INTERSTATE 17
WIRELESS COMMUNICATION SYSTEM PROPOSAL

Orme Road to Flagstaff

ENVIRONMENTAL ASSESSMENT

April 2001

Coconino National Forest

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1.0 PROJECT SCOPE

1.1 Background

A coalition of Commercial Mobile Radio Service companies (INDUSTRY) has entered into an agreement with the Coconino and Prescott National Forests (Forest Service), to analyze the prospect of constructing seven new wireless telecommunications sites along Interstate 17 (I-17) between Orme Road and Flagstaff, Arizona.

Commercial Mobile Radio Service is a category of wireless communications service established and regulated by the Federal Communications Commission (FCC). This category of wireless communications service includes cellular, PCS and ESMR technology. The FCC regulates this service through issuance of licenses. The FCC license assigns frequencies and geographic areas to service providers (carriers). This proposal is the product of an extraordinary collaboration of the wireless communication carriers licensed by the FCC in Yavapai and Coconino Counties. The carriers included in this proposal are: Alltel, AT&T Wireless, Texas Telecommunications (Sprint), Qwest Wireless, Verizon, and VoiceStream.

The Forest Service has been given direction from Congress and the President to facilitate implementation of the Nation's strategy for wireless communications. On August 10, 1995, President Clinton released a memorandum entitled "Facilitating Access to Federal Property for the Siting of Mobile Services Antennas." (Project record document #1a.) In this memorandum, the following is stated:

> Upon request, and to the extent permitted by law and where practicable, executive departments and agencies shall make available, Federal Government buildings and lands for the siting of mobile service antennas.

On February 8, 1996, the Telecommunications Act of 1996 (project record document #1b) was enacted, giving further direction to federal agencies. In response to the memorandum and the Telecommunications Act, the General Services Administration released a bulletin listed in the Federal Register on June 16, 1997, titled "Placement of Commercial Antennas on Federal Property." (Project record document #3a) This bulletin provides general guidelines and processes for implementation of President Clinton's memorandum. Regarding granting of siting requests, the bulletin states:

> Requests for the use of property, right-of-way, and easements by duly authorized telecommunications service providers should be granted unless there are unavoidable conflicts with the department's or agency's mission, or current or planned use of the property or access to that property.

Communications sites on National Forest lands must be designated in Forest Land Management Plans before development can occur. The proposed amendments to the Forest Land Management Plans, in response to INDUSTRY needs, are the reasons the Forest Service has directed that an Environmental Assessment (EA) be prepared in compliance with the National Environmental Policy Act (NEPA). This EA will analyze the impacts of constructing a wireless telecommunications system along the I-17 corridor between Orme Road and Flagstaff, Arizona.

1.1.1 Current Situation

I-17 is a major north/south transportation corridor for Arizona that travels through the Coconino and Prescott National Forests. Currently, there are many areas along the I-17 corridor where there are long breaks in wireless telephone coverage. The wireless carrier's FCC licenses require that they provide continuous coverage for certain geographic areas, including the I-17 corridor, by a specified time. The I-17 corridor between Orme Road and Flagstaff has seven wireless communications providers licensed by the FCC.

There are existing towers on private land located at Kachina Village, the Verde Valley, Cordes Junction, and Orme Road that will be used in addition to the proposed new tower sites to complete the wireless communications system for the I-17 corridor between Orme Road and Flagstaff, Arizona.

1.2 Purpose and Need

The Commercial Mobile Radio Service providers need more tower sites in northern Arizona, particularly along the I-17 corridor, to provide service that the public is demanding, and to fulfill obligations mandated by their FCC licenses. There is very little private land in this area; consequently, INDUSTRY has proposed to develop new communication sites on National Forest System lands. INDUSTRY has requested that the USDA Forest Service analyze the prospect of constructing seven new tower sites located on National Forest System lands along (I-17), between Orme Road and Flagstaff, Arizona.

The Telecommunications Act of February 8, 1996, directs federal agencies to help facilitate implementation of the Wireless Telephone Industry's system, in compliance with existing law, by making federal lands and facilities available for communications sites.

1.3 Proposed Action

The proposed action is to designate seven new Commercial Mobile Radio Services (cellular, PCS, ESMR) communications sites on Forest Service lands along I-17 between Orme Road and Flagstaff, Arizona as shown on Figure 1 and described in Chapter 3.2. The proposed new communications sites will each consist of a land allocation approximately 100 feet by 200 feet, on which will be located an equipment building(s) and a communication tower(s). The tower height at each proposed site varies depending on the location, however in all cases will not exceed 200 feet. A typical site layout and tower configuration is represented in Appendix A. Technical details for each site can be found in the project record (Wireless Communications Facilities Plan, revised January 22, 2001. Project record document #94.)

1.4 Decision to be Made

The decision to be made by the Forest Supervisors for the Coconino and Prescott National Forests is whether to authorize construction of the proposed communications sites and associated utility connections, as a complete system, individually, or not at all. The Forest's Land Management Plans must also be amended to designate new communication sites.

Following new communication site designations, the Forest Service will issue a prospectus to solicit applications from interested parties for communication site leases that authorize construction and management of those sites. Provided that the proposals are within the development objectives identified in this EA and subsequent Decision Notice, the Forest Supervisors may select the proposal or proposals for site development, that best meet Forest Service goals.

The Forest Service is required to approve site plans before any development can proceed, and as part of this approval process, must ensure compliance with the National Environmental Policy Act of 1969 (NEPA), the National Forest Management Act of 1976, the Forest Service special-use permit regulations in 36 C.F.R. 251, and other applicable statutes, regulations, Executive Orders, and the Forest Service Manual and Handbook direction (collectively, the applicable legal requirements).

2.0 ALTERNATIVES

2.1 Summary of Alternative Development

The rapidly expanding demand for wireless communications has resulted in a focused and determined effort by INDUSTRY to locate new tower sites throughout the Nation. This effort has historically been conducted by individual carriers working on their own in attempts to gain a competitive edge by securing new sites for towers. Collocation of carriers at the same site has been difficult in the past because of the competitive nature of the industry. The first companies to approach the Forest Service were the cellular carriers. The Forest Service was able to meet their basic needs by authorizing use of existing communications sites. With the entry into the market of digital systems (PCS) it became apparent that existing sites could not provide the coverage that is mandated by the carrier's FCC licenses. Consequently, INDUSTRY began an aggressive campaign to secure new tower sites in northern Arizona. Licensed carriers and tower companies wanting to develop new communication sites along the I-17 corridor first approached the Forest Service individually. Working with individual carriers made it difficult for the Forest Service to understand or effectively evaluate the scope of the potential environmental impacts of accommodating INDUSTRY needs. In an attempt to understand the cumulative impacts to the area from this new INDUSTRY and to avoid a proliferation of new towers, the Forest Service directed the INDUSTRY to develop a comprehensive collocation proposal that included all licensed wireless carriers.

In an unprecedented effort, INDUSTRY formed a coalition that included all but one of the licensed wireless carriers and began work collaboratively designing a system of new tower sites along the I-17 corridor that would meet all of their technical needs through collocation.

The Forest Service directed INDUSTRY to use the following objectives for development of the proposed action:

- Design new sites to facilitate co-location of all carriers.
- Design the system to meet the technical needs of all licensed carriers.
- Minimize the number of new sites to reduce environmental impacts.

- Avoid FAA lighting requirements for towers by limiting height to 200 feet.
- Locate new sites to minimize visual impacts.
- Address wireless communication needs for the next five to ten years.

Using the Forest Service design objectives, INDUSTRY identified seven potential sites for new towers that would complete a system that would provide continuous coverage on I-17 between Orme Road and Flagstaff.

A qualified landscape architect then conducted a visual assessment of the proposed tower locations (Project record document #46a). The visual assessment resulted in several modifications of the original proposal to address visual concerns. In addition, preliminary environmental investigations were conducted for each proposed site in order to avoid environmentally sensitive areas. The result of this effort is the proposed action. The original proposal has been modified several times to take into account the different technical requirements of the various carriers and the concerns expressed by the Forest Service to minimize environmental impacts. The technical details of the proposed action can be found in the project record (Project record document #46b titled "Wireless Communications Facilities Plan for Coconino and Prescott National Forests".

2.1.1 Public Comments to the Proposed Action

In April 2000, a project proposal letter describing the proposed action was mailed out to the Prescott and Coconino National Forests' list of interested parties (see Chapter 5). The comments that were received during this scoping process were categorized and summarized below with a response to the concern identified.

Comment #1. Several people expressed concern over the visual impact of the proposed towers. Response: Visual quality is an issue that has been identified and has been evaluated and analyzed as part of this EA. Wireless communications towers require line-of-sight to the target areas to provide coverage. Consequently, locating tower in areas that are not intervisible will not work technically. The Forest Service gave INDUSTRY direction to reduce the visual impacts of the new towers by proper location based on a visual analysis (Section 2.1) (project record document #46). A visual analysis has been completed for each site to ensure the best possible location for individual towers under the 200-foot tower height objective for system design. Each of the proposed site locations were considered based on the silhouette conditions, distance zone, angle of viewer exposure, and duration of view of the proposed towers from I-17.

Comment #2. The need for cellular towers is short lived with continuous technological development. What happens if the towers become obsolete? Response: If the need for cellular towers becomes obsolete in the future, the improvements will be removed and the sites will be rehabilitated. Removal of the improvements and restoration of the sites are part of the terms of a communication site lease.

Comment #3. The effects of microwaves on plants and animals are still unknown. The Forest Service should wait until further studies of these effects have been conducted. Response: Many studies have been conducted on the effects of radio frequency emissions (RF). A collection of reference material compiled by biologist Sandra Nagiller titled "Radio Frequency Electromagnetic Fields, Effects on Human

health" can be found in the project record (document #58a). In a publication by the Federal Communications Commission (FCC), OET Bulletin 56[1] it was stated:

> Measurements made near typical cellular and PCS installations, especially those with tower-mounted antennas, have shown that ground-level power densities are well below limits recommended by RF/microwave safety standards...Calculations corresponding to a "worst-case" situation (all transmitters operating simultaneously and continuously at the maximum licensed power) show that in order to be exposed to levels near the FCC's limits for cellular frequencies, an individual would essentially have to remain in the main transmitting beam (at the height of the antenna) and within a few feet from the antenna. Measurements and calculations have verified that the power densities associated with cellular radio cell-site antennas to which the public may be exposed are not significantly different from "RF background" levels in urban areas which are produced from radio and television broadcast stations present in every modern community, are well below the limits recommended by national and international safety standards.

Low powered cellular and PCS devises must comply with the safety standards for radio frequency emissions issued by the FCC. The FCC requires an evaluation of all wireless devices by the manufacturers for compliance with the Specific Absorption Rate (SAR) prior to receiving FCC approval. These evaluations ensure that wireless telephones operate within the FCC's safe exposure limits. To this date, there is no evidence of bio-effects danger from the use of wireless telephones. (Siting Wireless Antennae, page 81, CTIA, project record document #3b).

The Telecommunications Act of 1996, states:

> "No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions".

Comment #4. The Forest Service should make the easements/access roads to the new sites restricted to non-motorized vehicles. Response: Road and utility access is an issue that has been identified and evaluated as part of the EA. Most of the sites are located on existing Forest Service roads. There is only one site, (Onion Mountain) that will require construction of a new road. The Forest Service has determined that if this site is designated, the access road will be gated and restricted to communication site administrative use only. In addition, the access road to the Rocky Park site will be gated to maintain the Rattlesnake Seasonal Closure.

[1]U.S. Federal Communications Commission (FCC), Office of Engineering and Technology, "*Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields,*" OET Bulletin 56, Edition 99-04, August 1999, Washington, D.C. 20554.

Comment #5. The Forest Service should require the utilities to be underground to prevent the visual impacts of the lines. Response: In general, the Forest Service agrees that underground utilities are preferred from a visual quality aspect. All of the proposed sites with the exception of Onion Mountain, Woods Canyon, and Rocky Park have access to existing overhead utilities within a short distance. Access to existing utilities was an objective for system design. Utility corridors to service the proposed Onion Mountain, Woods Canyon, and Rocky Park sites will be designated to be within the access roads as part of this NEPA process. Underground utilities have been identified as recommended mitigation for the Onion Mountain site utility corridor and for portions of the Rocky Park and Woods Canyon utility corridors that are visible from I-17.

Comment #6. The Forest Service should require shorter towers. Response: Shorter towers were evaluated but dropped from detailed consideration because of several factors. Generally, if shorter towers were constructed, then more towers would be required. Due to the predicted environmental effects of providing access and utilities under a shorter tower scenario, it is preferred to minimize the number of tower sites. For example, if towers were limited to 110 feet, the number of towers required to provide the same level of coverage would increase from seven to twenty six. See Section 2.2.2 for more information.

Comment #7. The development of new cellular sites would only benefit the cellular providers. This proposal is for profit of these companies only. Wireless Communications sites are not an appropriate use of National Forest System lands. Response: A part of the Forest Service mission is to provide for a variety of uses, values, products, and services for present and future generations. In areas like northern Arizona, local communities and society are dependent upon National Forest System lands to provide for uses such as right-of-ways for power-lines, pipelines, highways and communication sites. Development of a reliable communication system is in the public interest and is supported by the President of the United States and Congress. This is supported by Executive Order dated August 10, 1995 and passage of the Telecommunications Act of 1996, which directs federal agencies to help facilitate siting of wireless communications sites.

Comment #8. Concerned with potential impacts to wildlife habitat from clearing vegetation for construction of the site and access roads. Response: Three of the proposed sites will be located on previously disturbed or developed areas such as the McGuireville Rest Stop (Rarick Canyon), ADOT Little Antelope Maintenance Facility (Douglas Mountain), and Willard Springs Transfer Station (Ritter Mountain). James Canyon site has existing road access and electrical power adjacent to the site. Woods Canyon and Rocky Park have existing road access. Electrical power is approximately 2.5 miles away and would follow the existing access road. Onion Mountain is the only site that would require new road construction. The proposed sites not on previously disturbed ground were located to minimize the need for tree clearing. All towers will be designed to follow U.S. Fish and Wildlife guidelines for communication towers, which were established to address impacts to migratory birds (see section 3.1.3.3. for more information)

Comment #9. Other technology should be used instead of Cellular and PCS telephones such as satellite telephones and call boxes or pay telephones. Response: The demand for wireless communications (voice and data) far

surpasses any ability of current or foreseen satellite communications. In addition, satellite communications are very expensive, which eliminates much of the general public from benefits of wireless communications. ADOT does not have the infrastructure in place to accommodate call boxes or pay telephones. Call boxes and pay telephones would require wire-line connections and electrical power, which currently do not exist. Developing the infrastructure for wire-line telephone connections and electrical power would be very costly and would have impacts to the environment far beyond those of wireless systems.

Comment #10. Proposed communications towers could affect property value. Response: Rarick Canyon is the only proposed site that is close enough to private land to have any effect. A visual analysis was conducted as viewed from the closest residential property to the Rarick Canyon site. The visual analysis concluded that the proposed tower is similar to the elements of the existing rest area. The tower would repeat the form, line, and scale of an existing element in the setting, and therefore should not have any effect on adjacent private property. (Project record document #46a.)

Comment #11. The carriers should use existing communication sites instead of building new facilities on National Forest land. Response: The existing designated communications sites on National Forest land are already being used by the wireless carriers. New technology (PCS) requires towers to be closer to the user and with line-of-sight placement. This requires new sites to provide the coverage to areas that are mandated by the carrier's FCC licenses.

Comment #12. Communication sites are responsible for killing migratory birds. Response: The U.S. Fish and Wildlife Service has recently published guidelines for communication towers that mitigates migratory bird mortality associated with towers (Project record document #75). All of the proposed tower designs are consistent with these guidelines (see Section 3.1.3.3)

Comment #13. Suggested siting the James Canyon tower higher or closer to Highway 89. Response: Industry engineers examined relocating to the area suggested, and determined that the suggested site would not serve the purpose along I-17 for which it was designed.

2.2 System Alternatives Considered but Dropped From Detailed Analysis

In response to comments received during the scoping process and to verify the methodology for designing the system, the Forest Service directed INDUSTRY to analyze alternatives for system design. The following are discussions on alternatives for system design that were considered but dropped from detailed consideration:

2.2.1 Tower Heights Greater Than 200 Feet

When INDUSTRY first approached the Forest Service, it was proposed to have only five new sites on Forest Service land along I-17. The sites would have required towers 250 to 300 feet in height in order to provide adequate signal coverage and meet the technical

requirements of the carriers. At that height, the towers would be required to have lighting at the top, and would be very massive to the eye. A reduction in tower height to a maximum of 200 feet eliminates the need for lighting required by the Federal Aviation Administration (FAA). Tower heights that exceed 200 feet and are lighted at night significantly increase the potential for avian mortality due to birds colliding with towers.

The United States Fish and Wildlife Service recommends restricting tower heights to less than 200 feet. Due to the need for lighting, which increases visual impacts and potential avian mortality, this alternative was dropped from further consideration.

2.2.2 Limit Tower Height to 110-feet

Limiting tower heights to a maximum of 110-feet was reviewed. The number of towers would dramatically increase from 7 to 26. Each of the initial 7 sites would need two towers instead of one and an additional 6 new sites would be constructed, each of these with two towers. The number of towers increased for a variety of reasons: the height of the existing vegetation, topography, the number of carriers, and the amount of separation required between antennae on a tower. Each of the new sites would require the same 100' x 200' ground space, as well as power and ground access. Providing access and utilities to six additional sites would increase environmental effects. At the Rocky Park, Woods Canyon, Douglas Mountain, Ritter Mountain, and James Canyon sites the Forest canopy is generally around 75 feet. With a 110-foot tower height limitation a second tower would have to be constructed so that each of the carrier's antennas would clear the canopy. In addition, at one site, (Rocky Park), the tower would have to be relocated to another location in order to maintain the tower's line-of-sight with other towers and this other location would increase the tower's visual impact. . Therefore, due to potential increase in impacts resulting from providing access and utilities to additional sites in addition to the increase in the visual impacts from the increased number of towers, this alternative was dropped from detailed consideration.

2.2.3 Solar Power

Solar Power was reviewed for use at the proposed sites. This was dropped from further analysis because of the increase in area that would be impacted due to the number of solar panels that would be required to provide sufficient power to the site. In order to supply adequate solar power, the area allocated for the communication site would have to be substantially increased. The necessary solar panels would cover an area approximately one half-acre in size. In addition, the panels must be orientated in a southerly direction to gain sun exposure for most of the day. At the Onion Mountain location this would substantially increase the visibility of the site from I-17. Solar panels would contribute to additional adverse visual effects and require more tree clearing to keep the panels free of shade. In addition, solar power with batteries does not supply the consistent reliable electrical power that is required for wireless telecommunications use.

2.2.4 Median Pole Placement

Placing the towers in the median of I-17 was considered. ADOT regulations will not allow this option because I-17 is a controlled access highway. ADOT has a policy to not allow access at locations not designed to accommodate access. Towers located in medians would not have appropriate and safe access. Additionally, in some areas this would increase the pole numbers by a factor of ten, requiring approximately 70 sites. Therefore,

this alternative was dropped from detailed analysis.

2.2.5 Light Poles

The Forest Service asked the Carrier Coalition to examine the feasibility of using a series of 50-foot light poles along the ADOT right-of-way for I-17 as an alternative to a single site at Onion Mountain. The Onion Mountain site is designed to serve I-17 from private land sites in Camp Verde to existing private land sites near Orme Road. This area of I-17 has geologic features that prevent long line-of-sight connections between telecommunications facilities. In addition, the roadway has been carved through several hills that create a "canyon" effect that would require sites at both ends of the "canyon".

With these existing limitations, it is estimated that the number of sites required to serve this area would be at least 15 for this approximate 15-mile length of highway. In addition, electrical power would be needed. There are generally about 20 power poles per mile needed to supply electrical power to these sites; consequently the total number of new poles would be approximately 300. At each site, there needs to be sufficient ground space to locate the required electronics to operate the equipment. Though the carriers would probably not need the 100-feet by 100-feet area that would be required at the other sites, there would be a need for at least an area 50-feet by 50-feet area for equipment.

There is one additional issue that probably overrides all others when examining this alternative. The Arizona Department of Transportation's policies for controlled access roadways do not allow for installation of other facilities within the right-of-way (ROW). ADOT's policies also do not allow for direct access off of the ROW. For most of this area there is no existing access along the side of the I-17 ROW. Consequently, implementation of this alternative would require many miles of new roads adjacent to the highway and was therefore dropped from further consideration.

2.3 Alternatives Analyzed in Detail

The no action and one action alternative (The Proposed Action) are considered in detail.

2.3.1 Proposed Action

After analysis of the differences in the importance or significance of environmental effects as it relates to visual quality versus the environmental effects of new roads and power lines, it was determined that the 200 foot limitation on tower height for the system was appropriate and would serve as a constraint for system design.

2.3.2 No Action

The Forest Supervisor could elect to authorize the entire system or some of the sites. If a no action alternative for specific sites were selected, it would require further analysis to develop an alternative to provide signal coverage for that specific location. The proposed action represents a system that will not be complete if a site or sites are not developed.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Affected Environment And Environmental Consequences of The System

The following section summarizes the findings of all the studies conducted. Section 3.2 describes the findings of the studies conducted on a site-specific basis.

3.1.1 Visual Quality

The visual resource impact assessment is a qualitative assessment of the difference in visual character, overall visual conditions, and compliance with the USDA Forest Service Visual Management System (VMS). For the purpose of the visual assessment, the study area included selected transportation corridors where the wireless communication towers may be visible. The major transportation corridors are portions of I-17, State Route (SR) 169, Stoneman Lake Road, Schnebly Hill Road, and SR 89A.

The majority of the landscape in the study area would be classified as common or Class 'B'. This landscape is typified by moderately varied terrain and vegetation patterns. Rounded hills and rock formations are the typical landform types within the foreground distance zone of the existing transportation corridors (I-17, SR 169, Stoneman Lake Road, Schnebly Hill Road, and SR 89A) within the study area. The vegetative cover is fairly continuous with typical species diversity. Areas of minimal or Class 'C' classification within the foreground of the interstate occur at Camp Verde, McGuireville, McGuireville Rest Area, and Munds Park/Pinewood area. These areas are classified as minimal in inherent scenic quality because of the extensive visual modifications to the rural development. There are also a few areas within the foreground of the corridor of highly varied or distinctive landform, vegetation, or waterform that would warrant a distinctive or Class 'A' classification. These areas are limited to Copper Canyon, Verde River and the scenic overlook location. The existing visual conditions where the potential towers would be visible from the roadways currently meet the Visual Quality Objectives (VQO) of Retention except for the McGuireville Rest Area.

The changes in visual character and scenic integrity from existing conditions to post-project conditions along the corridors were evaluated based on several factors. These factors consider the silhouette conditions, distance zone, angle of viewer exposure, and duration of view of the wireless communication tower from the specified transportation corridors. Rarick Canyon would have the greatest magnitude of impact based on these factors. However, the potential tower facility is similar to the existing conditions at the McGuireville Rest Area with the architectural style of the buildings and the presence of high mass lighting for the parking areas. After consideration of each tower and evaluating the cumulative visual effect, Stoneman Lake Road and Rocky Park south were dropped from further consideration. The tower location at Woods Canyon was relocated to minimize head-on views.

The VQOs are developed to be measurable standards for the visual management of Forest Service lands. Based on the National Forest Resource Management Plan, the management

objectives were compared to the post-project visual impacts for each site. For all potential site locations, the activities associated with the wireless communication features would not meet Retention because they would result in changes that would be evident to the casual observer from the specified transportation corridors. The existing conditions where the proposed towers would be visible from the roadways currently meet the VQO of Retention except for Rarick Canyon (McGuireville Rest Area).

The introduction of the proposed improvements will create various degrees of alteration in the existing visual landscape. These alterations will be visually evident by the disruption of vegetation patterns and landform disturbance. The alterations are a result of contrast to the form, line, color, and texture of the existing landscape. There will be no cumulative effects to the visual resource of the area because addition of the towers to the existing highway corridor will not result in any significant changes to the area. (See the site-specific effects in section 3.2 for more detail)

Recommended mitigation: The degree of impact will be reduced by minimizing the amount of cut and fill slopes, revegetation of disturbed areas, and by blending any structures into the surrounding landscape. Eliminating all reflective surfaces of the tower by painting the surfaces flat black or dark brown will reduce color contrast.

3.1.2 Recreation (ROS)

The Forest Service uses the Recreation Opportunity Spectrum (ROS) to provide a framework for defining and rating classes of outdoor recreation environments, activities, and experience opportunities. The system's premise is that recreation users choose a specific setting for a particular activity or set of activities to have a desired experience. Six settings have been delineated ranging from pristine undisturbed landscapes to areas heavily impacted by human presence. The Coconino National Forest Land Management Plan states that total acres of any ROS class are allowed to change no more than plus or minus 15 percent from the updated inventoried levels during the first decade. The ROS classifications for the proposed communications site locations are all roaded natural.

Hikers, motorized and non-motorized vehicles, and equestrian travel can access the areas in which most of the cellular towers are proposed. Existing Forest Service roads provide access to all of the sites with the exception of the Onion Mountain site. Restricting the new access road at Onion Mountain to communication site management use only will help reduce any impacts that increased motorized vehicle use might generate.

Because of the presence of the interstate highway and its associated infrastructure that is in proximity to the proposed communications sites, there will be no change ROS settings and no cumulative effects as a result of construction of the communication facilities.

3.1.3 Biological Resources

3.1.3.1 Special Status Vertebrate/Invertebrate Species

Special status species include federally threatened, endangered, or proposed species under the Endangered Species Act and all Forest Service sensitive species. All special status species on the Coconino and Prescott National Forest lists were considered (see Appendix B). Habitat evaluations for each species were determined by comparing project area features to published information on the species' life history, habitat, and range and

from occurrence information on file at the Coconino National Forest district offices. The cell tower sites include habitat for four special status species: the bald eagle and Mexican spotted owl, listed as threatened; the Navajo Mountain Mexican vole, a mammal species listed as Forest Service sensitive; and the northern goshawk, a Forest Service sensitive bird.

Analysis at each individual tower site determined that the three special status birds (eagle, owl, goshawk) will not be impacted (see Section 3.2). The entire system of towers will also not impact these birds because the system is not located in important migratory, dispersal, or foraging flightpaths. Possible habitat for the Navajo Mountain Mexican vole may be impacted at four individual tower sites, totaling approximately four acres for the system. This vole is expected from meadows, riparian areas, and ponderosa pine with grassy understory vegetation from Mormon Lake to Williams. The loss of four acres of habitat for this species will not cause any population declines or changes or cumulative effects in the species distribution because of the large amount of potential habitat for this species on the Coconino Forest.

3.1.3.2 Forest Service Management Indicator Species

Other wildlife species considered for the cell tower sites include management indicator species. Forest Service indicator species are wildlife species representative of different vegetation communities. Long-term changes in the populations of these species serve as a barometer of the overall health of ecosystems. Coconino National Forest indicator species for the ponderosa pine and oak forest type include turkey, northern goshawk, pygmy nuthatch, hairy woodpecker, Mexican spotted owl, Abert's squirrel, red squirrel, and elk. Prescott National Forest indicator species for the woodland habitat are the mule deer and titmouse. This system of towers will not have cumulative effects or affect the population viability of any management indicator species because: (1) tower placement considered and avoided important breeding habitats, (2) habitat at each site and the combined total of all acres impacted is extremely small compared to the range of the species on the Forests, and (3) potential impacts can be mitigated. (Project record document #95)

3.1.3.3 Bird Mortality from Collision with Cell Phone Towers

Significant numbers of birds are killed every year from collision with tall human-made structures, such as power lines, high rise buildings, lighthouses, and towers. Single event bird kills numbering in the thousands occur along migration routes in inclement weather at tall, lighted towers. Migrating birds are attracted to tower lights during stormy weather because the birds are attempting to fly out of cloud and fog conditions into clear skies represented by the lights. There is a concern that bird mortality will increase because of the explosive growth in the number of towers being constructed for wireless services. The US Fish and Wildlife Service believes that proliferation of telecommunication towers over the next decade will create a significant cumulative negative impact on bird populations (project record document #58). The US Fish and Wildlife Service has recently adopted guidelines for siting, construction, operation, and decommissioning of communications towers (project record document #75). If the tower system is designed and constructed following the guidelines no cumulative impacts are predicted. The elements of the US Fish and Wildlife Service guidelines are implemented into the design of the proposed cell phone towers and are as follows:

- All towers will be less than 200 feet high and will be unlighted.

- Towers will be self-supporting lattice or monopole design with no guy wires.
- Towers and all utility and support structures will be painted with non-reflective paint.
- Any service or security lighting around tower sites will be down-shielded.
- None of the tower sites are located at or near important bird migration routes or concentrations of birds, such as adjacent riparian or aquatic habitat.
- The number of towers has been minimized through cooperation of multiple providers to co-locate equipment at single sites.

Recommended mitigation: Implement bird mortality monitoring according to the protocol under development by the National Communication Tower Working Group. Expand monitoring to record bat kills.

3.1.3.4 Special Status Plants

All special status species on the Coconino and Prescott National Forests were considered. Appendix B documents all special status plant species considered. Habitat evaluations for each species were determined by comparing project area features to published information on the species' life history, habitat, and range and from occurrence information on file at the Coconino National Forest district offices. There is no habitat for federal listed plant species at any of the sites. No Forest Service sensitive plants were found during plant surveys, however a survey for *Polygala rusbyi* is still needed at one site.

3.1.3.5 Exotic Weeds

There are different suites and densities of non-native and native weed plants in the project area with the greatest concentrations found on disturbed ground along roads, at stock tanks, and around borrow pits. Exotic weeds are a significant issue for biologists, land managers, and ecologists because the explosive spread of noxious weeds has degraded millions of acres of range and forest land across the western United States by out-competing and replacing native vegetation (Williams 1997). There are both Arizona state and federal guidelines and regulations to prevent the introduction of noxious weeds and control established populations. On February 3, 1999, (project record document #3b) President Clinton issued an Executive Order that establishes policy for all federal agencies to deny authorization for any actions on federal lands without plans to minimize the risk of promoting invasive plant populations. The Coconino, Kaibab, and Prescott National Forests are currently working on an Environmental Impact Statement to address a variety of methods of treating noxious weeds. At this time the Proposed Action is expected in Spring 2001 and the DEIS in late Summer 2001. The 1998 Strategic Weed Management Plan for the Coconino, Prescott, and Kaibab National Forests places an emphasis on minimizing the spread of weeds to pristine and relatively uninfected areas. Appendix C lists all plant species identified in the project area, including exotic weed species.

The construction of this system of towers could spread noxious weeds. Equipment could transport seeds of new noxious weeds onto the National Forests and could also transport seeds from existing plants from one tower site to another. A risk assessment and mitigation plan following the 1998 Strategic Plan will be prepared. Standard spread for noxious weeds preventative measures, such as cleaning equipment prior to initial construction and cleaning prior to moving from a site containing noxious weeds will minimize the risk of spread of noxious weeds. Preventative measures will be included as part of the terms and conditions of the lease for operation and construction of the facilities. With adoption of the

preventative measures as part of the lease, the proposed action will not have a cumulative effect or significant contribution to the spread of noxious weeds.

3.1.4 Cultural Resources

A survey has been completed on the proposed tower locations. All archaeological sites will be avoided. A complete archaeological report can be found in the project record (document #88). There will be no cumulative effects to cultural resources because all archaeological sites will be avoided by construction.

3.1.5 Soils and Water

The areas proposed for the towers do not contain any perennial streams or rivers. There are some areas where there is a slope to the proposed site. These locations will require minimal grading for the tower site and access roads. During construction, all measures will be taken to reduce erosion at these sites. The most practical and effective means of controlling non-point pollution sources from forests and rangelands is through the development of preventative or mitigating land management practices, generally referred to as Best Management Practices (BMPs). BMPs were developed through an intergovernmental agreement between the State of Arizona, and the U.S. Forest Service. BMPs are a practice or a combination of practices that are determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by no-point sources such as logging, construction, road building and maintenance etc., to a level compatible with water quality goals (FSH 2509.22). All projects will abide by Best Management Practices. (Project record document # 1c.)

The construction of the proposed towers will have no impact on the water in the areas. All measures will be taken to reduce the impacts to the soils and reduce the erosion. The proposed action will have no cumulative effects because the actual area of disturbance is relatively small and concentrated to an existing transportation corridor.

Recommended mitigation: (1) All communication site access roads must be properly maintained and built to a standard that will allow for all weather travel. Road maintenance activities shall be completed according to a schedule specified in the Communication Site plan. (2) Best management Practices shall be required as part of the Communication Site Lease and Site Plan.

3.1.6 Air

During the construction of the cellular towers, minimal dust will be produced. Once the cellular towers are complete, they will not have any adverse environmental or cumulative effects on the air quality to the environment because the activities associated with construction of the facilities will be small and specific to the actual site.

There will be no adverse effects or cumulative effects on the air quality, as a result of implementing the proposed action.

3.1.7 National Interests

The Forest Service has been given direction from Congress and the President to facilitate implementation of the nation's strategy for wireless communications. On August 10, 1995,

President Clinton released a memorandum entitled "Facilitating Access to Federal Property for the Siting of Mobile Services Antennas." In this memorandum, the following is stated "Upon request, and to the extent permitted by law and where practicable, executive departments and agencies shall make available Federal Government buildings and lands for the siting of mobile service antennas."

On February 8, 1996, the Telecommunications Act of 1996 was approved. In response to the memorandum and the Telecommunications Act, the General Services Administration released a bulletin listed in the Federal Register on June 11, 1997, titled "Placement of Commercial Antennas on Federal Property." (Project Record document #3a.) This bulletin provides general guidelines and processes for implementation of President Clinton's memorandum. Regarding granting of siting requests, the bulletin states "Requests for the use of property, right-of-way, and easements by duly authorized telecommunications service providers should be granted unless there are unavoidable conflicts with the department's or agency's mission, or current or planned use of the property or access to that property."

Implementing the proposed towers will comply with the current regulations. There are no conflicts with the Forest Service's mission, or are there any conflicts with the current or planned use of the proposed properties and their accesses.

3.1.8 Cumulative Effects

Cumulative effects are effects on the environment, which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.

Past present and ongoing activities have been considered in conjunction with the No Action and the Proposed Action Alternatives. The current status of air, water, soil, vegetation, wildlife habitat, visuals, recreation, and cultural resources are described in Section 3.0 of this document. Ongoing and future actions as described in the "Schedule of Proposed Actions" for the Coconino National Forest have been reviewed and are located in the project record (document #83).

Section 3.2 discloses and analyzes the specific environmental effects of each site individually. In section 3,2 the conclusion was that there is no significant effect to the visual quality because the proposed action meets visual quality objectives and there is no change in the ROS classifications. Therefore there will be no significant cumulative effects to visual quality and recreational experience,

There are no cumulative effects to air, water, soil, and biological resources from the proposed action when considered with past, present, and ongoing activities because the area of disturbance associated with construction and operation of the communication site is relatively small in relation to the general landscape and the proposed improvements are within the area already influenced by the interstate highway (Section 3.0). Each site involves an area less than .46 acres and the combined or cumulative total of area impacted is approximately 3.22 acres (Appendix A). Three of the sites have been located to take advantage of previously developed areas. Rarick Canyon site is within the ADOT McGuireville Rest Stop. The Douglas Mountain Site is located within the ADOT Little Antelope Maintenance compound. Ritter Mountain is located within the area previously disturbed by the Willard Springs Transfer Station. All of the other sites with the exception of

Onion Mountain have existing road access. There will be no significant effect to migrating birds as a result of this system if United States Fish and Wildlife guidelines for towers are followed (Section 3.1.3.3). U. S. Fish and Wildlife guidelines were used for system design; therefore there will be no cumulative effects to birds.

3.1.9 Environmental Justice

The issue of environmental equity and justice in natural resource allocation and decision-making is receiving increasing political and social attention. Following President Clinton's Executive Order 12898 (Federal Register, February 1994), all Federal land management agencies have been mandated to address environmental justice in nonwhite and/or low-income populations, with the goal of achieving environmental protection for all communities regardless of their racial and economic composition.

The proposed alternatives do not result in disproportionate impacts to low-income populations, nor do they impact minority populations. The Flagstaff area, including its low income and minority populations is strongly tied to the tourism industry, with cellular companies having a very small percentage of the overall economy.

3.1.10 No Action

If the No Action Alternative is selected or authorized, it would result in continuance of the existing condition of less than adequate wireless telecommunications for this area. In addition, if the no action alternative were selected there would be no change to the visual quality, recreation, soil and water, cultural resources, and air quality.

The effect of the "No Action" alternative on the licensed carriers would be multifaceted.

- Public Safety would be put at risk. There are significant portions of I-17 and National Forests through which the highway travels, where there is little or no ability to communicate in case of emergency. If the carriers were prohibited from providing service, people in emergencies would continue to be at risk.
- The carriers' FCC licenses would be at risk. Each of the carriers are required as a condition of their licenses to serve a mandated portion of their service population by specified dates. If they do not meet these standards, they FCC can take possession of their licenses costing the carriers millions of dollars.
- In all probability, the carriers would be forced to institute litigation against the Forest Service to be given the ability to locate communication facilities on public lands. The basis for the litigation would probably be violations of the 1996 Telecommunications Act which proscribes limitations under which communication facilities cannot be denied: 1) unreasonable discrimination amongst carriers (the Forest Service has approved other similar sites for cellular providers that are not of significant value to PCS providers), and 2) have the effect of prohibiting the provision of personal wireless service.

3.2 Affected Environment and Environmental Consequences of Individual Sites

This section is broken into seven sub-sections, one for each proposed cellular site. Every sub-section will describe the site location and characteristics and will describe and analyze the environmental effects of the proposed sites on an individual basis.

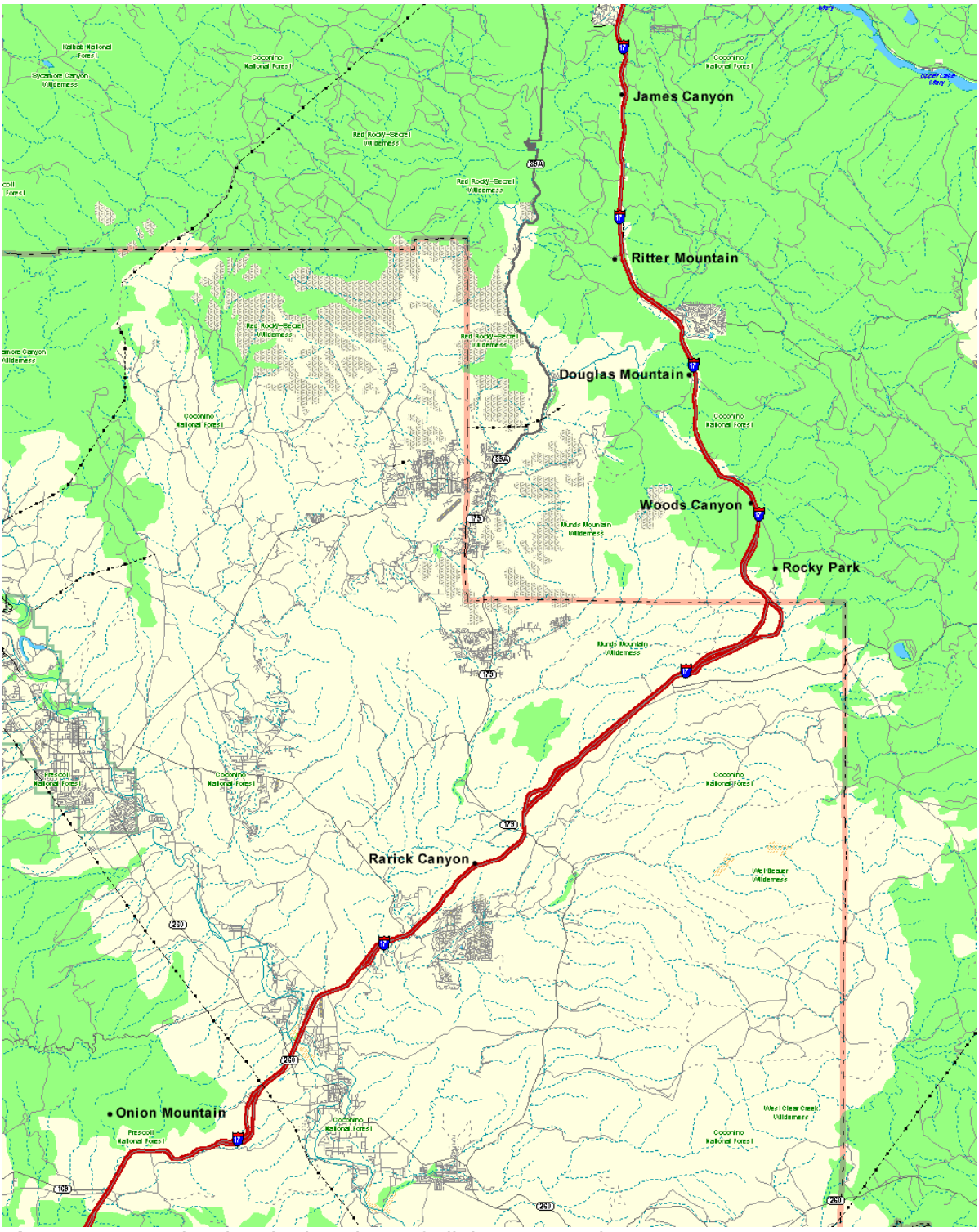


Figure 1. Map showing the locations of all the proposed towers.

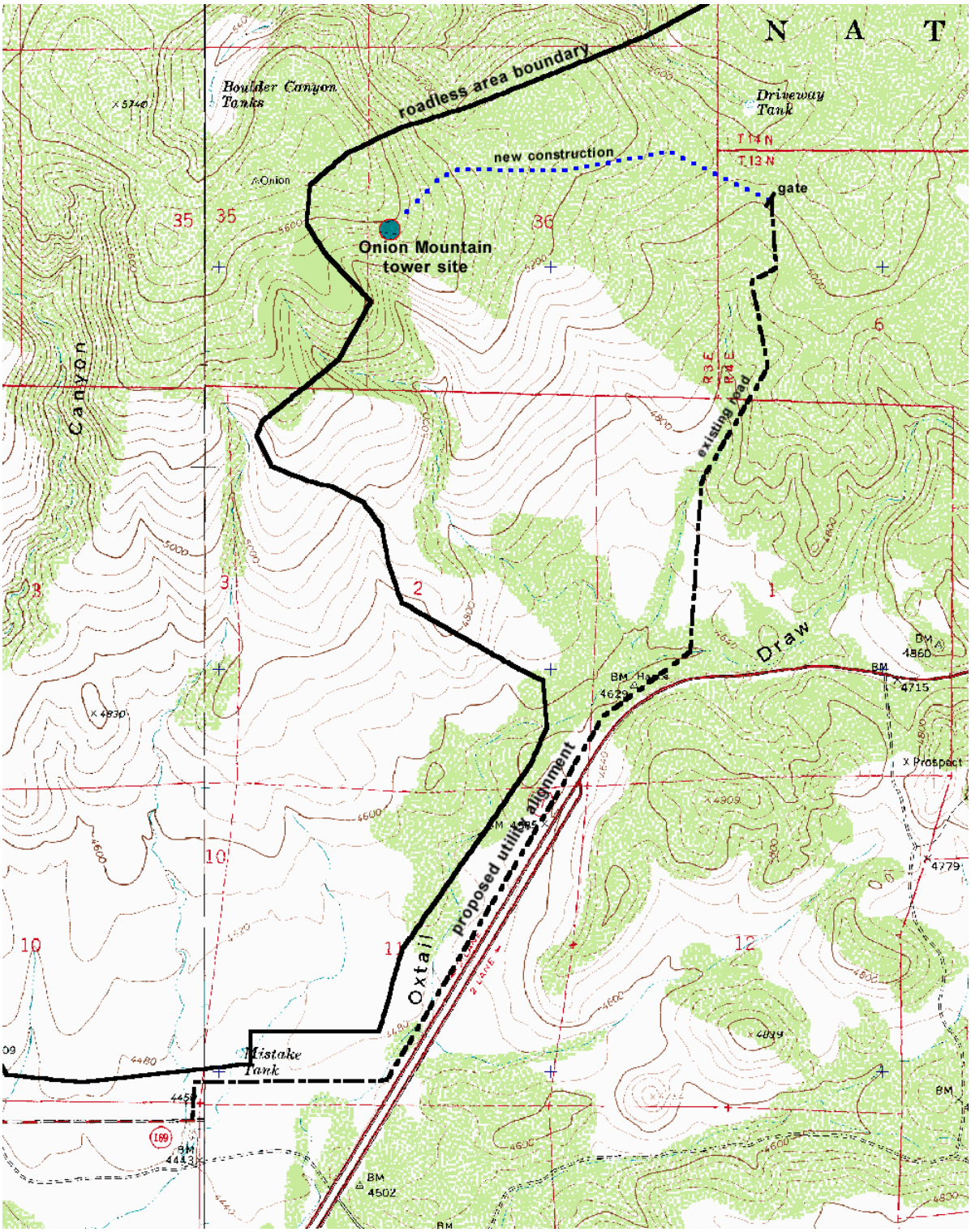


Figure 2. Map showing the location of the proposed Onion Mountain site with utility alignment and Roadless Area boundary.

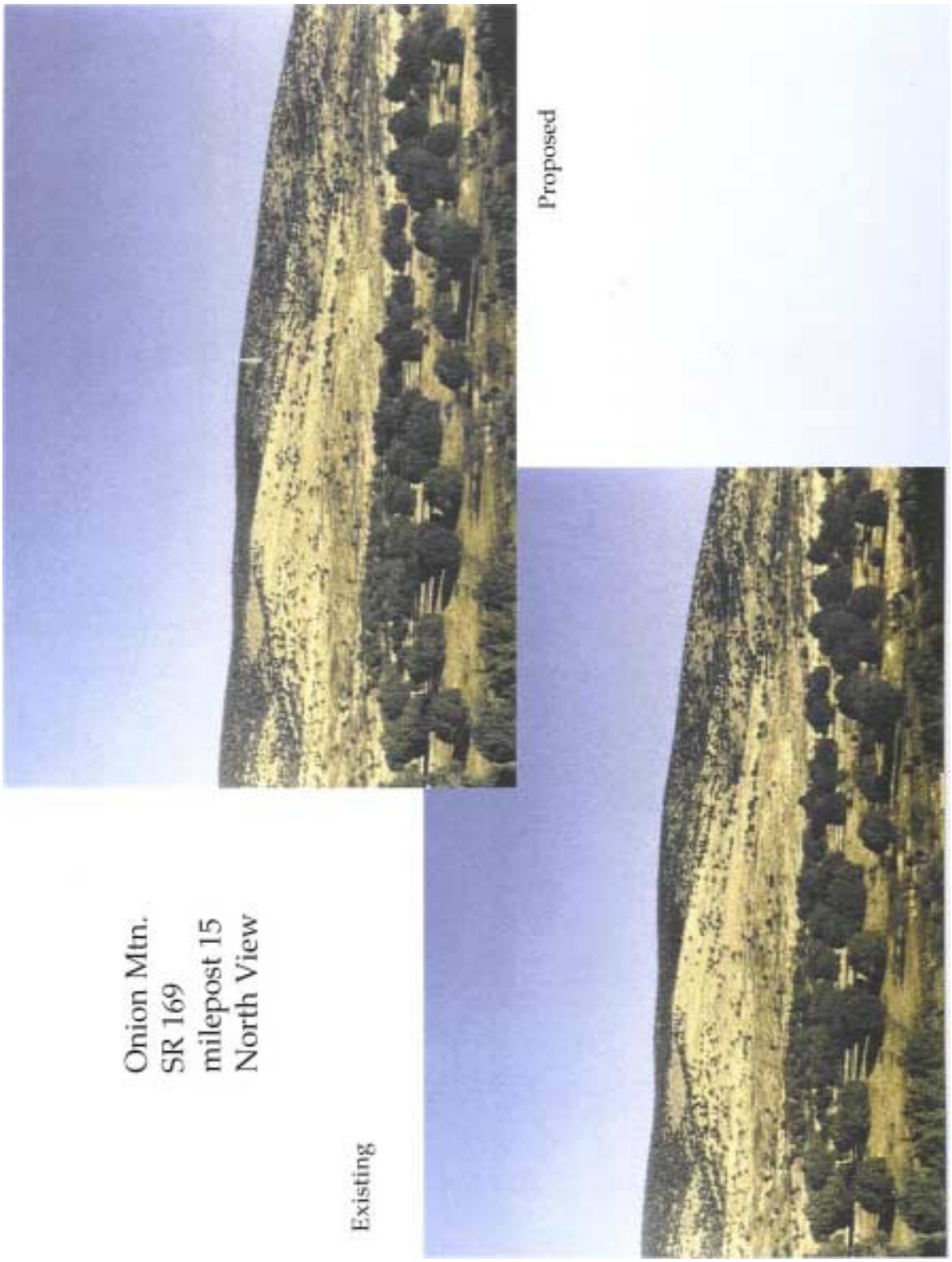


Figure 3 - Photo of Onion Mountain Existing & Proposed

3.2.1 ONION MOUNTAIN

3.2.1.1 Onion Mountain Alternatives considered but dropped from Detailed Analysis

Three alternative locations to the Onion Mountain site were evaluated relative to the existing proposed tower location. The alternative sites are referred to as Grassy Mountain, Reeves, and Plateau. In addition to Grassy Mountain, Reeves, and Plateau proposed sites, an alternative location for Onion Mountain was originally proposed. The original proposed site for Onion Mountain was within the boundaries of an inventoried roadless area. Because of potential conflicts with recently created national roadless management objectives, the site was moved out of the inventoried roadless area to the current proposed site. The following discusses the rationale for dropping the Onion Mountain Alternatives from detailed analysis:

Grassy Mountain:

> The tower site located on Grassy Mountain would be visible for a total distance of 3.9 miles, or for approximately 3.5 minutes from a vehicle traveling 75 miles per hour, along I-17 and only in the middle ground distance zone. Southbound travelers would be looking head-on at the tower for 2.4 miles (2.25 minutes). The tower would be located in a relatively undisturbed natural area and would attract some attention away from the natural landscape. The visual quality objective (VQO) for the middle ground area as viewed from I-17 would meet Partial Retention. The tower would be evident to the casual observer, but natural landscape would remain the dominant feature in the setting. This site was dropped from further analysis due to the visual impacts.

When Grassy Mountain was dropped from further analysis, a combination of two sites (Reeves and Plateau) to serve this section of I-17 was analyzed. This was necessary because neither site on its own would provide the coverage required by the carriers.

Reeves:

> The tower at the Reeves site would be visible for a total distance of 4.3 miles, or for approximately 3.5 minutes from a vehicle traveling 75 miles per hour along I-17, and only in the foreground and middle ground distance zones. Of the duration of view time, 74% of the viewer exposure (2.5 minutes) would be head-on from travelers on I-17. There would be tangential views of the tower in the foreground area for 0.6 miles (29 seconds). The tower would be located in a relatively undisturbed natural area and would attract some attention away from the natural landscape. The visual quality objective (VQO) for the middle ground area as viewed from I-17 would meet Partial Retention. The tower would be evident to the casual observer, but natural landscape would remain the dominant feature in the setting.
>
> In addition to the identified visual issues, access to the Reeves site is problematic. The only viable access is directly from I-17, which would not be allowed by the Arizona Department of Transportation or the Federal Highway Administration. Without the use of I-17 for access, at least 5 miles of new road construction would be required.

This site was dropped from further analysis due to the visual impacts and access issues.

Plateau:

Located adjacent to Copper Canyon, the Plateau tower site would be visible for a total distance of 1.9 miles, or for approximately 1.75 minutes from a vehicle traveling 75 miles per hour along I-17, and only in the middle ground distance zone. Of the duration of view time, 42% of the viewer exposure (45 seconds) would be viewed head-on by travelers on I-17. The portion of the interstate adjacent to the tower site is a notable section of I-17 because there is a significant change in elevation as the highway ascends from or descends into the Verde Valley. Within Copper Canyon, the surrounding mountainous terrain limits views. The tower would be located on top of a very prominent landform in the Canyon. Consequently, although the duration of view is relatively short compared to the other Onion Mountain alternatives, the tower would be an extremely prominent built feature and would attract attention away from the natural landscape. The VQO as viewed from I-17 would meet Partial Retention within the middle ground area where the angle of view would be tangential, and meet Modification for the head-on view. The tower would be evident to the casual observer from tangential views, but natural landscape would remain the dominant feature in the setting. The tower would dominate the natural character of head-on views, but would reflect naturally established form, line, color, and texture.

This site was dropped from further analysis due to the visual impacts.

3.2.1.2 Proposed Action - Onion Mountain Site

After analysis of the alternative sites, it was apparent that the Onion Mountain site was the best alternative visually. The proposed site is located to the south of Camp Verde, south of the Onion Mountain GPS benchmark. Take Exit #278 off I-17 to SR 169. Go west on SR 169 and take the first dirt road on right. At the fork, go right for approximately one mile. Take the left fork for 2.7 miles to the site.

Coordinates:	34-33-05.57 N / 111-59-29.13 W SW¼NE¼ Sec 35 T14N R3E
Access:	Access is gained using an existing primitive road for 2.7 miles and a new road would be needed for an additional 1 mile. Some modifications to the existing jeep trail will be necessary. The access road will be limited to one surfaced travel lane. The road will be gated and locked at the new construction, near the intersection of the existing jeep trail.
Proposed Lease Area:	A 100' x 200' area south and east of Onion Mountain GPS benchmark.
Proposed Structure:	A 150-foot tower.
Utility Status:	Power and telephone located approximately 3 miles from site. Utilities will follow the access road as shown on figure 2.

RF Coverage Objective: This site located within the Prescott National Forest will provide coverage on I-17 between milepost 270 and milepost 281. It will link coverage from the intersection of Cordes Junction to the Town of Camp Verde where there are existing towers.

Carrier Antenna Heights:

VoiceStream - 150'	Verizon - 140'	US West - 130'
Alltel - 120'	AT&T - 110'	Sprint - 100'

3.2.1.2.1 Visual Quality

The tower would be located in a relatively undisturbed natural area and would attract some attention away from the natural landscape.

The VQO for the middle ground area as viewed from I-17 and SR 169 would meet Partial Retention. The tower and its associated facilities would be evident to the casual observer, but natural landscape would remain the dominant feature in the setting.

Based on the results of the evaluation of the four alternative locations, the Onion Mountain site would be preferred as having the least visual impact on the visual character and inherent scenic quality of the landscape. It is the only site where the tower would have a backdrop of a landform and would not consistently be silhouetted above the horizon. The photographic simulation on an earlier page has the tower a bright white, however, one of the mitigation measures is to paint the tower a color that will blend with the background colors. The Onion Mountain tower would also have the shortest duration of head-on views from I-17 and SR 169. The Plateau tower site also has relatively short visibility duration, but would be an extremely prominent built feature. Reeves and Grassy Mountain both have relatively long visibility durations (approximately 3.5 minutes from a vehicle traveling 75 mph) with the majority of the viewer angle being head-on.

Recommended mitigation: (1) Painting the tower, fence and equipment building military olive drab; (2) Electrical power and phone lines should be placed underground within the access road prism; (3) All waste rock from road construction and site construction must be hauled off site to a designated disposal area; (4) Existing vegetation and trees will be protected where possible to help screen the facilities; (5) Large cuts or fills will not be allowed to level the lease area.

3.2.1.2.2 ROS

The Onion Mountain site is located in an area with a current ROS classification of roaded natural. Although the proposed site is 0.2 miles from the boundary of an inventoried Roadless Area, the ROS setting is roaded natural. The setting is considered roaded natural because of the proximity of I-17, located approximately 1.5 miles to the south. I-17 is clearly visible from the proposed site. Road building and power line construction will change the character of the adjacent areas because there will be development or structures where there were none.

Development of a telecommunications site at the Onion Mountain site will require

construction of approximately one mile of new road and improvement to approximately 1.5 miles of existing primitive road. It would also require development of approximately 3 miles of new utility corridor to bring in electrical power and telephone connection. Road building, power line construction, and construction of the telecommunication facilities will add to the impacts of human presence. However, the ROS setting will not change because the area is already altered by the presence of the Interstate highway. The existence of a new road to access the site will present management problems. Some of the impact can be mitigated by installation of a gate to restrict use of the road to authorized communication site management business only.

Recommended mitigation: (1) Access road will be limited to 1 travel lane in width; (2) Access road will be gated at the point of new construction (see Figure 2) and will be restricted to communication site management use.

3.2.1.2.3 Wildlife

3.2.1.2.3.1 Special Status Species

One Forest Service Sensitive species, the Arizona southwestern toad, could occur in the project area. This toad occurs in rocky streams, canyons, and floodplains with usually dense riparian vegetation. They breed in gently flowing waters. There is no breeding habitat within or affected by the project. There is a low probability that this toad may occur in the project area during the non-breeding season. The Onion Mountain site will not impact the southwestern toad (project record document #85).

The Onion Mountain site would not impact threatened or endangered species because none are known to exist in the area.

3.2.1.2.4 Vegetation

The Onion Mountain site is located within the Great Basin Conifer Woodland Biotic Community. The associated flora consists of Rocky Mountain juniper, one-seed juniper, Rocky Mountain pinyon pine, Gambel oak, mountain mahogany, sumac, Arizona cliffrose, barberry, Apache plumes, bitterbrush, and grasses.

A noxious weed survey and risk assessment must be completed prior to construction. If noxious weeds are found, preconstruction weed eradication following approved FS methods may be required. The risk assessment will identify necessary mitigation measures to reduce the risk of noxious weed spread.

The Onion Mountain site would not impact threatened, endangered, or sensitive plant species because none are known to exist in the area.

3.2.1.2.5 Cultural Resources

Archaeological sites were located and avoided during the site selection and access routes of the proposed Onion Mountain alternatives. An archaeological survey has been completed and can be found in the project record.

3.2.1.2.6 Soils/Water[2]

This ecosystem is characterized by shallow to moderately deep soils, high surface rock fragments and moderately steep-to-steep slopes. Erosion hazard is moderate. Maintenance of vegetative ground cover is essential to minimize sheet and rill erosion. Soils are subject to trafficability problems and damage (compaction, puddling and displacement) when wet. The low bearing strength, shallow depth, high surface rock fragments and steep slopes of these soils may limit management activities.

Landform:		Hills
Bedrock:		Basalt/schist
Parent Material:		Colluvium/residuum, Basalt/schist
Soil Conditions:		Impaired/unsatisfactory
Hazards	Erosion:	Moderate
	Mass Wasting:	Slight
TES Number:		462

Recommended mitigation: Restrict ground disturbing activities associated with construction, to periods when the soils are dry.

[2] The soils evaluation for the Onion Mountain site located in the Prescott National Forest was obtained from the USDA FS publication: *Terrestrial Ecosystems Survey of the Prescott National Forest*.

Figure 4. Map showing the location of the proposed Rarick Canyon site.

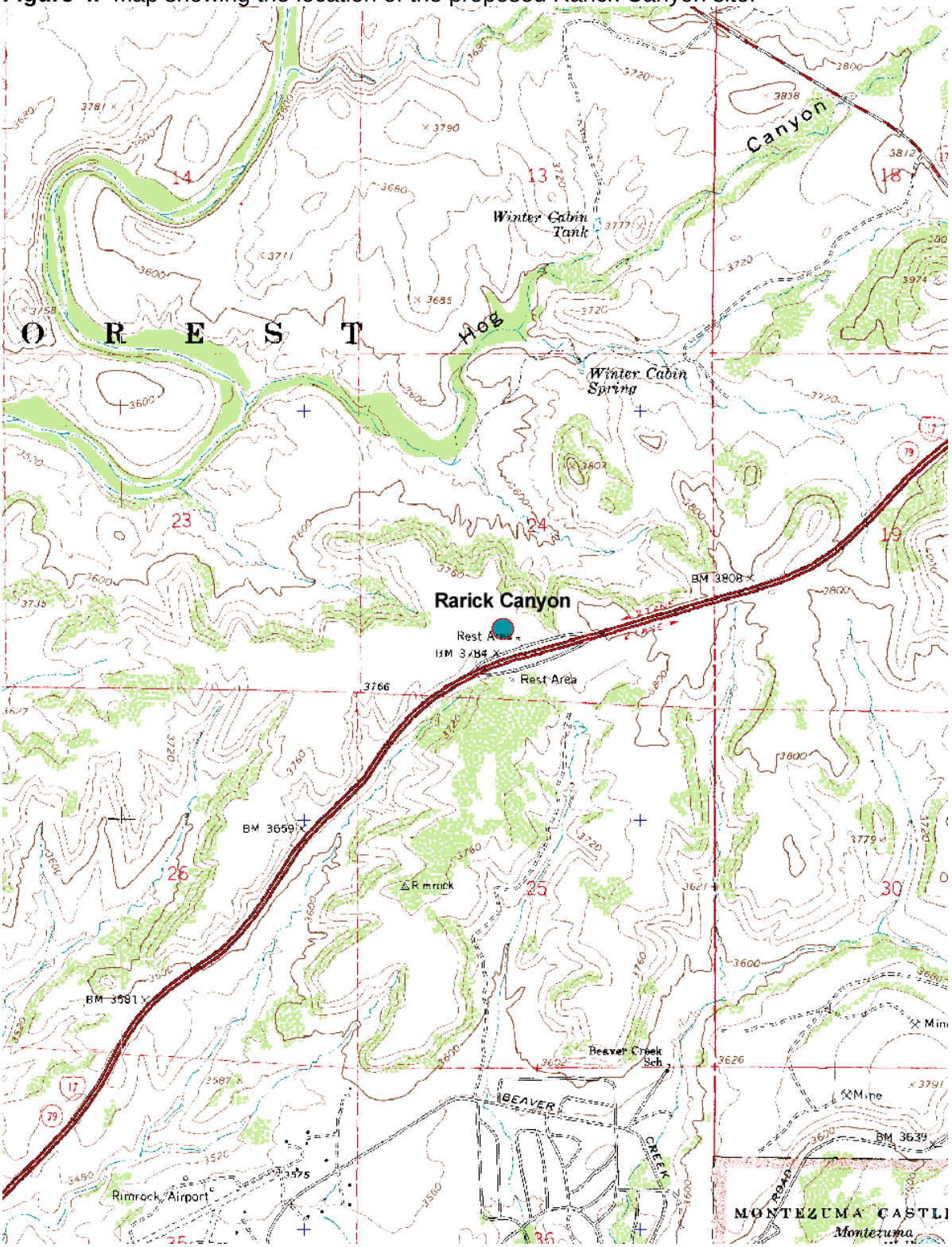
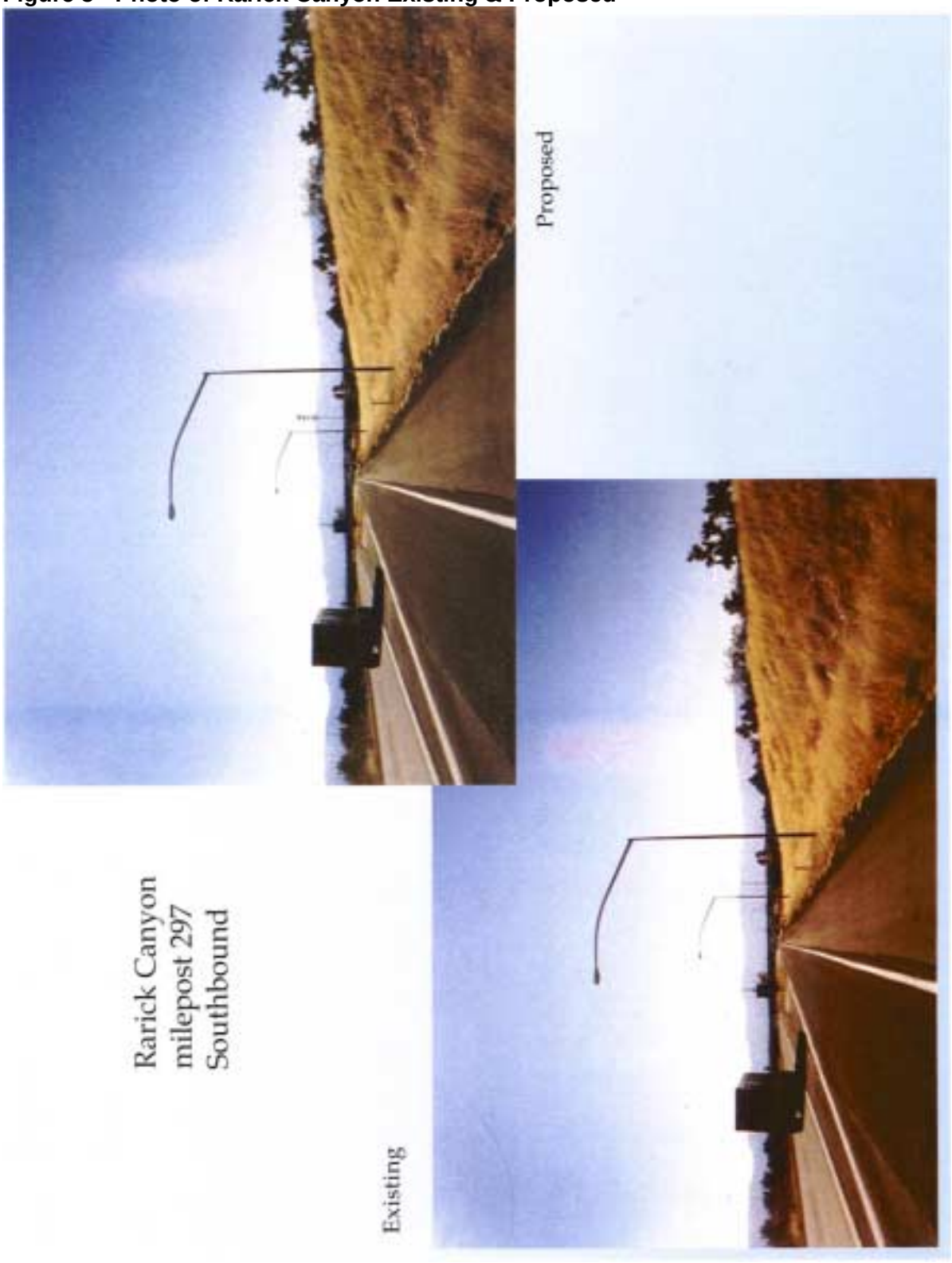


Figure 5 - Photo of Rarick Canyon Existing & Proposed



3.2.2 Proposed Action - Rarick Canyon

This site is located on the west side of the I-17 southbound McGuireville Rest Stop.

Alternative A	A 185-foot tower is proposed for this site.
Alternative B	Replace the 2 existing light poles at the Mcquireville Rest Area with 3 to 6 160-foot light poles.
Coordinates:	34-40-28.06 N / 111-46-24.48 W SE¼SW¼ Sec 24 T15N R5E
Access:	Access to the site is via the ADOT Rest Stop parking lot.
Proposed Lease Area:	A 100' x 200' area adjacent to the ADOT Rest Stop.
Proposed Structure:	Alternative A: A 185-foot tower Alternative B: Up to six 160-foot light poles will be used for this site
Utility Status:	Utilities are located within feet from the proposed site.
Comments:	Little or no tree removal will be necessary.
RF Coverage Objective:	This site located within the Coconino National Forest will provide coverage on I-17 between milepost 291 and milepost 300 and on Highway 179 from I-17 to the Village of Oak Creek. It will link coverage from the Town of Camp Verde to Rocky Park.

Carrier Antenna Heights:

Alternative A –

VoiceStream - 185'	Verizon - 175'	US West - 165'
Alltel - 155'	AT&T - 145'	Sprint - 135'

Alternative B – All carriers at 160 feet if six towers.

3.2.2.1 Visual Quality

In the February 2000 document (project record document #46b), one wireless communication tower at 185 feet in height was considered at Rarick Canyon. An alternative to the 185-foot tower would be to replace the existing light poles at the rest area with up to six 160-foot light poles. Six light pole towers would represent a compromise in service for some of the carriers and an improvement for others identified for the lower positions under alternative A. All the carriers desire the higher positions that will provide better service. The tower positions were determined by lottery. A minimum of three light pole towers would be required to provide adequate service for this area and connection with the system. If there were less than six light pole towers it would require two carriers on a pole requiring the pole to be larger to support the antennae. This would increase the visibility of the pole because of the greater mass required to support multiple antennae.

Located at the McGuireville Rest Area along I-17, the tower(s) would be visible for a total distance of almost four miles with head-on views for approximately three miles regardless if they were 185 or 160 feet in height. Two high mass light poles are present at the rest area facility, one on either side of the interstate. One 185-feet wireless communication tower would repeat the line and form scale of these existing elements. Reducing the height of the towers by 25 feet would not make a notable difference in the visibility of the towers from I-17, nor would they appear to be substantially lower in the context of their setting when compared to other existing elements. An increase in the number of towers would however, increase the prominence of the towers in the landscape, and create more visual contrast in terms of spatial dominance. Constructing six 160-foot wireless communication towers would substantially change the existing visual character of the McGuireville Rest Area, because of the mass of towers with their associated arrays and microwave dishes. Constructing three 160 foot high mass light pole towers would have close to the same visual effect as six poles because the three poles would have to be larger in diameter to support multiple antennae. ADOT has made other rest areas available for wireless carriers by replacing light towers and is willing to make the McGuireville Rest Area available for such uses. Replacing and adding light poles used as antennae support structures could enhance the rest stop and contribute to ADOT's management objectives for the area. If additional light poles are used for antennae support structures, the existing lights at the rest area could be lowered, reducing the nighttime visual effects. The Rarick tower(s) will have a total distance visible of 3.9 miles or duration of visibility of 3.2 minutes from a vehicle traveling 75 miles per hour.

Recommended mitigation: (1) If the light pole alternative is selected, the lights should be located lower on the pole than the existing lights. (2) Require wire-line telephone connections and not allow microwave dishes to reduce the mass of the structures for both alternatives.

3.2.2.2 ROS

Because this site is within the developed area of the I-17 McGuireville Rest Stop, operated and maintained by ADOT the ROS setting is rural. Development of a communication site at this location will not change the ROS setting.

3.2.2.3 Wildlife

Cell phone equipment installation would have no effect on wildlife because this is a developed site with heavy vehicular traffic and high levels of human activity. There are no issues for threatened, endangered, or sensitive species because none are present.

3.2.2.4 Vegetation

Native vegetation would not be impacted by the project and there are no federally protected plant species at the rest stop. There may be habitat for a Forest Service sensitive plant, *Polygala rusbyi*, which has been recorded at the rest stop and the Middle Verde exit off Interstate 17. There is a low probability that the plant is actually located at the site because of the amount of disturbance that has occurred here as part of the rest area development.

Recommended mitigation: Conduct surveys for *Polygala rusbyi* prior to construction. If the plant is present, mitigation such as seed collection or transplanting may be required.

3.2.2.5 Cultural Resources

No archaeological sites were found. An archaeological report has been completed and can be found in the project record.

3.2.2.6 Soils/Water[3]

These soils contain significant quantities of calcium carbonate throughout the profile or at a relatively shallow depth. A pH of 8 or more is common and may hinder revegetation efforts.

Excessive ground disturbance, which may bring more calcareous soil to the surface, should be avoided. There are no surface water resources on site.

Landform:	Elevated Plains
Bedrock:	Limestone
Parent Material:	Residuum, Limestone
Soil Conditions:	Satisfactory
Hazards Erosion:	Slight
TES Number:	385

The area is already hardened by the existing development. The proposed improvements will have no effect on soils.

[3] The soils evaluations for sites located in the Coconino National Forest were obtained from the USDA FS publication: *Terrestrial Ecosystems Survey of the Coconino National Forest*.

Figure 6. Map showing the location of the proposed Rocky Park site.

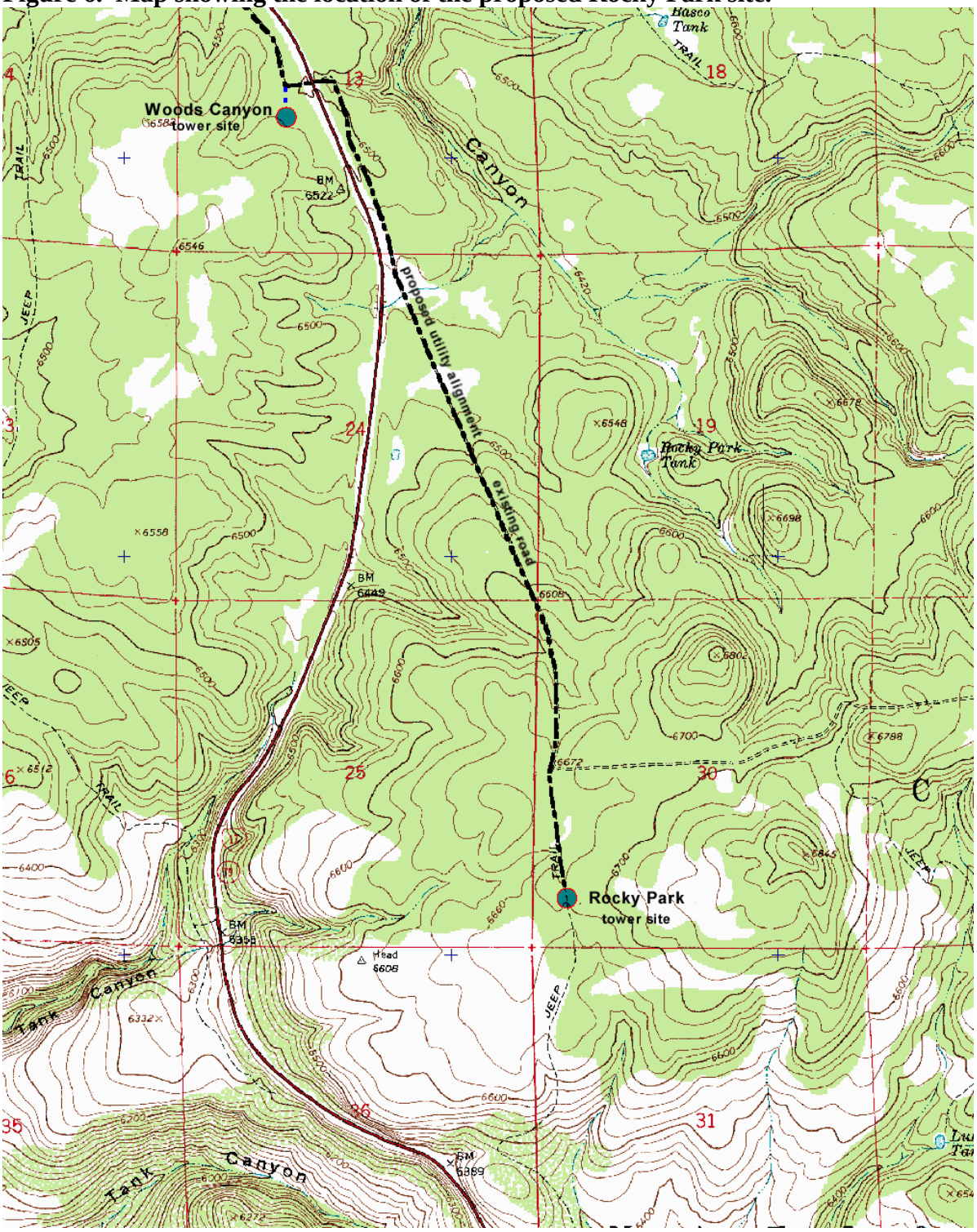


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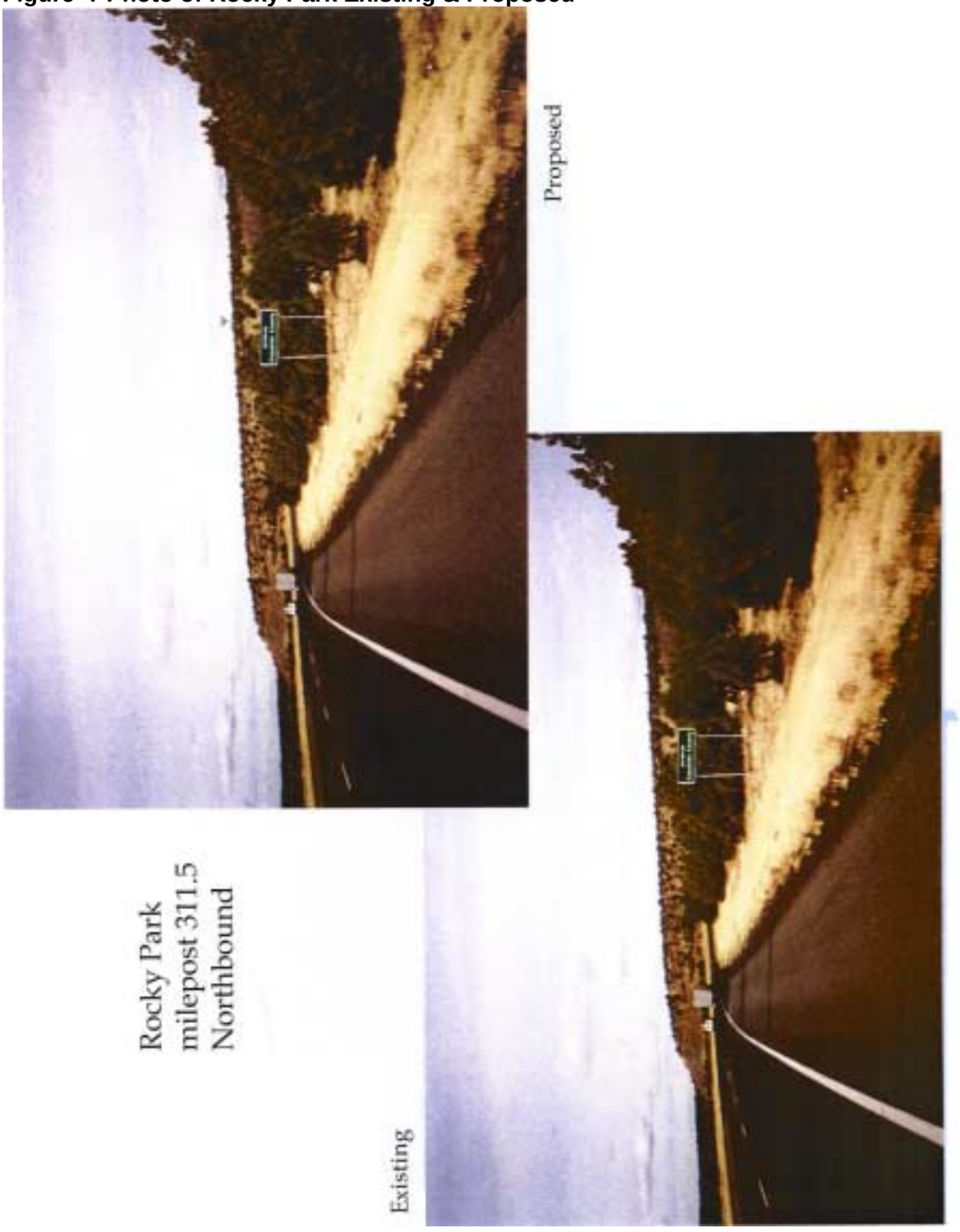
Figure 7 Photo of Rocky Park Existing & Proposed



3.2.3 Proposed Action - Rocky Park

Coordinates:	34-49-08.58 N / 111-35-38.78 W SW¼SW¼ Sec 30 T17N R8E
Access:	Access is gained using a dirt road off Exit 315 leading into Rattlesnake Seasonal Closure.
Proposed Lease Area:	A 100' x 200' area.
Proposed Structure:	A 195-foot structure.
Utility Status:	Utilities are located 3.5 miles from the site.
Comments:	Little or no tree removal will be necessary. This site is located north of the ADOT Scenic View stop, approximately 1,000 feet from the ridgeline.
RF Coverage Objective:	This site located within the Coconino National Forest will provide coverage on I-17 between milepost 300 and milepost 313. It will link coverage from Rarick Canyon to Woods Canyon.

Carrier Antenna Heights:

VoiceStream - 175'	Verizon - 165'	US West - 195'
Alltel - 185'	AT&T - 145'	Sprint - 155'

3.2.3.1 Visual Quality

The tower would be located in a relatively undisturbed area and would attract some attention away from the natural landscape. Originally, this site was located in the vicinity of the traffic pullout. This site was relocated to the present location to satisfy Forest Service concerns over visual impacts. The VQO of retention for the immediate foreground and foreground area where the angle of view was head-on would meet Modification because the tower would dominate the natural character. The VQO of Retention for the foreground and middle-ground areas viewed from I-17 would meet Partial Retention for the tangential angle of exposure. The tower and its associated facilities would be evident to the casual observer, but natural landscape would remain the dominant feature in the setting from these distance zones and angle of exposure orientation. The Rocky Park tower will have a visibility distance total of 1.2 miles or a duration of visibility of 59 seconds from a vehicle traveling 75 miles an hour on I-17. The need for electrical power and telephone connections will add to the visual impact if overhead power lines are used, particularly in the areas close to I-17.

Recommended mitigation: Underground utilities placed within the existing road where visible from I-17.

3.2.3.2 ROS

The current site setting is roaded natural. The area is within the Rattlesnake Seasonal

Closure . The area is closed to motorized use from August 15 through December 31 to provide non-motorized hunting opportunities. An existing road will be used for access to the site. The carriers will need access to the site during the closure period in case of equipment failure and some routine maintenance. Access to the site can be controlled by use of a gate to restrict use of the road to authorized communication site personnel. Because the need for operational site visits will be infrequent, the presence of the site will not affect the quiet area or compromise the objectives for the area. The presence of a communication site at this location will not change the ROS from roaded natural.

3.2.3.3 Wildlife

Of all the tower sites, the Rocky Park site is the most important for wildlife because it is not directly adjacent the freeway and the forest is transitional ponderosa pine and oak to pinyon and juniper. Habitat at the edges of two or more vegetation communities provide a greater variety of resources and generally over a longer season than homogenous vegetation type.

The ponderosa pine and oak to pinyon and juniper transition at the Rocky Park site marks the edge of the Mogollon Rim and these forests are winter range for deer, elk, and turkey. There are known turkey roost sites northeast of the site. This tower site is also located within the Forest Service Rattlesnake Seasonal Closure, an area closed to motor vehicles from August 15 to December 31 to provide recreation opportunities in areas undisturbed by vehicles. Primarily bow hunters use the Rattlesnake Seasonal Closure. The access road for the proposed site would be restricted to communication site management purposes. Restricting the use of the access road would maintain current conditions and management objectives for the area.

This is an important fall concentration area for turkey as flocks join together in preparation for winter. Construction activities could impact turkey flock survivability over the winter, if they occurred in the fall. Deer and elk would most likely avoid the construction site, and up to ½ mile from it during the day. Deer and elk commonly return to their routine use areas at night when human disturbance ceases. Turkey are not active at night and are more intolerant of disturbance, therefore would be more impacted. Construction activities would not be compatible with the Quiet Area objectives.

Recommended mitigation: (1) Gate the access road at the boundary of the quiet area. (2) Apply Rattlesnake closure dates to restrict construction during August 15 - December 31 to reduce impacts to turkey and for compatibility with Quiet Area designation.

3.2.3.3.1 Threatened and Endangered and Sensitive Wildlife Species

At the proposed Rocky Park tower site, there may be potential habitat in grassy areas for Navajo Mountain Mexican vole. Less than one acre of habitat for this small mammal would be lost. There is foraging habitat for northern goshawks at the proposed site. No goshawks were found during goshawk surveys in the project area completed in 2000 as part of the Rocky Park Prescribed Burn Project. Northern goshawks will not be impacted because (1) no modification of nesting habitat will occur and (2) the minor loss of foraging habitat would not be discernable to this raptor that forages over expansive areas exceeding 6,000 acres. Bald eagles can commonly be seen in the vicinity of this site. There are known bald eagle winter roost sites located greater than three quarters of a mile from the site. The Rocky Park site will not affect the bald eagle (project record document #60). There is no suitable Mexican spotted owl habitat at the site. Two seasons (1999 and 2000)

of Mexican spotted owl surveys have been completed in the project area as part of the Rocky Park Prescribed Burn Project and no owls have been detected. The Mexican spotted owl will not be affected because (1) no modification of suitable owl habitat will occur and (2) construction activities are sufficiently distant from known breeding pairs so that no disturbance will occur.

3.2.3.4 Vegetation

The forest at the Rocky Park site is open ponderosa pine with oak and a few alligator juniper. The forest is generally characterized by grassy openings over approximately 45% of the area with scattered pine and oak over 25% of the area and clumps of small pines (jack pine) less than 10 inches diameter at breast height over about 20% of the area. Grass is the dominant understory herbaceous plant. As discussed above, the Rocky Park site is at an ecotone where ponderosa pine and oak give way to pinyon and alligator juniper forest within one half mile south and west of the site. A greater variety of herbaceous plants generally characterize transitional communities because associated plants from both forests intergrade. Appendix C documents all plant species identified during field surveys. No high priority Forest Service weed species were identified at the Rocky Park site. Minor occurrences of mullein, toadflax, yellow sweet clover, and cheatgrass were documented along Forest Road 80, the access to the site, and mullein, cheat grass, and yellow sweet clover were documented at the site.

3.2.3.4.1 Sensitive Plant Species

Three Forest Service sensitive plant species were targeted during a September field survey of the tower site: Rusby's milkvetch (*Astragalus rusbyi*), Flagstaff beardtongue (*Penstemon nudiflorus*), and Mt. Dellenbaugh sandwort (*Arenaria aberans*). No sensitive plant species were found during the survey.

3.2.3.5 Cultural Resources

No archaeological sites were found. An archaeological report has been completed and can be found in the project record.

3.2.3.6 Soils/Water

These soils are subject to trafficability problems and soil damage (compaction, puddling and displacement) when wet. Upon removal of overstory, alligator juniper and Gambel oak may offer significant plant competition. There are no surface water resources at the site.

Landform:		Elevated Plains
Bedrock:		Basalt
Parent Material:		Residuum, Basalt/cinders
Soil Conditions:		Satisfactory
Hazards	Erosion:	Slight
	Windthrow:	Severe, low strength
	Plant Comp:	Moderate, alligator juniper, Gambel oak
TES Number:		578

Recommended mitigation: Restrict ground disturbing activities to periods when the soils are dry.

Figure 8. Map showing the location of the proposed Woods Canyon site.

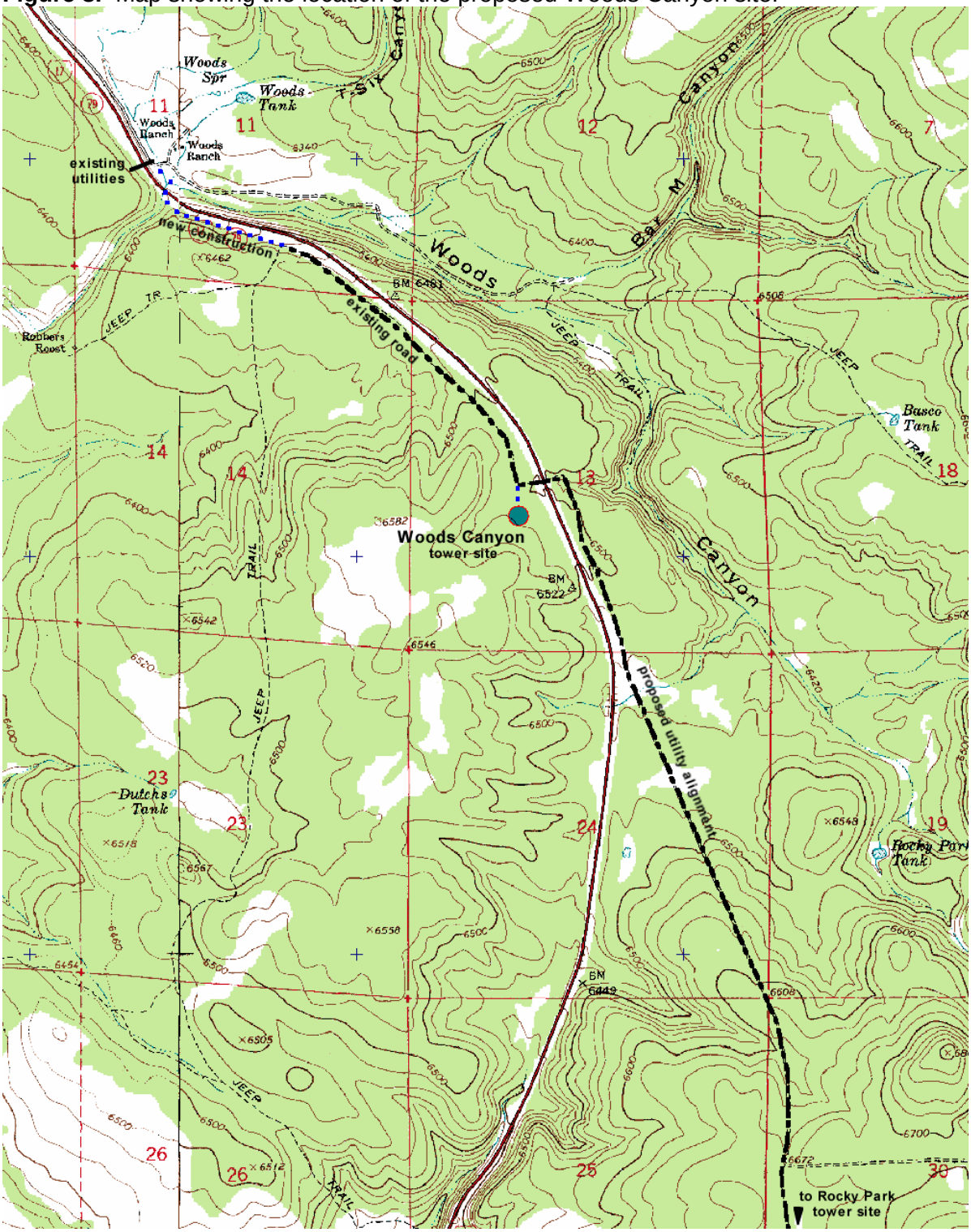
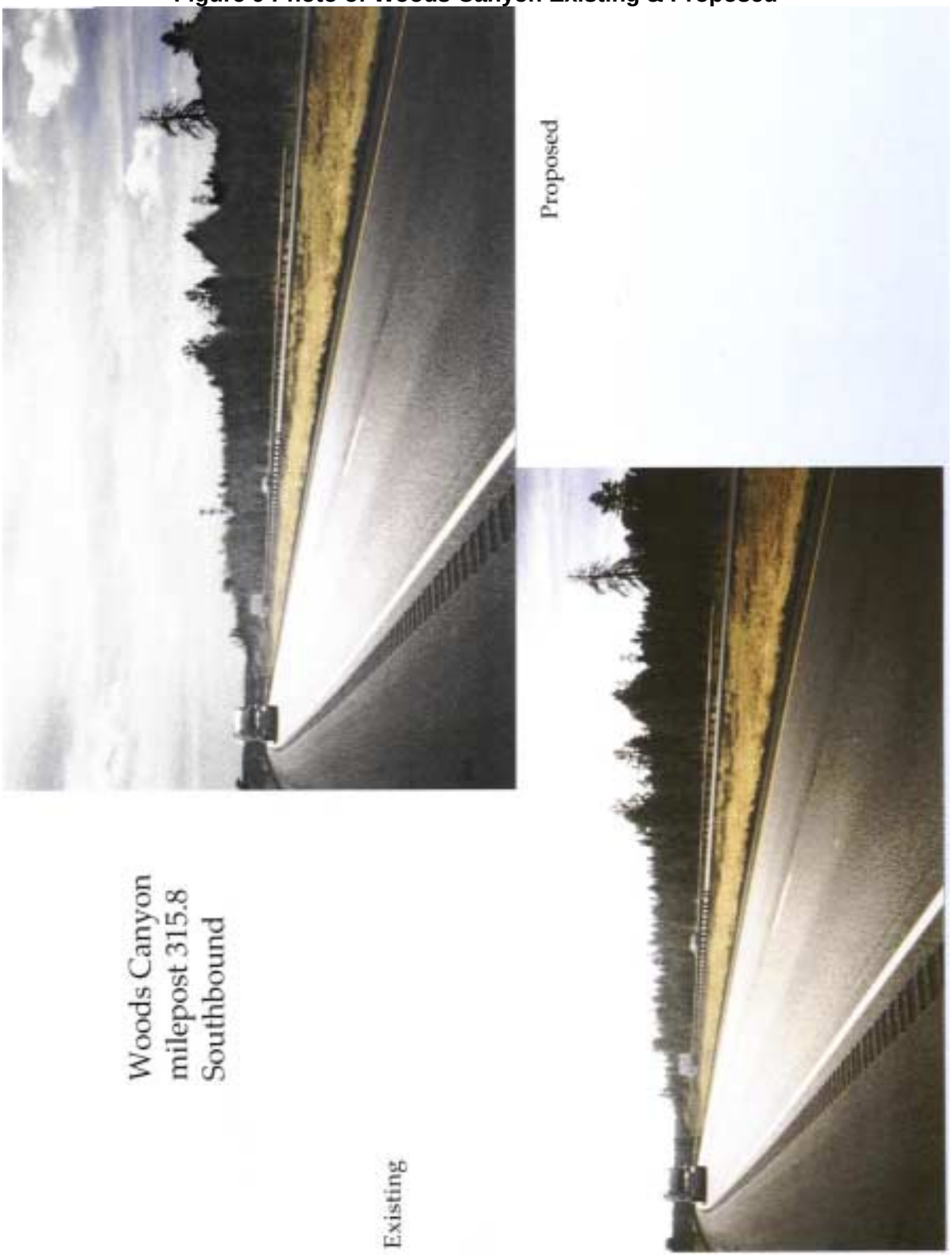


Figure 9 Photo of Woods Canyon Existing & Proposed



3.2.4 Proposed Action - Woods Canyon

Alternative A — A 180-foot structure is proposed for the site.

Alternative B — Two 160-foot structures.

Coordinates: 34-51-06.18 N / 111-36-30.24 W
NE¼SW¼ Sec 13 T17N R7E

Access: Access is gained using a dirt road west off Exit 315 (Woods Canyon Road).

Proposed Lease Area: A 100' x 200' area.

Proposed Structure: Alternative A: A 180-foot structure
Alternative B: Two 160-foot structures

Utility Status: Utilities are located 2.5 miles from the site.

Comments: Minimal tree removal will be necessary.

RF Coverage Objective: This site located within the Coconino National Forest will provide coverage on I-17 between milepost 313 and milepost 320. It will link coverage from Douglas Mountain to Rocky Park.

Carrier Antenna Heights:

Alternative A –

VoiceStream - 160'	Verizon - 140'	US West - 170'
Alltel - 130'	AT&T - 180'	Sprint - 150'

Alternative B:
AT&T and Quest –160’
VoiceStream and Sprint – 150’
Verizon and Alltell – 140’

3.2.4.1 Visual Quality

Constructing two 160-foot towers instead of one 180-foot tower at the proposed Woods Canyon site would substantially increase the spatial prominence of these built features in the natural landscape. The height differential would slightly lower the visibility of the towers from the interstate; however, the construction of two towers with their associated arrays and microwave dishes would attract more attention than a single tower. The construction of the two towers would also increase the area of disturbance compared with one tower, and lower the inherent scenic integrity of the area immediately adjacent to the tower site until the site can revegetate. The Woods Canyon tower(s) will have a distance visible total of 1.5 miles or a duration of visibility of 1.3 minutes from a vehicle traveling 75 miles per hour on I-17. The need for electrical power and telephone connections will contribute to visual impacts if overhead lines are used, particularly in the area where the proposed access road and utility corridor are close to I-17.

Recommended mitigation: Underground utilities placed within the existing road that will be used for access where visible from I-17.

3.2.4.2 ROS

Because of the proximity of I-17 to the site, current ROS setting at the proposed site is Roaded/Natural. Development of a communication site at this location will not change the ROS setting of the area.

3.2.4.3 Wildlife

The Wood's Canyon site is located next to the right-of-way fence of I-17 and the Wood's Canyon exit, which decreases the habitat potential at the site for deer, elk, turkey, and some birds. Wildlife potential is also low at this site because there is no surface water at or near the site, neither seasonal nor perennial. There is important deer, elk, and turkey habitat in the general vicinity. The tower site is located within and near the boundary of the Woods Seasonal Closure area, which is closed to vehicles between December 15 and April 01 to minimize disturbance to big game winter habitat. Perimeter roads along the Woods Seasonal Closure are open to vehicles. Big game would not be impacted by construction or operation or maintenance of the site because of its location adjacent to the freeway.

3.2.4.3.1 Threatened and Endangered and Sensitive Wildlife Species

There may be potential habitat in grassy areas for Navajo Mountain Mexican vole at the Woods Canyon tower site. Less than one acre of habitat for this small mammal would be lost. The forest architecture and composition is good foraging habitat for northern goshawks, but the stand is too open for nest habitat. No goshawks were found during goshawk surveys in the project area completed in 2000 as part of the Rocky Park Prescribed Burn Project. Northern goshawks will not be impacted because (1) no modification of nesting habitat will occur and (2) the minor loss of foraging habitat would not be discernable to this raptor that forages over expansive areas exceeding 6,000 acres. Bald eagles may forage in the project vicinity as they search along the freeway for road-killed deer and elk carcasses. The Wood Canyon site will not affect the bald eagle (project record document #65). There is no suitable Mexican spotted owl habitat at the site. Two seasons (1999 and 2000) of Mexican spotted owl surveys have been completed in the project area as part of the Rocky Park Prescribed Burn Project and no owls have been detected. The Mexican spotted owl will not be affected because (1) no modification of suitable owl habitat will occur and (2) construction activities are sufficiently distant from known breeding pairs so that no disturbance will occur.

3.2.4.4 Vegetation

The Woods Canyon site is located in a broad swale. The forest is open second-growth ponderosa pine with scattered oaks and small clumps of pole-sized ponderosa pines. Understory plants are primarily grasses. The low summit of a ridge marking a lava flow just west of the site is a grassy meadow with sparse pines and rare juniper. Appendix C documents all plant species identified at the Woods Canyon site. No dense weed populations were noted at this site nor along the freeway exits. Toadflax is the dominant weed and was estimated at less than one percent of all ground cover plants.

3.2.4.4.1 Sensitive Plant Species

Three Forest Service sensitive plant species were targeted during a September field survey of the tower site: Rusby's milkvetch (*Astragalus rusbyi*), Flagstaff beardtongue (*Penstemon nudiflorus*), and Mt. Dellenbaugh sandwort (*Arenaria aberans*). No sensitive plant species were found during the survey.

3.2.4.5 Cultural Resources

No archaeological sites were found. An archaeological report has been completed and can be found in the project record.

3.2.4.6 Soils/Water

These soils are subject to trafficability problems and soil damage (compaction, puddling and displacement) when wet. Shallow soils and surface rock fragments limit most management activities. Upon removal of overstory, alligator juniper and Gambel oak may offer significant plant competition. There are no surface water resources at the proposed site.

Landform:		Elevated Plains
Bedrock:		Basalt
Parent Material:		Residuum, Basalt/cinders
Soil Conditions:		Satisfactory
Hazards	Erosion:	Slight
	Windthrow:	Severe, too shallow
	Plant Comp:	Severe, alligator juniper, Gambel oak
TES Number:		579

Recommended mitigation: Restrict ground disturbing activities to periods when the soils are dry.

Figure 10. Map showing the location of the proposed Douglas Mountain site.

Figure 11- **Photo of Douglas Mountain Existing & Proposed**

Douglas Mtn.
milepost 321
Southbound

Existing

Proposed

3.2.5 Proposed Action - Douglas Mountain

This site is located within the footprint of ADOT Maintenance Facility. A 190-foot structure is proposed. Utilities are located at the site. No tree removal would be necessary.

Coordinates:	34-54-52.2 N / 111-38-43.1 W NW¼SW¼ Sec 27 T18N R7E
Access:	Access is gained using Schnebly Hill Road exit into ADOT Maintenance Facility.
Proposed Lease Area:	A 100' x 200' area.
Proposed Structure:	A 190-foot structure
Utility Status:	Utilities are located at the site.
Comments:	No tree removal will be necessary.
RF Coverage Objective:	This site located within the Coconino National Forest will provide coverage on I-17 between milepost 320 and milepost 326. It will link coverage from Ritter Mountain to Woods Canyon.

Carrier Antenna Heights:

VoiceStream - 180'	Verizon - 170'	US West - 160'
Alltel - 190'	AT&T - 140'	Sprint - 150'

3.2.5.1 Visual Quality

An alternative site to the ADOT maintenance yard was considered in an attempt to mitigate visual issues. This alternative site is located on a hill approximately one half mile southwest of the ADOT Maintenance Yard at the Schnebly Hill Road exit. A 190-foot structure would also be required at this alternative site. Utilities are located in proximity to the site. Access is gained using Schnebly Hill Road. The alternative to the ADOT site was based on recommendations in the February 2000 document in an attempt to reduce the head-on views of the facility. However, further analysis indicated that if the tower were located at the ADOT Maintenance Yard, there would probably be no difference in the distance or duration of view or the angle of viewer exposure from I-17 and the structure would still need to be 190 feet tall. The existing buildings and equipment at the ADOT Yard already lowers the visual integrity of the site. Construction of the communication tower within the maintenance facility would not substantially change the existing visual character of this portion of the forest, and would require minimal clearing of the vegetation as compared to the alternative Douglas Mountain site. No additional vegetation clearing for maintenance access or power would be required if the tower were built in the ADOT Maintenance Yard. In addition, there would be no need for new road or utilities construction. This proposed tower at the ADOT yard would have a distance visible total of 3.4 miles or a duration of visibility of 3.2 minutes from a vehicle traveling 75 miles per hour on I-17.

3.2.5.2 ROS

The current ROS setting of the proposed site is Roaded Natural. The site is within an area previously disturbed by the Little Antelope Maintenance Yard, operated under special use permit from the Forest Service by ADOT. Development of a communication site at this location will not change the ROS setting.

3.2.5.3 Wildlife

Tower construction at the ADOT maintenance yard would have no effect on wildlife. This developed site is next to the I-17 freeway and the busy Schnebly Hill Road, and the current level of human activity and traffic decreases the habitat potential for deer, elk, turkey, and some birds. Lack of any surface water near the proposed site also reduces wildlife habitat.

3.2.5.3.1 Threatened and Endangered and Sensitive Wildlife Species

The original proposed site on Oak Hill was moved to the ADOT Maintenance camp to avoid impacts to a known goshawk nesting area. In addition to visual impacts, the original site would also have required road construction and tree removal, adding to resource impacts. There are no issues for threatened and endangered or sensitive wildlife species at the ADOT maintenance yard site. The site is too developed and too close to the freeway for most wildlife species. Goshawk and Mexican spotted owl surveys were completed the summer of 2000 in the vicinity of this project area and no goshawks or Mexican spotted owls were found. The site is sufficiently distant from the nearest known goshawk and Mexican spotted owl nesting areas so that no disturbance to breeding behavior will occur. Bald eagles may forage in the project vicinity as they search along the freeway for road-killed deer and elk carcasses. The Douglas Mountain site will not affect the bald eagle (project record document #63).

3.2.5.4 Vegetation

Native vegetation would not be impacted by tower installation at the ADOT yard. An exotic weed species, diffuse knapweed, was identified at the maintenance yard and at the I-17 Schnebly Hill exit. Diffuse knapweed is spreading along the Schnebly Hill Road from the freeway exit. Appendix C documents all plant and weed species identified in the vicinity of the Douglas Mountain site. Control of knapweed at the site will be coordinated with ADOT. Construction and maintenance equipment/vehicles leaving this site could spread knapweed. Standard operating procedures requiring equipment be cleaned will minimize spread.

3.2.5.4.1 Sensitive Plant Species

No sensitive plant species were found during September field surveys.

3.2.5.5 Cultural Resources

No archaeological sites were found. An archaeological report has been completed and can be found in the project record.

3.2.5.6 Soils/Water

This map unit has a severe erosion hazard. Maintenance of vegetative groundcover is essential to prevent sheet and rill erosion. These soils are subject to trafficability problems and soil damage (compaction, puddling and displacement) when wet. Natural regeneration potential is high. There are no surface water resources on the site.

Landform:		Cinder Cones
Bedrock:		Basalt
Parent Material:		Colluvium, Cinders/Basalt
Soil Conditions:		Satisfactory
Hazards	Erosion:	Severe
	Mass Wasting:	Slight
	Windthrow:	Moderate, low strength
	Plant Comp.:	Moderate, Gambel oak, New Mexico locust
TES Number:		565

Recommended Mitigation: Restrict ground disturbing activities to periods when the soils are dry.

Figure 12. Map showing the location of the proposed Ritter Mountain site.

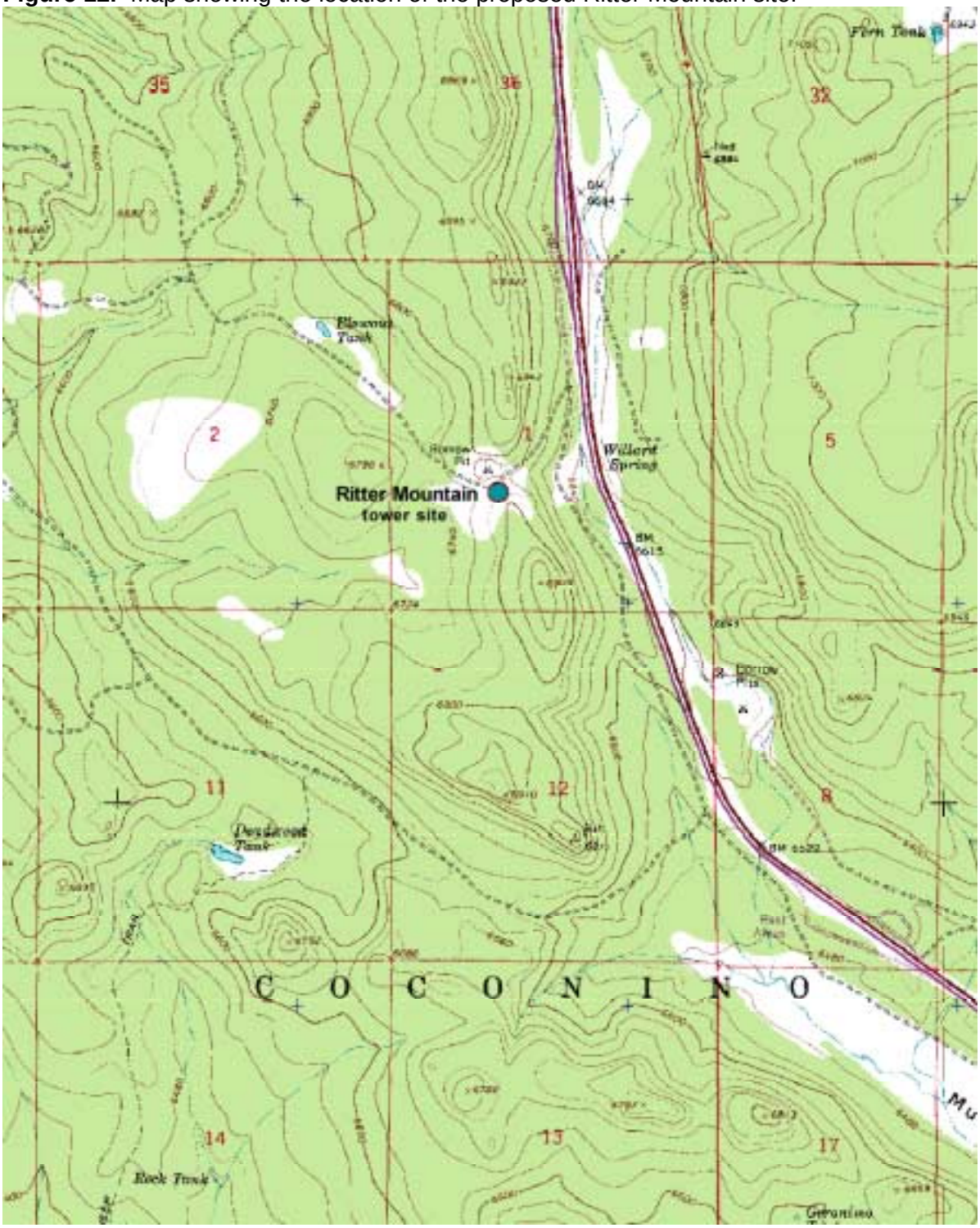
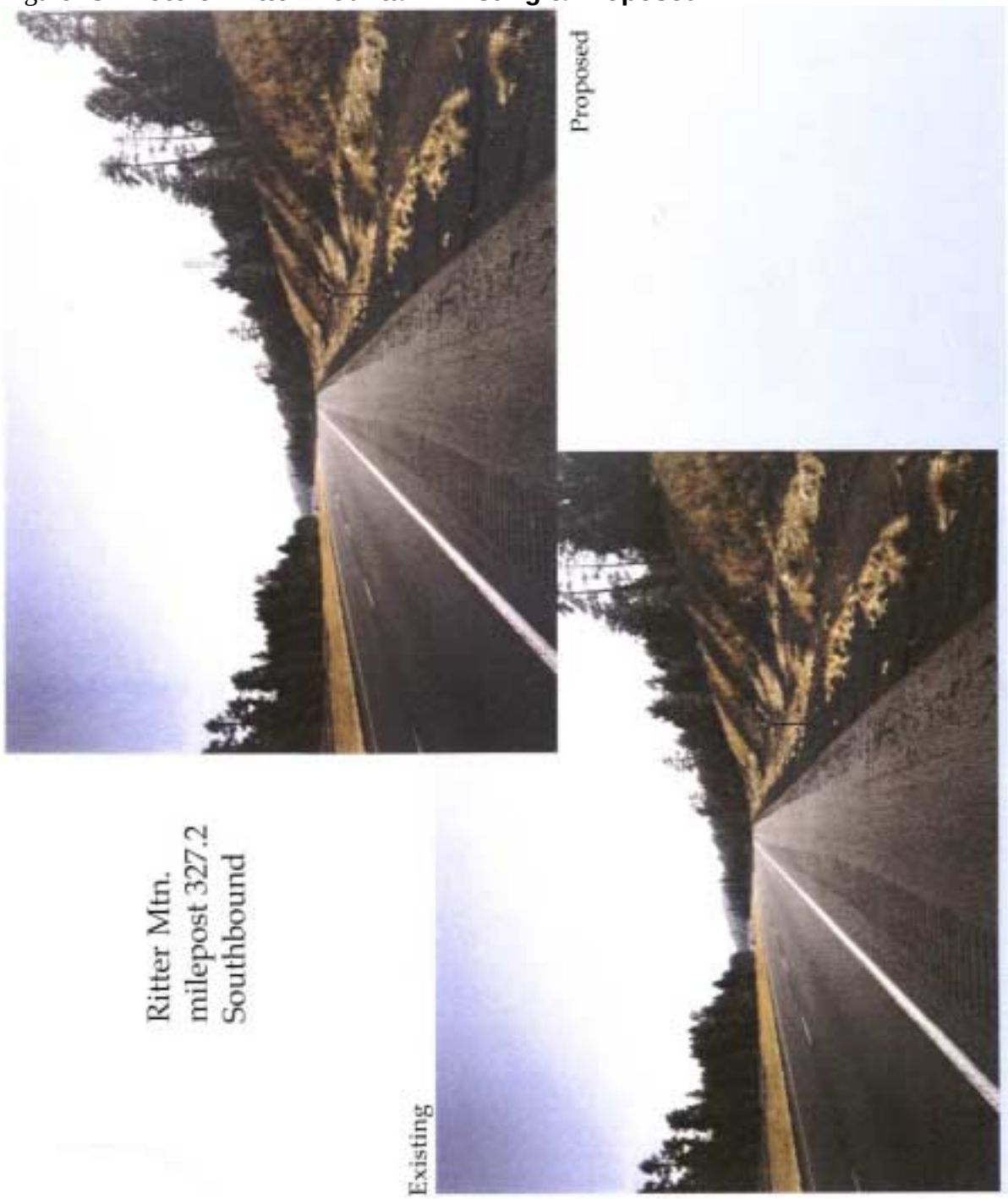


Figure 13 **Photo of Ritter Mountain Existing & Proposed**



3.2.6 Proposed Action - Ritter Mountain

This site is east of the Yavapai County Transfer Station off of I-17 at the Willard Springs Road exit.

Alternative A	A 195-foot structure is proposed for this site.
Alternative B	Two 180-foot structures.
Coordinates:	34-58-16.43 N / 111-41-23.49 W NE¼SW¼ Sec 1 T18N R6E
Access:	Access is gained using paved road off Exit 326 that leads to Transfer Station.
Proposed Lease Area:	A 100' x 200' area.
Proposed Structure:	Alternative A: A 195-foot structure Alternative B: Two 180-foot structures
Utility Status:	Utilities are located near the site.
Comments:	Minimal tree removal will be necessary.
RF Coverage Objective:	This site located within the Coconino National Forest will provide coverage on I-17 between milepost 326 and milepost 333. It will link coverage from James Canyon for Douglas Mountain.

Carrier Antenna Heights:

Alternative A –

VoiceStream - 195'	Verizon - 185'	US West - 175'
Alltel - 165'	AT&T - 155'	Sprint - 145'

Alternative B:
VoiceStream and Verizon – 180’
Quest and Alltell – 170’
AT&T and Sprint – 160’

3.2.6.1 Visual Quality

Similar to Woods Canyon, constructing two 180-foot towers instead of one 195-foot tower at the proposed Ritter Mountain site would substantially increase the spatial dominance of these built features in the natural landscape. The height differential would not noticeably lower the visibility of the towers from the interstate. The construction of two towers with associated arrays and microwave dished would attract more attention that a single tower. The construction of two towers would also increase the area of disturbance compared with one tower, and lower the scenic integrity of the area immediately adjacent to the tower site until the site can revegetate. This tower(s) will have a distance visible total of 1.1 miles or a duration of visibility of 51 seconds from a vehicle traveling 75 miles per hour on I-17.

3.2.6.2 ROS

Because the proposed site is located adjacent to the Coconino County Transfer Station and is within an area previously disturbed by past mining and the County landfill operations, the ROS setting is Roaded Natural. Development of a communication site at this location will not change the ROS setting.

3.2.6.3 Wildlife

Wildlife habitat potential is low at the proposed Ritter Mountain site because this site is next to an old landfill and the Yavapai County waste transfer station. There is moderate traffic into the transfer station and the level of human activity and vehicles discourage large game animals and turkey, as well as a variety of other wildlife species, such as owls and hawks. Lack of surface water at or near the site also decreases the wildlife potential in the area. There is no key wildlife habitat information on file at the Coconino National Forest District offices for this site.

3.2.6.3.1 Threatened and Endangered and Sensitive Wildlife Species

There may be potential habitat for Navajo Mountain Mexican vole at the site and across the old landfill area. Less than one acre of habitat for this small mammal would be lost. Bald eagles have been historically observed in this vicinity, attracted by the former landfill where they scavenged. Closure of the landfill has decreased the potential for eagles at the site, though eagles may occasionally forage and perch in the general vicinity. The Ritter site will not affect the bald eagle (project record document #66). The site is not suitable habitat for Mexican spotted owls or northern goshawks. The site is sufficiently distant from the nearest known goshawk and Mexican spotted owl nesting areas, so that no disturbance to breeding behavior will occur.

3.2.6.4 Vegetation

Native vegetation has been cleared and scraped at the site pad and the dominant plants are grasses and native and non-native weeds and herbs. Appendix C lists all plant species identified in the project area, including exotic weeds. Diffuse knapweed was identified at the site, and this is a Forest Service high priority weed for control. Knapweed was documented growing on the road shoulder from the transfer station to approximately one half mile east of the station. Coconino County is currently preparing a weed management plan for the transfer station and access road.

3.2.6.4.1 Sensitive Plant Species

Three Forest Service sensitive plant species were targeted during a September field survey at the Ritter Mountain site: Rusby's milkvetch (*Astragalus rusbyi*), Flagstaff beardtongue (*Penstemon nudiflorus*), and Mt. Dellenbaugh sandwort (*Arenaria aberans*). No sensitive plant species were found.

3.2.6.5 Cultural Resources

No archaeological sites were found. An archaeological report has been completed and can be found in the project record.

3.2.6.6 Soils/Water

These soils are subject to trafficability problems and soil damage (compaction, puddling and displacement) when wet. This component is well suited to timber production. Natural regeneration, reforestation and revegetation potentials are high. There are no surface water resources on the proposed site.

Landform:		Elevated Plains
Bedrock:		Basalt
Parent Material:		Residuum, Basalt/cinders
Soil Conditions:		Satisfactory
Hazards	Erosion:	Slight
	Windthrow:	Severe, low strength
	Plant Comp.:	Slight, Gambel oak
TES Number:		582

Recommended mitigation: Restrict ground disturbing activities to periods when the soils are dry.

Figure 14. Map showing the location of the proposed James Canyon site.

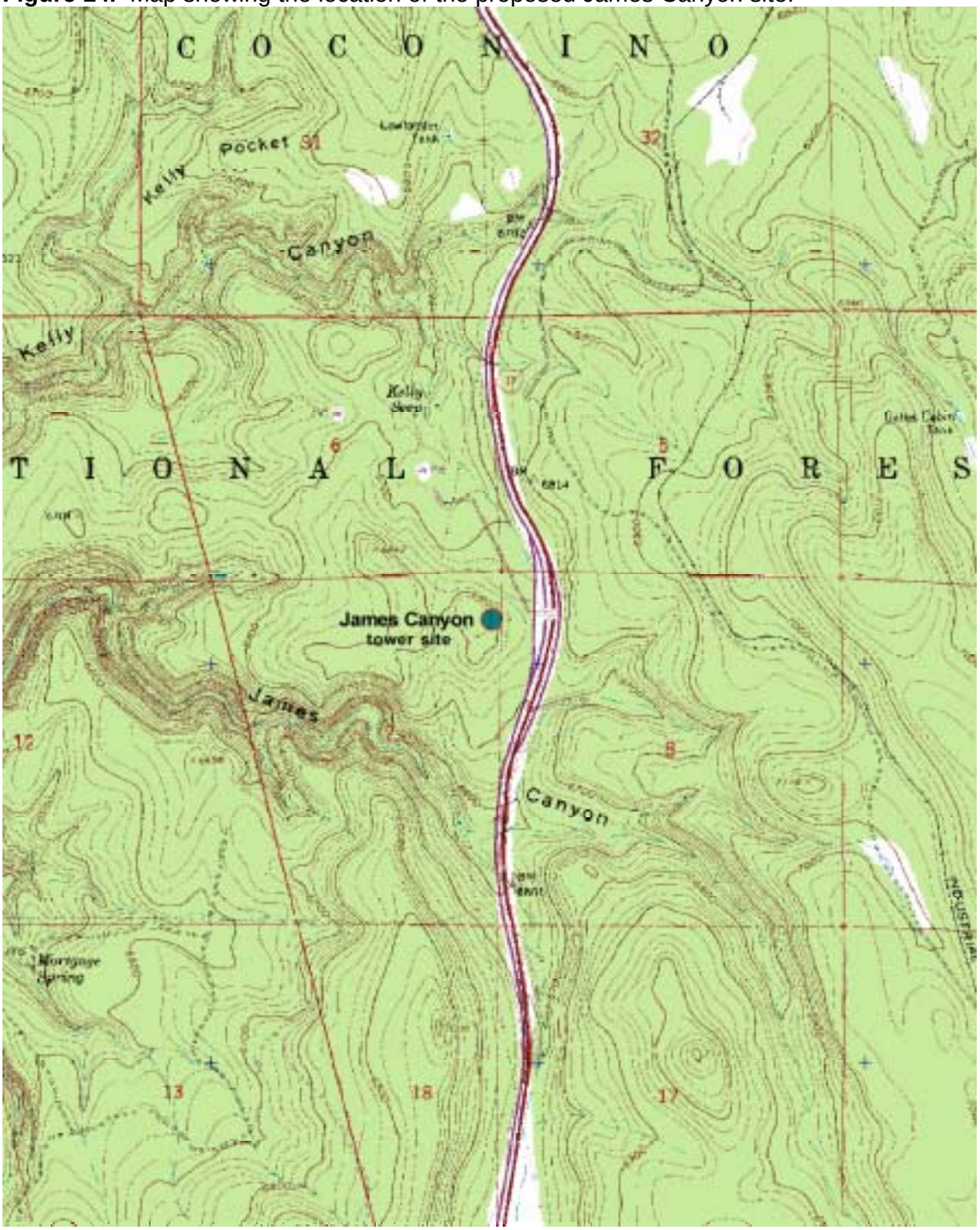
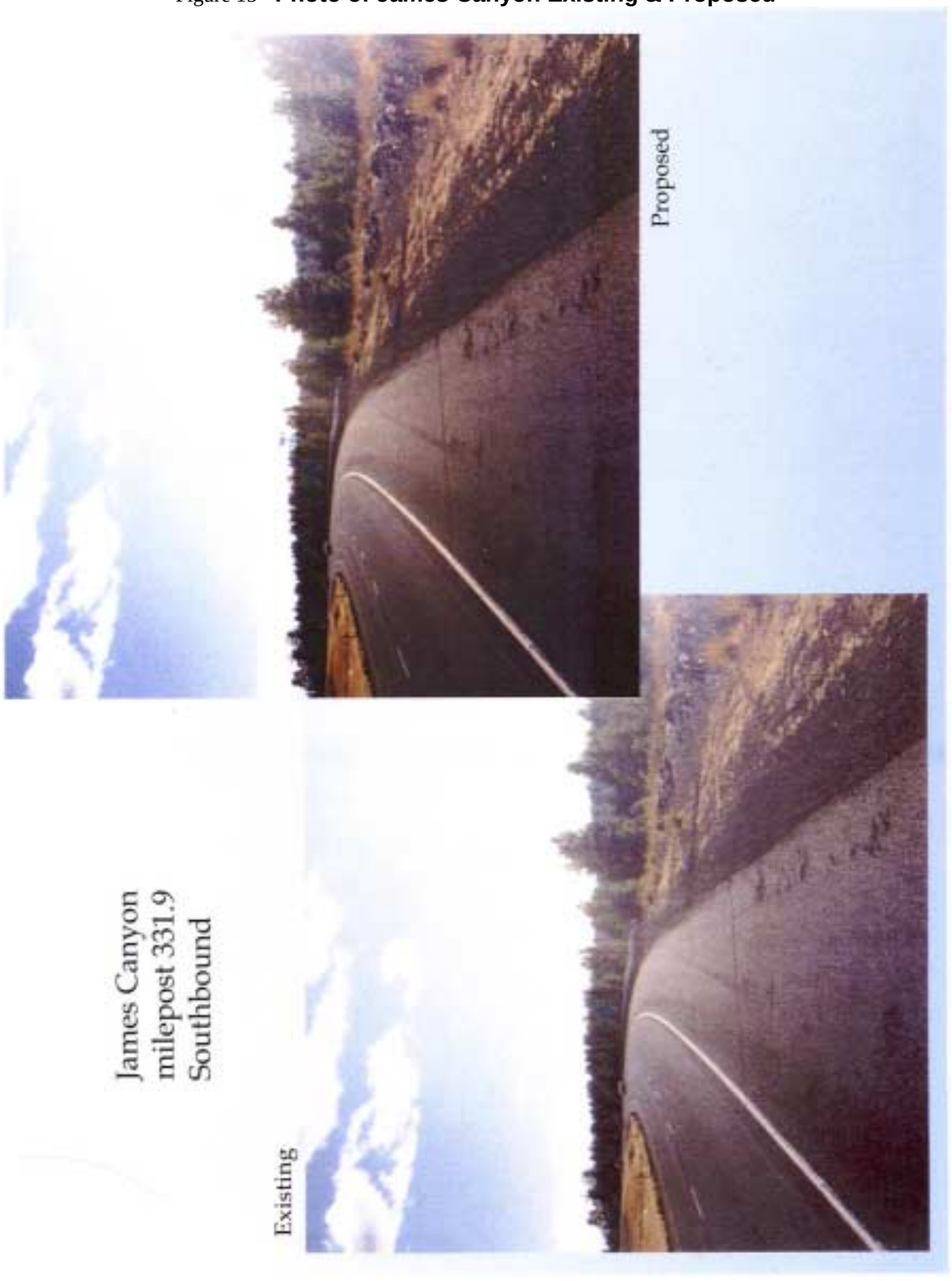


Figure 15 - **Photo of James Canyon Existing & Proposed**



3.2.7 Proposed Action - James Canyon

Coordinates:	35-03-06.52 N / 111-41-08.54 W NE¼NE¼ Sec 7 T19N R7E
Access:	Access is gained using an existing primitive road located just west of Exit 331 (Kelly Canyon Exit)
Proposed Lease Area:	A 100' x 200' area.
Proposed Structure:	A 170-foot structure
Utility Status:	Utilities are located near to the site.
Comments:	Some tree removal will be necessary for both access road and site.
RF Coverage Objective:	This site located within the Coconino National Forest will provide coverage on I-17 between milepost 333 and the Flagstaff area. It will link coverage from Ritter Mountain to sites on private fee land to the north.

Carrier Antenna Heights:

VoiceStream - 150'	Verizon - 160'	US West - 170'
Alltel - 120'	AT&T - 130'	Sprint - 140'

3.2.7.1 Visual Quality

The James Canyon site tower would be visible for a total distance of one mile or for approximately 46 seconds along I-17 in the foreground and middleground distance zones. Of the duration of view time, 52% of the viewer exposure (24 seconds) would be head-on from travelers going southbound on I-17. The James Canyon tower would not be visible from SR 89A.

3.2.7.2 ROS

The current ROS setting at the proposed site is Roaded Natural. The proposed site is located within .2 miles of I-17 and near an existing overhead electric line. Development of a communication site at this location will not change the ROS setting of the area.

3.2.7.3 Wildlife

There is no key wildlife habitat information on file at the Coconino National Forest District offices for the James Canyon site. The wildlife potential is evaluated as low at this proposed tower pad. There is no seasonal or perennial surface water, and the site is located just west of the I-17 freeway on a ridge summit. Freeway traffic noise is especially noticeable, which may discourage some wildlife species. Numerous wildlife species, including black bear, can be found to the south in the canyon that this site is named for. The canyon is used as a big game movement corridor. Construction, operation, and maintenance of the site will not affect big game use of the nearby canyon because of

topographic and distance separation.

3.2.7.3.1 Threatened and Endangered and Sensitive Wildlife Species

There may be potential habitat for Navajo Mountain Mexican vole in small forest openings, and especially in the cleared area beneath the phone line along the east boundary of the site. Less than one acre of habitat for this small mammal would be lost. The surrounding forest is suitable foraging habitat for northern goshawks and marginal foraging habitat for Mexican spotted owls, but the forest is too open for nesting habitat for either of these birds. Mexican spotted owl surveys conducted near the project area in 1990, 1991, 1993, and 2000 did not document owls within the project area. The James Canyon site will not affect the Mexican spotted owl (project record document #67). Northern goshawk surveys in the project area were completed in 2000 for the Grand Canyon Forest Partnership project and no goshawks were detected. There are known northern goshawk and Mexican spotted owl nest sites in the general project area, but these are topographically separated from the site such that construction activities would not disturb birds during the breeding season. Wintering bald eagles may travel through the project area but would not be affected by the project (project record document # 67).

3.2.7.4 Vegetation

This site is characterized by 40 to 50 percent tree cover, primarily ponderosa pines less than twelve inches diameter at breast height. Approximately five percent of the forest stand is Gambel oak. There is little herbaceous ground cover at the site because only a thin veneer of soil covers volcanic bedrock. The forest is not multilayered and there is minimal down and dead logs and woody debris. Exotic weeds were minimal at this site composed only of minor occurrences of cheat grass. Diffuse knapweed, a Forest Service high priority exotic weed, was documented growing at the James Canyon exit off the I-17 freeway and for approximately one half mile northwest along the FR 631 access road.

3.2.7.4.1 Sensitive Plant Species

Three Forest Service sensitive plant species were targeted during a September field survey at the James Canyon site: Rusby's milkvetch (*Astragalus rusbyi*), Flagstaff beardtongue (*Penstemon nudiflorus*), and Mt. Dellenbaugh sandwort (*Arenaria aberans*). No sensitive plant species were found.

3.2.7.5 Cultural Resources

No archaeological sites were found. An archaeological report has been completed and can be found in the project record.

3.2.7.6 Soils/Water

These soils are subject to trafficability problems and soil damage (compaction, puddling and displacement) when wet. Shallow soils and surface rock fragments severely limit most management activities. There are no surface water resources on the proposed site.

Landform:	Elevated Plains
Bedrock:	Basalt
Parent Material:	Residuum, Basalt/cinders

Soil Conditions:		Satisfactory
Hazards	Erosion:	Slight
	Windthrow:	Severe, too shallow
	Plant Comp.:	Severe, Gambel oak
TES Number:		585

Recommended mitigation: Restrict ground disturbing activities to periods when the soils are dry.

4.0 CONSULTATION WITH OTHERS

4.1 List of Persons Consulted

On April 10, 2000, a proposal letter for the proposed wireless communication towers located along I-17 between Flagstaff and just south of Camp Verde was mailed out to 1204 addresses which includes organizations, agencies, and individuals on the Prescott and Coconino National Forests' Land management Plan mailing list. On April 24, 2000, an additional 6 copies were mailed out.

On April 23, 2000, an article appeared in the Arizona Daily Sun.

As of June 12, 2000, only 35 responses were received either via telephone, mail, or e-mail. Only 6 of these mailings were returned due to insufficient or moved addresses.

The results of the comments are as follows:

In Favor:	21
Against:	9
Neutral:	5

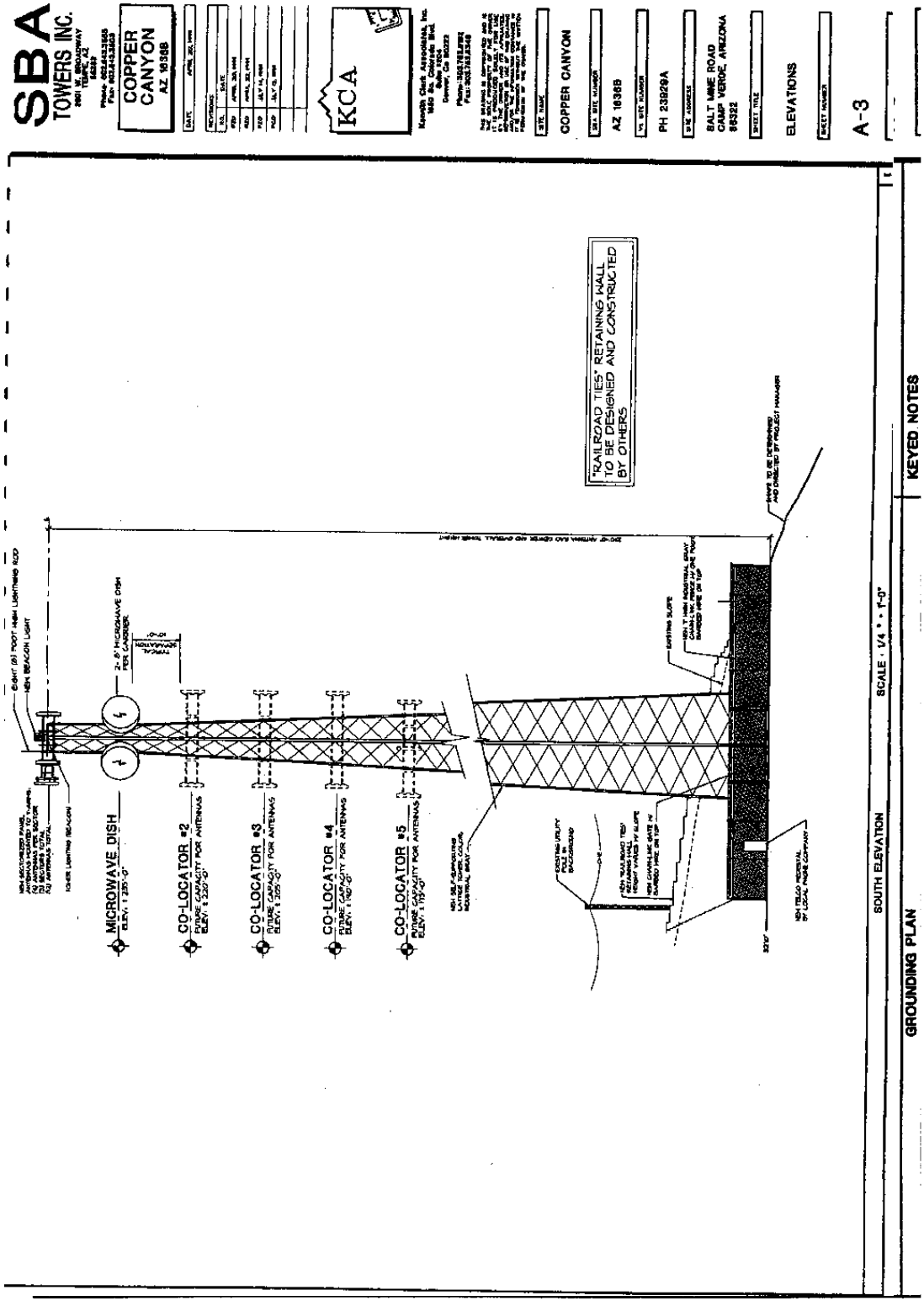
Some of those in favor of the towers still listed issues of concern:

- visibility (5)
- removal of towers when obsolete/length of usefulness of towers (4)
- restricted easements/access (3)
- underground utilities (2)
- use smaller towers/more sites (2)
- siting James Canyon higher (1)
- devaluation of property (1)
- minimize impacts to habitat (1)
- no clear cutting (1)

The main issues of oppositions for the proposal:

- visual (6)
- believe that towers would only be for profit of the providers/money (2)
- effects of microwaves on plants and animals (2)
- opposed to cellular users, towers, payphones are fine
- opposed to new roads
- towers will become obsolete
- use existing sites (Mingus, Elden, etc...)
- use call boxes at strategic sites
- shorter towers are needed
- Forest Service should follow own guidelines (height <200', non-reflective paint, no guy wires)
- communication towers are responsible for killing 4 million migrating birds

APPENDIX A
Typical Site Layout



APPENDIX B

Threatened, Endangered, and Special Status Plant Species Considered in Project Area

Appendix sources include: species from the Coconino National Forest sensitive species list for the Peaks and Mormon Lake Districts, Threatened and Endangered species listed for Coconino County (from US Fish and Wildlife Service Internet web site-- http://ifw2es.fws.gov/endangeredspecies/lists/ListSpecies.cfm), and Wildlife Species of Concern in the State of Arizona from the Draft document, Wildlife of Special Concern in Arizona, October 14, 1996, Nongame Branch, Arizona Game and Fish, Phoenix.

Habitat evaluations for each species were determined by comparing project area features (geography, elevation, topography, geology, and vegetation) with the species life history, habitat, and range as described in published resources and from occurrence information on file at the Coconino National Forest Mormon Lake and Peaks Districts offices.

	Common Name	**Species Name**	**Federal, Arizona State, and Forest Service Status**	**Habitat Evaluation along I-17 Corridor**
	Mammals			
1	black-footed ferret	*Mustela nigripes*	Endangered	no
2	Navajo Mtn. Mexican vole	*Microtus mexicanus Navaho*	FS Sensitive[4]	yes
3	Hualpai Mexican vole	*Microtus mexicanus hualpaiensis*	Endangered	no
4	Wupatki Arizona pocket mouse	*Perognathus amplus cineris*	FS Sensitive	no
	Birds			
5	American peregrine falcon	*Falco peregrinus anatum*	FS Sensitive	no
6	bald eagle	*Haliaeetus leucocephalus*	Threatened	yes
7	California condor	*Gymnogyps californianus*	Endangered	no
8	Mexican spotted owl	*Strix occidentalis lucida*	Threatened	yes
9	northern goshawk	*Accipiter gentilis*	FS Sensitive	yes
10	Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	no
	Reptiles			
11	narrow-headed garter snake	*Thamnophis rufipunctatus*	FS Sensitive	no
12	northern leopard frog	*Rana pipiens*	FS Sensitive	no
	Fish			
13	humpback chub	*Gila cypha*	Endangered	no
14	Little Colorado spinedace	*Lepidomeda vittata*	Threatened	no
15	razorback sucker	*Xyrauchen texanus*	Endangered	no
	Snail			

[4] Endangered or Threatened status is the US Fish and Wildlife Service federal designation. FS Sensitive notes species not protected by the Endangered Species Act, but species that are managed for by the US Forest Service.

	Common Name	Species Name	Federal, Arizona State, and Forest Service Status	Habitat Evaluation along I-17 Corridor
16	Kanab ambersnail	*Oxyloma haydeni kanabensis*	Endangered	no
	Insects			
17	Arynxa giant skipper	*Agathymus aryxna*	FS Sensitive	no
18	Freeman's agave borer	*Agathymus bauer freemani*	FS Sensitive	no
19	early elfin	*Incisalia fotis*	FS Sensitive	no
20	Maricopa tiger beetle	*Cicindela oregona Maricopa*	FS Sensitive	no
21	spotted skipperling	*Piruna polingii*	FS Sensitive	no
22	mountain silverspot butterfly	*Speyeria nokomis nitocris*	FS Sensitive	no
23	blue-black silverspot butterfly	*Speyeria nokomis nokomis*	FS Sensitive	no
	Plants			
24	Arizona bugbane	*Cimicifuga arizonica*	FS Sensitive	no
25	Arizona sneezeweed	*Helenium arizonicum*	FS Sensitive	no
26	bearded gentian	*Gentiana barbellata*	FS Sensitive	no
27	Brady pincushion cactus	*Pediocactus bradyi*	Endangered	no
28	cliff fleabane	*Erigeron saxatilis*	FS Sensitive	no
29	crenulate moonwort	*Botrychium crenulatum*	FS Sensitive	no
30	disturbed rabbitbrush	*Chrysothamnus molestus*	FS Sensitive	no
31	Flagstaff beardtongue	*Penstemon nudiflorus*	FS Sensitive	yes
32	Flagstaff pennyroyal	*Hedeoma diffusum*	FS Sensitive	no
33	Mt. Dellenbaugh sandwort	*Arenaria aberans*	FS Sensitive	yes
34	Navajo sedge	*Carex specuicola*	Threatened	no
35	Polygala	*Polygala rusbyi*	FS Sensitive	yes[5]
36	San Francisco Peaks groundsel	*Senecio franciscanus*	Threatened	no
37	Rusby's milkvetch	*Astragalus rusbyi*	FS Sensitive	yes
38	sentry milkvetch	*Astragalus cremnophylax cremnophylax*	Endangered	no
39	Siler pincushion cactus	*Pediocactus sileri*	Threatened	no
40	Sunset Crater beardtongue	*Penstemon clutei*	FS Sensitive	no
41	Welsh's milkweed	*Asclepias welshii*	Threatened	no

[5] *Polygala rusbyi* is considered only for the Rarick Mountain site at the McGuireville rest stop.

APPENDIX C

Plant Species Lists from Northland Research, Inc.
September 1999 Field Surveys

Plant Species Identified during September 2000 field work for the proposed Cell Tower Array along Interstate 17 from Flagstaff south to Wood's Canyon exit and the Rocky Park site (Northland Research, Inc.)

Family	Species	Common Name	I-17 Corridor	James Canyon	Ritter Mtn.	Douglas Mtn.	Douglas Mtn. Borrow Pit	Rocky Park	Woods Canyon
TREES									
Cupressaceae	*Juniperus deppeana*	Alligator Juniper		X		X		X	X
Cupressaceae	*Juniperus osteosperma*	Utah Juniper		X				X	
Cupressaceae	*Juniperus scopulorum*	Rocky Mountain Juniper				X			
Pinaceae	*Pinus ponderosa*	Yellow Pine		X	X	X		X	X
Fagaceae	*Quercus cf. turbinella*	Shrub Live Oak				X			
Fagaceae	*Quercus gambelii*	Gambel Oak		X		X		X	X
Fabaceae	*Robinia neomexicana*	New Mexican Locust			X	X			
Salicaceae	*Salix* sp.	Willow	X						
SHRUBS									
Asteraceae	*Brickellia californica*	California brickelbush				X			
Rhamnaceae	*Ceanothus fendleri*	Buckbrush/ Redroot		X	X				
Fagaceae	*Quercus turbinella*	Shrub Live Oak						X	X
Anacardiaceae	*Rhus ovata*	Sugar Sumac	X						
Rosaceae	*Amelanchier utahensis*	Utah Serviceberry	X						
Rosaceae	*Cercocarpus montanus*	Mountain Mahogany				X			
Rosaceae	*Rosa woodsii*	Wood's Rose	X						
	Unknown Shrub					X			
NATIVE FORBS									
Anacardiaceae	*Rhus radicans*	Poison Ivy	X						
Apiaceae	*Psuedocymopterus montana*	Mountain Parsley							X
Asclepidaceae	*Asclepias* sp.	Milkweed		X					X
Asteraceae	*Achillea millefolium*	Yarrow		X	X				
Asteraceae	*Antennaria marginata*	Pussytoes	X						
Asteraceae	*Antennaria parviflora*	Pussytoes			X	X			
Asteraceae	*Antennaria rosulata*	Rosy Pussytoes		X				X	
Asteraceae	*Artemisia carruthii*	Sagewort		X	X	X		X	X

Family	Species	Common Name	I-17 Corridor	James Canyon	Ritter Mtn.	Douglas Mtn.	Douglas Mtn. Borrow Pit	Rocky Park	Woods Canyon
Asteraceae	*Artemisia ludoviciana*	Sagewort			X				
Asteraceae	*Aster falcatus*	Prairie White Aster		X	X			X	X
Asteraceae	*Cirsium arizonica*	Arizona Thistle	X						
Asteraceae	*Erigeron flagellaris*	Trailing Fleabane		X					X
Asteraceae	*Erigeron neomexicanus*	New Mexican Fleabane	X						
Asteraceae	*Hieracium fendleri*	Hawkweed		X					X
Asteraceae	*Hymenopappus filifolia*	Fineleaf Hymenopappus		X		X			
Asteraceae	*Hymenoxys rusbyi*	Rusbyi's Goldflower						X	X
Asteraceae	*Senecio multilobatus*	Groundsel		X		X		X	X
Asteraceae	*Solidago* sp.	Goldenrod		X	X	X			
Asteraceae	*Unknown Asteraceae*	Sunflower family						X	
Berberidaceae	*Berberis repens*	Oregon Grape	X						
Brassicaceae	*Arabis*sp.	Rock Cress		X				X	
Brassicaceae	*Thlaspi montana*	Alpine Pennycress						X	X
Cactaceae	*Echinocereus*sp.	Hedgehog Cactus				X		X	
Cactaceae	*Mammillaria* sp.	Pincushion Cactus	X						
Cactaceae	*Opuntia* sp.	Prickly Pear				X		X	X
Caryophyllaceae	*Arenaria lanuginosa*	Sandwort		X					
Ericaceae	*Pterospora andromedea*	Woodland Pinedrops	X						
Fabaceae	*Astragalus sp.*	Locoweed		X	X	X		X	X
Fabaceae	*Dalea albiflora*	Prairie clover					X	X	
Fabaceae	*Dalea* sp.	Prairie clover		X					
Fabaceae	*Desmodium* sp.	Tick Clover		X					X
Fabaceae	*Hoffmanseggia* sp.	Hoffmanseggia		X		X		X	X
Fabaceae	*Lotus wrightii*	Deervetch		X	X	X		X	X
Fabaceae	*Lupinus* sp.	Lupine			X		X		X
Fabaceae	*Thermopsis pinetorum*	Goldenbanner	X						
Fabaceae	Unknown Fabaceae	Pea Family							X
Fabaceae	Unknown Fabaceae #2	Pea Family		X					
Fabaceae	*Vicia americana*	American Vetch		X		X			
Geraniaceae	*Geranium caespitosa*	Wild geranium	X						
Iridaceae	*Iris missouriensis*	Rocky Mountain Iris	X						
Lamiaceae	*Monarda pectinata*	Horsemint	X						
Liliaceae	*Allium* sp.	Wild Onion						X	
Liliaceae	*Echeandia flavescens*	Torrey's Craglily							X
Linaceae	*Linum neomexicanum*	Yellow Flax							X

Family	Species	Common Name	I-17 Corridor	James Canyon	Ritter Mtn.	Douglas Mtn.	Douglas Mtn. Borrow Pit	Rocky Park	Woods Canyon
Loasaceae	*Mentzelia pumila*	Desert Blazing Star					X		
Nyctaginaceae	*Mirabilis decipiens*	Four O'Clock	X						
Onagraceae	*Oenothera* sp.	Primrose			X				
Polemoniaceae	*Gilia* sp.	Gilia		X	X			X	X
Polemoniaceae	*Phlox gracilis*	Slender Phlox							X
Polygonacae	*Polygonum douglasii*	Douglas' Knotweed			X			X	X
Polygonaceae	*Eriogonum racemosum*	Redroot Buckwheat			X	X		X	X
Polygonaceae	*Eriogonum umbellatum*	Sulfur Buckwheat						X	
Polypodiaceae	*Pteridium aquilinium*	Bracken Fern	X						
Portulacaceae	*Portulaca oleraca*	Little Hogweed			X				
Ranunculaceae	*Thalitricum fendleri*	Meadowrue	X						
Scrophulariaceae	*Castilleja* sp.	Paintbrush		X	X			X	X
Scrophulariaceae	*Penstemon linarioides*	Toadflax Beardtongue			X	X		X	X
Verbenaceae	*Verbena goodingii*	Vervain			X				
Vitaceae	*Vitus arizonica*	Arizona Grape	X						
NATIVE GRASSES									
Cyperaceae	*Carex geophila*	Sedge		X	X	X			X
Cyperaceae	*Carex* sp.	Sedge						X	X
Cyperaceae	*Cyperus fendlerianus*	Fendler's Flatsedge		X		X			
Cyperaceae	*Eleocharis* sp.	Spike-rush			X				
Poaceae	*Agropyron* sp.	Wheatgrass			X				
Poaceae	*Aristida purpurea*	Purple Three-awn		X				X	
Poaceae	*Bouteloua curtipendula*	Sideoats Grama		X					X
Poaceae	*Bouteloua gracilis*	Blue Grama		X	X	X		X	X
Poaceae	*Bromus ciliatus*	Nodding Brome	X						
Poaceae	*Festuca arizonica*	Arizona Fescue							X
Poaceae	*Hordeum jubatum*	Foxtail Barley			X				
Poaceae	*Muhlenbergia minutissima*	Annual Muhly							X
Poaceae	*Muhlenbergia montana*	Mountain Muhly		X					
Poaceae	*Muhlenbergia wrightii*	Wright's muhly			X			X	X
Poaceae	*Panicum bulbosum*	Bulb Panicgrass		X					
Poaceae	*Poa fendleriana*	Muttongrass		X	X	X		X	X
Poaceae	*Schizachyrium scoparium*	Little Bluestem							X
Poaceae	*Sitanion hystrix*	Squirreltail		X	X	X		X	X
Poaceae	Unknown Poaceae					X			
Poaceae	Unknown Poaceae #2	(Sand Bluestem?)			X				

Family	Species	Common Name	I-17 Corridor	James Canyon	Ritter Mtn.	Douglas Mtn.	Douglas Mtn. Borrow Pit	Rocky Park	Woods Canyon
Poaceae	Unknown Poaceae #3	(Three Awn?)						X	X
Poaceae	Unknown Poaceae #4	(Brome?)		X					
WEEDY NATIVE FORBS									
Amaranthaceae	*Amaranthus sp.*	Pigweed			X		X		
Apocynaceae	*Apocynum androsaefolium*	Spreading Dogbane	X						
Asteraceae	*Bahia dissecta*	Ragleaf Bahia					X		X
Asteraceae	*Cirsium* sp.	Thistle		X					
Asteraceae	*Conyza canadensis*	Canadian Horseweed	X						
Asteraceae	*Conyza schiedeana*	Pineland marshtail	X						
Asteraceae	*Dyssodia papposa*	Dogweed			X				
Asteraceae	*Erigeron divergens*	Spreading fleabane		X	X			X	X
Asteraceae	*Gnaphalium* sp.	Everlasting		X				X	
Asteraceae	*Grindelia aphanactis*	Rayless Gumweed			X				
Asteraceae	*Gutierrezia sarothrae*	Snakeweed			X			X	X
Asteraceae	*Helianthus annua*	Sunflower					X		
Asteraceae	*Heliomeris multiflora*	Showy Goldeneye		X	X	X			X
Asteraceae	*Heterotheca villosa*	Hairy Golden Aster			X				
Asteraceae	*Machaeranthera canescens*	Hoary Aster			X		X		
Chenopodiaceae	*Chenopodium graveolens*	Fetid goosefoot		X					X
Euphorbiaceae	*Euphorbia albomarginata*	Spurge		X	X			X	X
Euphorbiaceae	*Euphorbia dentata*	Toothed Spurge							
Fabaceae	*Trifolium* sp.	Clover	X						
Malvaceae	*Sphaeralcea* sp.	Globemallow	X						
Onagraceae	*Gaura coccinea*	Scarlet Gaura	X						
Onagraceae	*Gayophytum diffusum*	Ground Smoke			X				
Polygonaceae	*Eriogonum pharnaceoides*	Buckwheat		X	X	X	X	X	X
Scrophulariaceae	*Penstemon barbatus*	Scarlet Beardtongue		X		X			
Scrophulariaceae	*Penstemon* sp.	Beardtongue				X		X	X
Solanaceae	*Solanum americanum*	American Nightshade					X		
Solanaceae	*Solanum triflorum*	Cutleaf Nightshade			X		X		
EXOTIC WEED SPECIES									
Asteraceae	*Ambrosia psilostachya*	Ragweed		X	X	X	X	X	X
Asteraceae	*Centaurea diffusa*	Diffuse Knapweed			X		X		
Asteraceae	*Cirsium vulgare*	Bull Thistle					X		
Asteraceae	*Coreopsis tinctorum*	Calliopsis	X						
Asteraceae	*Lactuca serriola*	Prickly Lettuce			X				X

Family	Species	Common Name	I-17 Corridor	James Canyon	Ritter Mtn.	Douglas Mtn.	Douglas Mtn. Borrow Pit	Rocky Park	Woods Canyon
Asteraceae	*Taraxacum officinale*	Dandelion			X			X	X
Chenopodiaceae	*Chenopodium album*	Lamb's Quarters				X	X		
Chenopodiaceae	*Salsola iberica*	Russian Thistle					X		
Convolvulaceae	*Convolvulus arvensis*	Bindweed			X				
Fabaceae	*Medicago lupulina*	Black Medic			X		X		
Fabaceae	*Melilotus albus*	White Sweet Clover			X		X		
Fabaceae	*Melilotus officinalis*	Yellow Sweet Clover			X		X		X
Geraniaceae	*Erodium cicutarium*	Filaree			X				
Lamiaceae	*Marrubium vulgare*	Horehound					X		
Poaceae	*Avena* sp.	Oat	X						
Poaceae	*Bromus tectorum*	Cheatgrass		X	X		X	X	X
Poaceae	*Poa pratensis*	Kentucky Bluegrass			X				
Polygonaceae	*Polygonum aviculare*	Prostrate Knotweed			X		X		
Scrophulariaceae	*Linaria dalmatica*	Dalmatian Toadflax			X	X	X		X
Scrophulariaceae	*Verbascum thapsus*	Mullein		X	X	X	X	X	X

APPENDIX D

Tower Site Evaluation Forms

(to be filled out for all sites, the following is just an example)

TOWER SITE EVALUATION FORM
James Canyon

1. Location (Provide maps if possible):
State: AZ County: Coconino
Latitude/Longitude/GPS Grid: 35-03-06.52N/111-41-08.54W
City and Highway Direction (2 miles W on Hwy 20, etc.) Access is gained using trail which is located just west of Exit 331 (Kelly Canyon Exit)

2. Elevation above mean sea level:

3. Will the equipment be co-located on an existing **FCC licensed** tower or other existing structure (building, billboard, etc.)? (y/n) n
If yes, type of structure:
If yes, no further information is required.

4. If no, provide proposed specifications for new tower:
Height: 170-foot Construction type (lattice, monopole, etc.)
Guy-wired? (y/n) n No., bands: Total No. Wires:
Lighting (Security & Aviation:

If tower will be lighted or guy-wired, complete items 5-19. If not, complete only items 19 and 20.

5. Area of tower footprint in acres or square feet:

6. Length and width of access road in feet:

7. General description of terrain – mountainous, rolling hills, flat to undulating, etc. Photographs on the site and surrounding area are beneficial:

8. Meteorological conditions (incidence of fog, low ceilings, etc.):

9. Soil type(s):

10. Habitat types and land use on and adjacent to the site, by acreage and percentage of total:

11. Dominant vegetative species in each habitat type:

12. Average diameter breast height of dominant tree species in forested areas:

13. Will construction at this site cause fragmentation of a larger block of habitat into two or more smaller blocks? (y/n)_____ If yes, describe:

14. Is evidence of bird roosts or rookeries present? (y/n)_____ If yes, describe:

Distance to nearest wetland area (forested swamp, marsh, riparian, marine, etc.), and coastline if applicable:

Distance to nearest telecommunications tower:

Potential for co-location of antennas on existing towers or other structures:

Have measure been incorporated for minimizing impacts to migratory birds? (y/n)
If yes, describe:

Has an evaluation been made to determine if the proposed facility may affect listed or proposed endangered or threatened species or their habitats as required by FCC regulation at 47 CFR 1.1307(a)(3)? (y/n)
If yes, present findings:

Additional information required: