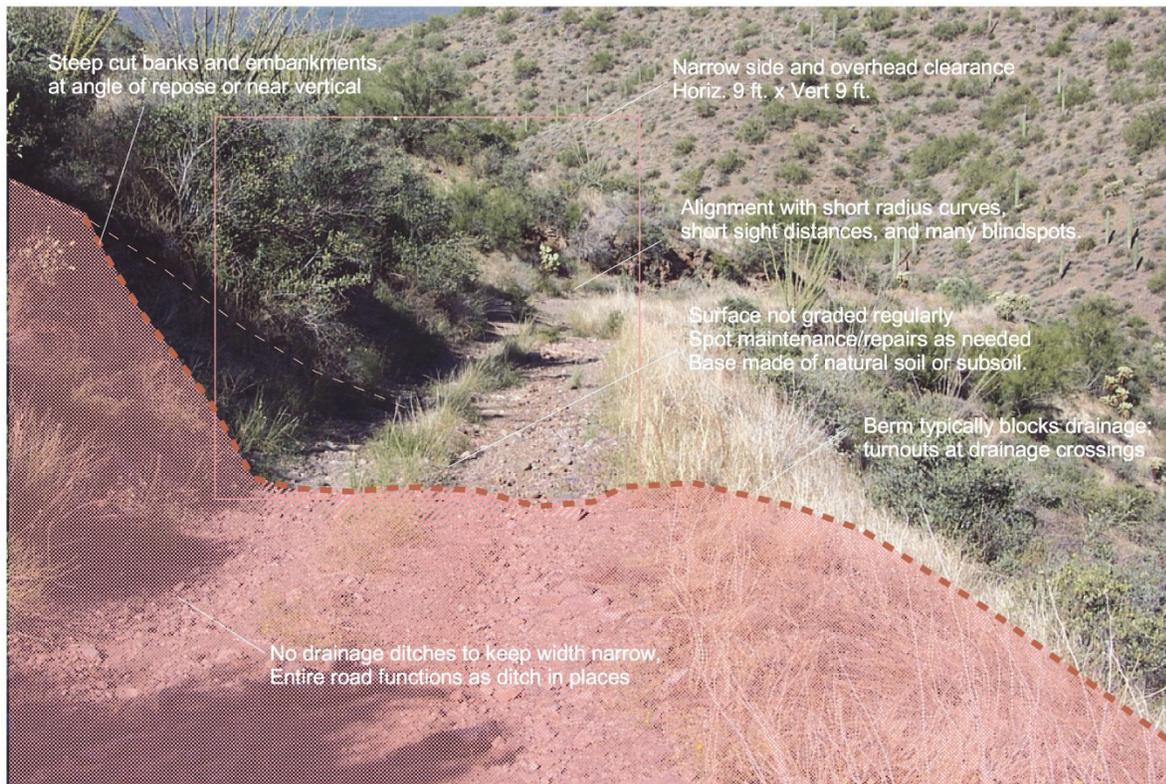


Figure E-3. **Typical ‘Type B’ Primitive Road:** Very narrow, low volume, low speed single lane road used by 4WD and OHV’s for general administrative and recreational access. Not intended to accommodate 2WD, passenger car, or minibus. Land use activities will be constrained by narrow, rough primitive road conditions. These routes may be improved to meet temporary access needs on a case by case basis, subject to project specific plans and clearances.

- a. Functional class: ‘Resource’.
- b. Maintenance intensity: Level 1.
- c. Traffic Type: Administrative and public use by predominantly high clearance 4WD vehicles, and OHVs (all-terrain vehicle, utility vehicle, motorcycle), and mixed non-motorized mechanized public travel (mountain bike, equestrian, hiking).
- d. Traffic volume: Very low and seasonal; ADT 50 or less vehicles, with use occurring during peak times (hunting season opening days, fall-winter-spring weekends, holidays, and special events).
- e. Speed: Very low speed, 5 to 15 miles per hour.
- f. Cut and Fill Banks: At stable angle of repose depending on soil conditions. Preserve natural vegetation growth if not interfering with travel-way.
- g. Travel way width: 10 feet with inter-visible passing turnouts, or spot widening.
- h. Curves and alignment: Tight and numerous horizontal and vertical curves common; curve radius <25 feet.
- i. Driving surface: Natural soil, unpaved, rough surface (bedrock, consolidated stone/cobble, gravel); roads on soils prone to fugitive dust will be capped with aggregate to minimize air quality impacts.
- j. Grades: moderate to very steep grades depending on topography (12% to 18%).

2. Drainage: Roadbed typically out-sloped at 6% for unobstructed cross drainage. Road sections obstructed by berms will be drained by clearing the berm, installing water bars and lead-off ditches at intervals depending on grade, natural drainage patterns and soil type. Low water crossings typically, with culverts in spots.

Sections of road entrenched by erosion (with the road grade down cut and below the prevailing ground surface, and under-cut natural drainage crossings) will be reconstructed to raise the road grade for proper drainage.

- k. Vegetation clearance: Minimal side clearance (10 feet, may encroach roadway to 8 feet). Overhead clearance 9 feet. Vegetation regrowth in travel way allowed.
- l. Construction/maintenance equipment: These roads typically have a very narrow travel way with limited operating clearance. Road maintenance requiring earthwork will be performed using the smallest conventional construction equipment available to minimize collateral disturbance to adjacent soils and vegetation. A dozer with 6-way blade less than 8 ft. width will be used (Komatsu D21A-8 or D21A-6, Caterpillar D4G or D4B, or equivalent, Sweco tractor).

D. Typical Trail:



Figure E-4. **Typical Trail, Non-Motorized, Non-Mechanized travel:** Narrow, low volume, single track trail used by hikers and equestrian riders for administrative and recreational access in primarily a wildland setting. These

trails are not intended to accommodate mountain bicycles, which are required to stay on designated roads and administrative roads by the Monument proclamation. Existing routes identified for closure will generally remain open to public use for non-motorized mechanized travel. Those routes will be allowed to reclaim naturally, and may be maintained to trail standards to accommodate passage by equestrians and hikers.

- a. Functional class: 'Resource'.
- b. Maintenance intensity: Level 1.
- c. Traffic Type: Administrative and public use by non-motorized non-mechanized (equestrian, hiking).
- d. Traffic volume: Very low and seasonal.
- e. Speed: Very low, 2 to 4 miles per hour.
- f. Cut and Fill Banks: At stable angle of repose depending on soil conditions. Preserve natural vegetation growth if not interfering with travel-way.
- g. Travel way width: 24" to 30".
- h. Curves and alignment: Following natural contours, tight and numerous horizontal and vertical curves common; curve radius 6 to 8 feet.
- i. Driving surface: Natural soil, unpaved, rough surface (bedrock, consolidated stone/cobble, gravel); roads on soils prone to fugitive dust will be capped with aggregate to minimize air quality impacts.
- j. Grades: Gentle to moderate with few steep grades if required by topographic conditions (max. 12% to 16%).
- k. Drainage: Trail bench typically out-sloped at 6% for unobstructed cross drainage. Trail sections that become ditched over time, or obstructed by berms will be drained by re-grading the outslope, clearing or breaching the berm, rolling the grade, installing water bars and lead-off ditches at intervals depending on grade, natural drainage patterns and soil type. Low water crossings typically.
- l. Vegetation clearance: Minimal side clearance (5 to 6 feet). Overhead clearance 9 feet. Low-growing vegetation will be allowed to encroach the clear zone.
- m. Construction/maintenance equipment: Trails typically have a very narrow travel way with a limited operating platform and clearance. Trail maintenance will be done with hand tools and equipment. Maintenance work requiring excavation or earthwork will be performed using power tools (gas or electric jack hammer). A mini-excavator may be used for trail work requiring relatively extensive excavation for efficiency or effectiveness of the effort (Takeuchi TB108, Kubota K008-3 or equivalent).

E. Typical Overland Route:



Figure E-5. **Typical Overland Access Route:** Narrow, very low volume, two track vehicle access route used for authorized administrative purposes for maintenance, operation, repair or replacement of existing facilities or improvements, or special projects that require vehicle access to transport tools, materials or supplies that can-not be transported by non-motorized means. These routes include existing routes previously constructed, but are not intended to accommodate regular on-going vehicle traffic. These routes will be allowed to reclaim naturally after each use, and restoration treatments may be applied if disturbance is likely to attract more use, or have a persistent impacts.

- a. Functional class: 'Resource'. These routes provide access to project sites or existing improvements or facilities that require very infrequent vehicle access.
- b. Maintenance intensity: Level 0. Travel way allowed to revegetate naturally
- c. Traffic Type: Administrative vehicles, depending on specific needs (truck, service vehicle, heavy equipment, fire engine, equestrian, hiking).
- d. Traffic volume: Very infrequent, one vehicle crew trip a year or less.
- e. Speed: Very low, 0 to 1 miles per hour; walking speed.
- f. Cut and Fill Banks: If the overland route uses an originally constructed roadbed, existing cut and fill slopes will be left 'as-is'. Preserve natural vegetation growth if not interfering with travel-way. Apply treatments to stabilize slope or bank erosion damaging resources or interfering with reclamation.

- g. Travel way width: 10' to 12', depending on the type of vehicle used.
- h. Curves and alignment: Following natural contours and openings in vegetation, no set curve or alignment, other than maneuvering the vehicle through tight and numerous horizontal and vertical curves, with aid of spotter common.
- i. Driving surface: Natural soil ground surface, variable (bedrock, consolidated stone/cobble, gravel, sand, silt); routes on soils prone to damage from compaction, rutting or mud will not be used when moist or wet.
- j. Grades: Gentle to moderate, avoiding steep grades as required by topographic conditions (max. 12%).
- k. Drainage: Natural surface runoff cross drainage, unobstructed, not intercepted. Use of route will avoid creating ruts that form ditches over time and intercept runoff. Existing ditches or ruts that are intercepting surface runoff will be mitigated with drainage control work using hand methods.
- l. Vegetation clearance: Minimal trimming for adequate side clearance and overhead clearance to allow passage by the vehicle at the time of use. Minimal trimming of low growing vegetation to accommodate vehicle driving over plants, without creating a fire hazard. Selective removal and transplanting of succulent and cacti regrowth in the travel-way.
- m. Construction/maintenance equipment: No construction or maintenance work will be performed. Only hand tools may be used to remove obstructions, or trim vegetation to gain passage, with minimum impact.