

# TOWN OF TUSAYAN



at the entrance to Grand Canyon National Park

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Kaibab National Forest  
Supervisor's Office  
800 South 6th Street  
Williams, AZ 86046  
Attn: Forest Supervisor Heather Provencio

September 5, 2019

Supervisor Provencio,

Thank you for taking the time to review the road easement proposal put forth to the Kaibab National Forest by the Town of Tusayan and Stilo Development Group USA. We are excited about the opportunities that this proposal could bring to town residents and the millions of visitors that stop in while visiting the Grand Canyon every year. This proposal has been significantly altered in response to the numerous public comments the previous iteration received. Most notably, this proposal prohibits the use of groundwater for commercial development on the properties that would be accessed by the road. Additionally, the proposal reduces allowed density on these properties by 30% from the previous proposal. We have worked hard to make sure this proposal would result in appropriate development for our community and reduce visitor impacts on Grand Canyon National Park.

While we are glad you are taking the time to review our submission, we wanted to make sure that you know this proposal is still in draft form. There may be significant changes requested by the Forest Service before it is accepted for review, and we would expect numerous changes during the environmental review process. We hope that you participate in the public comments associated with environmental review process when they open. Please email [tusayansfuture@gmail.com](mailto:tusayansfuture@gmail.com) and we will update you as the process moves forward.

Sincerely,  
Town of Tusayan  
Stilo Development Group USA

**Proposal for Special Use Authorization**  
**36 CFR 212.6 and 36 CFR Pt. 251, Subpart B**  
**New Application for Transportation and Utility Systems and Facilities on Federal Lands**  
**September \_\_\_\_, 2019**

**I. Co-applicant Information**

Stilo Development Group USA, LP (Stilo)  
 Authorized Agent: Thomas De Paolo  
 7610 E McDonald Drive, Suite L  
 Scottsdale AZ 85250  
 (480) 991-7930

Town of Tusayan (Town)  
 Authorized Agent: Eric Duthie  
 PO Box 709  
 845 Mustang Drive  
 Tusayan AZ 86023  
 (928) 638-9909

**II. Project Description**

**(a) Type of system or facility;**

The use requested in this application is in support of development of property owned by the applicants and pursuant to the *Pre-Annexation and Development Agreement (PADA) No. 2011-11-02* (Appendix A of this application), as amended by the First Amendment to the *PADA No. 2011-11-02* and the Second Amendment to the *PADA No. 2011-11-02* (Appendix B of this application) between the Town and Stilo.

The applicants propose to make improvements to segments of existing forest roads and construct new segments to provide all weather access and utility service to two in-holdings in the Kaibab National Forest (TenX Ranch and Kotzin Ranch). Both Kotzin Ranch and TenX include land owned by Stilo and the Town. The roadway improvements and utility construction would begin at State Route 64 (SR 64) in the Town. As depicted in **Figure 1**, the project area lies within the Tusayan Ranger District of the Kaibab National Forest, and the proposed corridors cross the areas listed in **Table 1**. TenX Ranch is identified as the Coconino County Assessor's Parcel Number (APN) 502-14-001, and Kotzin Ranch is APN 502-16-006.

<b>Proposed Corridor from SR 64 to:</b>	<b>Sections</b>	<b>Township</b>	<b>Range</b>
Kotzin Ranch (2 alignments)	13, 14, 23, 24	T30N	R2E
TenX Ranch (FR 302)	24 19, 29, 30	T30N T30N	R2E R3E

Township and Range of the Gila and Salt River Baseline and Meridian

The locations of the requested use authorizations are depicted in **Figure 2**. Generally, access and utility service to TenX Ranch requires improvements to the existing Forest Road (FR) 302; the road and utility corridors to Kotzin Ranch would improve segments of existing FR 605M (Long Jim Loop) and FR 605 as well as construction of new road and utility corridor segments. **Table 2** identifies the physical specifications of the requested corridors on a segment-by-segment basis.

## **(b) Related structures and facilities;**

From the requested southern access road and utility corridor to Kotzin Ranch, an approximately 255-foot long corridor along FR 605 is necessary to accommodate a sewer line to the existing collection system facilities of the South Grand Canyon Sanitary District (SGCSD) wastewater treatment plant in the Town, as depicted in **Figure 3B**. In addition, an approximately 300-foot long sewer line corridor is necessary parallel to SR 64 from the intersection of FR 302 to the existing developed boundaries of the Town. This corridor facilitates a second tie-in to the SGCSD wastewater collection system to convey flows from TenX Ranch, and is depicted in **Figure 3A**. The two sewer line corridors are estimated to be 25 feet wide; the specific width and location will be dependent on the capacity, location and depth of the existing wastewater collection facilities. The sewer line corridors would consist of temporary ground disturbance for construction, with the exception of manhole covers that would remain at grade.

A wastewater lift station is anticipated to convey wastewater flows to the SGCSD wastewater treatment plant from TenX Ranch. The lift station would be located adjacent to the access and utility corridor along FR 302. Two booster pump stations, one for reclaimed water and one for potable water, would be located approximately 0.3 mile east of SR 64, adjacent to FR 302. Each station would be approximately 0.2 acre in size, or 100 feet by 100 feet, and would be located adjacent to the access and utility corridor along FR 302. The approximate locations of these stations are depicted in **Figure 3A**.

A wastewater lift station is anticipated on the southern access road and utility corridor to Kotzin Ranch to convey wastewater flows to the SGCSD wastewater treatment plant from Kotzin Ranch. The lift station would be located adjacent to the access and utility corridor at the Kotzin Ranch property line. The lift station would be approximately 0.2 acres in size or 100 feet by 100 feet. The approximate location is shown on **Figure 3B**.

Utilities would be installed per the applicable local standards. As part of the environmental review and engineering design, existing permitted utility easements would be identified and the proposed utility corridors designed to avoid conflicts.

## **(c) Physical specifications;**

The project proposes to improve and construct maintenance level 5 roadway access to the two in-holdings. As defined in Forest Service Handbook (FSH) 7709.58, 12.3), maintenance level 5 is assigned to roads that provide a high degree of user comfort and convenience; these roads are normally double-lane, paved facilities. The roadway and utility improvements are needed to accommodate the Town approved land use plans as defined in the PADA Exhibit B1 *Kotzin Ranch Land Use Plan and Data Table* and Exhibit B2 *TenX Ranch Land Use Plan and Data Table*.

In total, approximately 28,213 linear feet of roadway access and utility corridor (including approximately 255 linear feet of sewer line without roadway access) are requested. The total area of disturbance on USFS land is estimated to be approximately 52.0 acres, of which 17.5 acres (34 percent) has been previously disturbed.

**Table 2** lists each corridor segment, existing and proposed maintenance levels, the existing recreation opportunity spectrum (ROS), the length of the segment (in feet and miles), the area disturbance (including estimates of new and previously disturbed areas), and the utility lines proposed for each segment.

**Figure 4** depicts the cross section of the proposed corridor, conforms to the requirements specified by the PADA and meets applicable local standards. The corridor would accommodate two, paved travel lanes (14 feet wide each), resulting in 28 feet of surfaced roadway, with aggregate shoulders (2 feet wide each) and a 14-foot-wide border area/utility corridor adjacent to each shoulder. The corridor would also accommodate an 8-foot-wide bike/pedestrian path on either side of the paved surface. An additional 4 feet would allow for adjustments to grade. In total, an 80-foot-wide corridor is requested to provide all weather access and utility service to the two privately owned in-holding parcels. Note that

the dimensions specified above and in **Figure 4**, which comprise the overall 80-foot-wide corridor, represent a typical cross section; the engineering design may vary in locations to accommodate topographic and other site-specific constraints.

#### **Corridor to TenX Ranch**

FR 302 would be improved from SR 64 for approximately 2.8 miles, or 14,880 feet, to TenX Ranch. Utilities to be provided within the two, 14-foot-wide border area and utility corridors include a potable water distribution main, a reclaimed water transmission main, a sewer main, a natural gas pipeline, electric, and telecommunications (internet, cable television, telephone, etc.).

#### **Corridor to Kotzin Ranch**

##### ***Southern Access***

The southern access roadway and utility corridor would be 1.4 miles (7,100 feet) long and would traverse lands within the Kaibab National Forest (approximately 0.9 miles; 4,850 feet), connecting the existing SR 64 roundabout at Long Jim Loop to Kotzin Ranch, including the segments listed below. The utilities proposed within the two, 14-foot-wide border area and utility corridors vary slightly by segment, but generally include water transmission and distribution mains, a reclaimed water main, and a sewer main. Dry utilities in the corridor also vary by segment, but generally include a natural gas pipeline, electric lines, and telecommunications. Details of the utility lines included in each segments are listed herein and in **Table 2**.

- The existing FR 605M (Long Jim Loop) would be improved from the SR 64 roundabout west approximately 2,460 feet to the forest boundary. Of the 2,460 feet, approximately 200 feet are on USFS lands and approximately 2,260 feet are on private land road easements administered by the USFS.
  - Utilities proposed in this segment include water transmission and distribution mains, a reclaimed water main, a natural gas pipeline, and telecommunications.
- From the forest boundary, a new roadway and utility corridor would be constructed for approximately 1,080 feet west to the intersection with FR 605, which accommodates the existing Arizona Public Service (APS) easement.
  - Utilities proposed in this segment include water transmission and distribution mains, a reclaimed water main, a natural gas pipeline, and telecommunications.
- The existing FR 605 would be improved for approximately 1,750 feet to the west.
  - Utilities proposed in this segment include water transmission and distribution mains, a reclaimed water main, a sewer force main, a natural gas pipeline, and telecommunications.
  - The sewer main from Kotzin Ranch would leave the utility corridor near the southern boundary of the SGCSO facilities and continue northeast in a corridor for approximately 255 feet to the existing wastewater collection facilities of the SGCSO.
- From FR 605 to Kotzin Ranch, a new roadway would be constructed in a generally northwesterly direction for approximately 1,810 feet to Kotzin Ranch.
  - Utilities proposed in this segment include water transmission and distribution mains, a reclaimed water main, sewer force main, electric lines, a natural gas pipeline, and telecommunications.
  - Electric lines would be in this segment of the corridor, connecting to the existing APS power lines that parallel FR 605.



## **Northern Access**

The northern access roadway and utility corridor would traverse lands within the Kaibab National Forest for approximately 7,930 feet, or 1.5 miles, from the intersection of SR 64 and Moqui Drive (FR 328) west to Kotzin Ranch, including the segments listed below. The utilities within the two, 14-foot-wide border area and utility corridors would include a potable water main and a reclaimed water main. Dry utilities are not anticipated in this corridor.

- FR 328 would be improved approximately 4,070 feet from SR 64 west to FR 605F.
- FR 605F would be improved approximately 1,560 feet west from FR 328 to the intersection with FR 605E.
- FR 605E would be improved for approximately 1,530 west.

A new roadway and utility corridor would be constructed west approximately 770 feet to Kotzin Ranch.

### **(d) Term of years needed;**

All weather access and utility service is requested in perpetuity. Pursuant to the PADA, construction and maintenance funding for the roadway and utilities is the responsibility of Stilo, however, if not completed in a timely manner the Town may fund and construct. Per the PADA, the roads would be maintained to the standards of the Forest Service, which are defined in the *Guidelines for Road Maintenance Levels (2005)*. The utilities would be maintained to the standards of the local utility providers.

### **(e) Time of year of uses or operations;**

All weather access and utility service is requested yearlong.

### **(f) Volume or amount of product to be transported;**

The volume of traffic and sizes of utilities are undetermined at this time. The two-lane roadways are proposed as presented in the PADA (page 4 and Exhibits C1 and C2). Preliminary engineering indicates two-lane roadways would adequately accommodate anticipated density of development.

Utility infrastructure for inholdings for which these roadways will provide legal access across Forest Service lands will be sized based on the anticipated build out of the private parcels. The utility corridors within the roadway section are of sufficient size to support all of the utility infrastructure contemplated for the authorized improvements.

### **(g) Duration and timing of construction;**

Construction would be anticipated to be complete within an approximate 36-month period, considering the potential for inclement weather.

### **(h) Temporary work areas needed;**

No temporary work areas for construction are anticipated within the Kaibab National Forest. All temporary construction areas will be on private lands.

### **(e) State and local government approvals;**

N/A.

### **(f) Application fee;**

To be separately provided.

**(g) Impact on international waterways or boundaries;**

None.

**(h) Technical and financial capability to construct, operate and maintain and terminate system for which authorization is requested;**

The applicants are technically and financially capable of completing the project described in this application. Any construction contractor must be duly licensed, bonded and insured, and would be selected based on a review of bids submitted in response to a solicitation/design package. Criteria to be considered may include factors such as: project understanding, relevant management and technical experience, staff qualifications, capacity to conduct the work, proposed work plan, past performance on similar work and record of completion, quality plan, cost, and health, safety, and environmental record.

Pursuant to the PADA, Stilo will fund construction and maintenance of the road and utilities, however if the project is not completed in a timely manner, the Town may fund construction and maintenance. The ability to fund will be demonstrated based upon the Kaibab National Forest requirements (i.e., financial records, list of completed projects, etc.). The applicants would agree to completion and maintenance bonding, as appropriate.

**(i) Other reasonable alternative routes and modes considered;**

The properties are inholdings, completely surrounded by federal lands administered by the Kaibab National Forest, with no private lands abutting either property. As such, any access to the properties would require use of National Forest System Lands.

During the zoning process Stilo undertook for development of its inholdings, Stilo retained a qualified engineer to evaluate alternatives for access based on routes that met the following criteria: routes that disturbed the least amount of natural conditions; followed existing trails, roadways, primitive routes; utilized existing utility corridors; and otherwise provided safe, proximate and convenient future access for the enjoyment of the property for its intended use. Eight potential routes were identified and are shown in the PADA, Exhibits D1 and D2.

In sum, alternative alignments for the southern roadway access and utility corridor to Kotzin Ranch may be feasible and could be considered during the environmental review and engineering design process. No other alternatives were considered for the roadway access and utility corridor to TenX Ranch or for the northern corridor to Kotzin Ranch due to the presence of existing forest roads, thus minimizing surface disturbance.

**(1) Why not selected?**

The routes proposed for access are the safest and cause the least amount of surface disturbance. Alternative alignments (primarily for the southern roadway access and utility corridor to Kotzin Ranch) may be considered during the environmental review and engineering design process.

**(2) Why necessary to cross federal land?**

Kotzin Ranch and TenX Ranch are in-holdings in the Kaibab National Forest. Both properties are accessible via existing forest roads, however, these roads are subject to closure at the discretion of the District Ranger during wet weather periods. Improved, all-weather access is necessary to ascertain reasonable use and enjoyment of these privately held lands. Per the PADA, both properties would be developed for commercial and residential purposes and year round use requiring all weather access.

**(j) List authorizations and pending applications filed for similar projects;**

The Town and the Kaibab National Forest have entered into a maintenance agreement for that portion of FR 302 from Highway 64 to the TenX property (see attachment). The applicant is unaware of any other authorizations or pending applications for similar projects.

**(k) Statement of need for project, including economic feasibility;**

The need for this project is to improve access to facilitate reasonable use and enjoyment of the in-holding properties in a safe and adequate manner. All-weather access is required to the Kotzin Ranch and TenX Ranch in-holdings in accordance with the PADA. Both properties will be developed for commercial and residential use requiring higher level of services for vehicle access as well as accommodation for the required utilities. The project is economically feasible and would be privately funded.

**(1) Cost of proposal?**

Preliminary construction costs were provided in the Kotzin Ranch Applicant's Narrative Report, Planned Community District Zoning Submittal, Approved November 2, 2011, Exhibit 5, Primary Infrastructure (see Appendix B of this application) and TenX Ranch Applicant's Narrative Report, Planned Community District Zoning Submittal, Approved November 2, 2011, Exhibit 5, Primary Infrastructure (see Appendix C of this application). Revised cost estimates will be provided as the environmental review and engineering design proceed.

**(2) Estimated cost of next best alternative?**

Cost estimates for selected alternatives can be provided as the environmental review and engineering design proceed.

**(3) Expected public benefits**

Expected public benefits include improved access to the in-holdings and the surrounding lands of the Kaibab National Forest. The planned land use for the in-holdings is defined in the PADA, Exhibit B1 Kotzin Ranch Land Use Plan and Data Table and Exhibit B2 TenX Ranch Land Use Plan and Data Table.

**(l) Describe probably effects on population in the area, including social and economic aspects, and the rural lifestyles;**

The in-holdings are surrounded by National Forest System lands administered by the Kaibab National Forest and have no form of access except across National Forest System land. While the proposed access roadways and utility corridors across lands administered by the Kaibab National Forest would not directly result in population growth, the population growth anticipated by the authorized zoning of the in-holdings is a reasonably foreseeable future action that would be considered during the environmental review of this application.

The proposed roadway access and utility corridors would also improve access to lands administered by the Kaibab National Forest with the potential for some increase in utilization of localized areas for recreational purposes. Impacts to rural lifestyles are expected to be localized and minimal in the context of the role of the local community as a gateway to the Grand Canyon National Park. The applicants will work to identify and minimize potential resource conflicts with rural lifestyles with safety in mind.

**(m) Describe likely environmental effects that the proposed project will have on:**

The environmental effects of the proposed project will be analyzed as part of the National Environmental Policy Act process and a brief description of anticipated effects directly related to the proposed action are provided below.

**(1) Air quality**

The proposed project would pave existing gravel and dirt roads within the Tusayan Ranger District, which would reduce sources of fugitive dust in dry weather. There is substantial use of the existing roadways for dispersed camping and an immediate reduction of fugitive dust emissions from this user-group is anticipated with paving of these existing roadways. Additional traffic would be expected to traverse the improved roads, which may increase vehicle emissions.

**(2) Visual impact**

Removal of existing vegetation would be minimized to the extent practical; indigenous plants and trees and/or low-water use plants would be used to revegetate areas of temporary disturbance and in landscaped areas.

**(3) Surface and ground water quality and quantity**

The existing roads are unpaved and therefore subject to erosion during storm events, contributing to sediment generation and transport. The proposed project would pave access roadways, reducing the potential for erosion and sedimentation. Increased runoff generation and the potential for water quality impacts from the impervious roadway surfaces would be managed through engineering controls. Impacts to groundwater would not be anticipated from the roadway access and utility corridors.

**(4) Control of structural change on any stream or other body of water**

The existing FR 302 crosses a tributary to Coconino Wash approximately one half mile east of SR 64. The existing culvert may need to be extended laterally to accommodate the wider roadway. Additional culvert crossings may also be required to accommodate existing drainages and swales. Stormwater conveyance would be maintained, and no control or structural change of any stream or other body of water is anticipated.

**(5) Existing noise levels**

Existing noise on forest roads serving Kotzin Ranch results from occasional vehicles passing through to access lands within the Kaibab National Forest for recreational uses. Existing noise on FR 302 near TenX Ranch also occurs from vehicles accessing lands within the Kaibab National Forest for commercial and non-commercial recreational use; jeep tour operators use FR 302 routinely to access Grandview. FR 302 has a higher operational maintenance level and continues through the Kaibab National Forest, ultimately providing access to Flagstaff. As such, the road has greater existing vehicle volumes than the roads at Kotzin Ranch, with resulting higher noise levels. The proposed roadway and utility corridor may increase noise levels; however, limited receptors exist in the project area.

**(6) Surface of the land, including vegetation, permafrost, soil and soil stability**

Where possible, new disturbance areas are proposed adjacent to existing roadways or other areas of prior disturbance. Impacts to the soil, vegetation, and soil stability would be minimized through the implementation of best management practices, engineering controls, and revegetation as appropriate. No impacts to permafrost would occur.



**(n) Probably effects that the proposed project will have on:**

**(1) Populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species; and**

Direct and indirect effects to plants and wildlife may occur, including lost or degraded habitat and increased vehicle/animal encounters and collisions. A complete analysis of the potential for effects to biological resources will be conducted during the environmental review.

**(2) Marine mammals, including hunting, capturing, collecting or killing these animals.**

The proposed project would not affect marine animals.

**(o) Use of hazardous materials;**

Hazardous materials would not be produced or stored within the proposed corridor or related facilities. While not anticipated, hazardous materials that may be used during construction or transported by others would be in accordance with the Hazardous Materials Transportation Act and other applicable regulations.

**(p) Place of application filing;**

US Department of Agriculture, Forest Service – Kaibab National Forest, Tusayan Ranger District.

**III. Pertinent Background Information and Environmental Protection Measures**

**(a) The PADA**

As stated above, Stilo and the Town of Tusayan are parties to a Pre-Annexation and Development Agreement (PADA) dated November 11, 2011, as amended. The PADA authorizes development of the TenX and Kotzin inholdings at a density and intensity that is described therein. As part of its approval a number of different roadway and utility corridor alignments were evaluated by the Town and Stilo but those that are proposed in conjunction with this application are consistent with those selected for zoning approval. See Figure 5.

In general, the 194.6-acre TenX Ranch is zoned as a Planned Community District (PCD) and was approved under Ordinance No. 2011-11-02-06 on November 2, 2011. Subsequent to the zoning, Stilo donated 20 acres of TenX land to the Town of Tusayan for affordable housing development. The concept for the development of the TenX property is primarily to establish a residential neighborhood for the local population along with supportive facilities serving their needs. The very south end of the property is reserved for a possible resort hotel, conference center hotel, spa hotel or dude ranch.

The 160-acre Kotzin parcel is also zoned as a PCD and was approved under Ordinance No. 2011-11-02-05 also on November 2, 2011. Subsequent to the zoning, Stilo donated 20 acres of the property to the Town of Tusayan for its affordable housing development. The Town has the option to retain the property or exchange it to Stilo for an additional 20 acres at the TenX. The concept for the development of the Kotzin property is primarily to establish a pedestrian oriented, visitor-centered campus of lodging, commercial services, educational facilities and shorter-term residential housing along with supportive facilities serving their needs. Facilities and services will cater to visitors desiring a longer-term stay in the area to connect with a more in-depth appreciation and understanding of the regions natural

sciences and cultural history. Incentives are contemplated to encourage guests to park their vehicles once and not use it again until they are leaving the region. Campus and shuttles are envisioned to transfer guests to and from the GCNP and other needs are met on campus.

#### **IV. Applicant Committed Environmental Protection Measures (EPMs)**

Notwithstanding the density and intensity of development authorized by the PADA for Stilo's inholdings, Stilo is voluntarily willing to agree to the following EPMs to address known public concerns with its proposed development which is an indirect effect of the proposed action.

#### **IV. Applicant Committed Environmental Protection Measures (EPMs)**

Notwithstanding the density and intensity of development authorized by the PADA for Stilo's inholdings, Stilo is voluntarily willing to agree to the following EPMs to address known public concerns with its proposed development which is an indirect effect of the proposed action.

##### **(a) Land Use Restriction**

Upon approval of the application and issuance of the authorizing instrument for road and utility construction, Stilo will agree to a reduction in the Town of Tusayan approved commercial densities in both the Kotzin Ranch and Ten-X properties by a combined total of thirty three percent (33%) as shown in the chart below.

##### **(b) Water Use Restriction**

Stilo is willing to agree to a complete prohibition of the use of groundwater with two exceptions: (i) the current provider of water for the Town of Tusayan, Hydro-Resources Inc., can continue to serve residential uses at TenX and Kotzin; and (ii) future groundwater use being authorized if as a result of technological breakthroughs resulting in proven zero-impact upon groundwater resources (i.e., recharge and recovery, water harvesting, off season water extraction surpluses, etc.).

Stilo proposes enforcement of this restriction be through the recordation of a restrictive covenant that will run with the land in perpetuity and provide a private right of enforcement for the Forest Service. Enclosed at Appendix D, is a sample form of the Declaration of Covenant for Sustainable Water Use which could serve as a model if utilized.

Commercial water demands are anticipated to be met by importing water via truck hauling. Peak season demand for commercial uses at TenX and Kotzin at full-build out are estimated to be approximately 275,000 gallons per day (based on recent commercial water sales data supplied by Hydro-Resources Inc.). Utilizing 6,000 gallon water trucks for hauling, at peak season, full-build out commercial demand equates to approximately 20 truck deliveries per day. Centralized water storage facilities would be constructed in locations deemed appropriate by the water service provider.

## ZONING SUMMARY ANALYSIS

Town of Tusayan Land Use Zoning Approvals  
USFS SF-299 Application - Stilo Proposal

PARCEL	ACRES	APPROVED TUSAYAN ZONING FAR DENSITIES	APPROVED TUSAYAN ZONING DENSITIES SF	PROPOSED DENSITY FAR	PROPOSED SF	PROPOSED TUSAYAN SF REDUCTION	PROPOSED TUSAYAN % REDUCTION	% ROOMS DISTRIBUTION	% COMMERCIAL DISTRIBUTION	PROPOSED ROOMS	PROPOSED COMMERCIAL SF
<b>33% REDUCTION</b>	CNV	5.9	0.25	64,251	0.20	12,850	20%	100%	100%	51,401	51,401
	RC	35	0.35	533,610	0.20	228,690	43%	100%	100%	610	4,835
	SBVP	22.2	0.005	4,835	0.01	0	0%				
	R	130.9									
Residential		OS	10%							610	56,236
Open Space (NTHM Use)			194.1	602,696		241,540	40%				

### TenX

Neighborhood Commercial  
Resort Conference  
RV Park (248 spaces)  
Residential  
Open Space (NTHM Use)

CNV	6.5	0.25	70,785	0.25	0	0%	100%	100%	70,785
CP-1	27.7	0.45	542,975	0.35	130,661	22%	60%	40%	507
CP-2	11	0.15	71,874	0.15	0	0%	100%	100%	71,874
LC	41	0.65	1,160,874	0.40	446,490	38%	75%	25%	1,072
RC	10	0.55	239,580	0.35	87,120	36%	100%	100%	305
R	63.8								
Residential	OS	10%							1,883
Open Space (NTHM Use)		160	2,086,088		1,431,817	68%	31%		

### Kotzin

Neighborhood Commercial  
Cultural Park 1  
Cultural Park 2  
Lodging & Commercial  
Resort Conference  
Residential  
Open Space (NTHM Use)

CNV	6.5	0.25	70,785	0.25	0	0%	100%	100%	70,785
CP-1	27.7	0.45	542,975	0.35	130,661	22%	60%	40%	507
CP-2	11	0.15	71,874	0.15	0	0%	100%	100%	71,874
LC	41	0.65	1,160,874	0.40	446,490	38%	75%	25%	1,072
RC	10	0.55	239,580	0.35	87,120	36%	100%	100%	305
R	63.8								
Residential	OS	10%							1,883
Open Space (NTHM Use)		160	2,086,088		1,431,817	68%	31%		

### Total Kotzin & TenX

ROUNDED

354.1	2,688,785	1,792,973	895,811	33%	2,493	546,417
					2,500	550,000

# TABLES



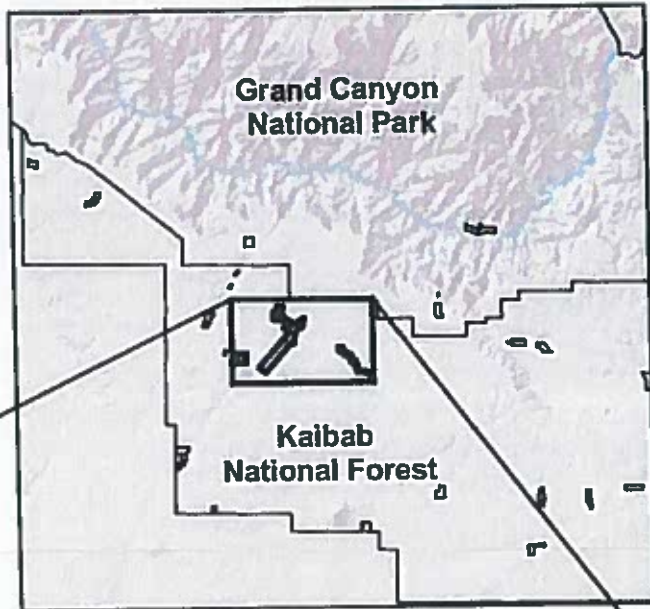
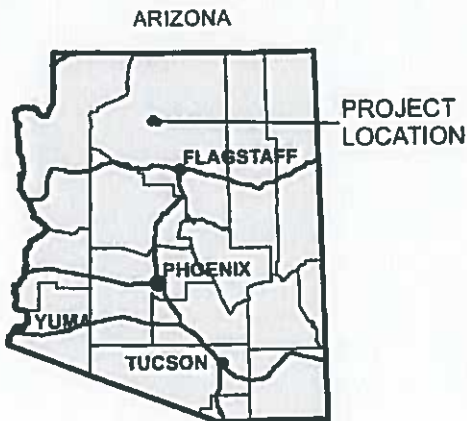
Table 2. Summary of Project Description

	Route/Segment	Existing Maintenance Level	Proposed Maintenance Level	Existing Recreation Opportunity Spectrum	NON-USFS LAND			USFS MANAGED LAND												
					Length (approximate) (feet)	Length (approximate) (mile)	Width (feet)	Length (approximate) (feet)	Length (approximate) (mile)	Width (feet)	Previously Disturbed Area (acre)	Area of New Disturbance (acre)	Total Disturbance Area (acre)	Sewer	Water Transmission	Water Distribution	Reclaimed Water	Electric	Natural Gas	Telecommunications
<b>TenX Ranch Access Road</b>																				
	FR 302	3	5	R/RN				14,880	2.82	80	12.7	14.6	27.3	X	X	X	X	X	X	X
<b>Kotzin Ranch South Access Road</b>																				
	FR 605M	5	5	R			203	0.04	80	0.2	0.2	0.4	X	X	X	X	X	X	X	X
	FR 605M	5	5	R	2,218	0.42	80							X	X	X	X	X	X	X
	New	NA	5	RN	35	0.01	80							X	X	X	X	X	X	X
	New	NA	5	RN				1,081	0.20	80		2.0	2.0	X	X	X	X	X	X	X
	FR 605	2	5	RN				1,753	0.33	80	0.5	2.7	3.2	X	X	X	X	X	X	X
	New	NA	5	R/RN				1,811	0.34	80		3.3	3.3	X	X	X	X	X	X	X
	<b>Subtotal</b>				<b>2,253</b>	<b>0.43</b>	<b>80</b>	<b>4,848</b>	<b>0.92</b>	<b>80</b>	<b>0.7</b>	<b>8.2</b>	<b>8.9</b>							
<b>Kotzin Ranch North Access Road</b>																				
	FR 328	3	5	RN				4,070	0.77	80	1.9	5.5	7.5	X	X	X	X	X	X	X
	FR 605F	2	5	RN				1,560	0.30	80	0.5	2.4	2.9	X	X	X	X	X	X	X
	FR 605E	2	5	RN				1,530	0.29	80	0.4	2.4	2.8	X	X	X	X	X	X	X
	New	-	5	RN				770	0.15	80	0.0	1.4	1.4	X	X	X	X	X	X	X
	<b>Subtotal</b>							<b>7,930</b>	<b>1.50</b>	<b>80</b>	<b>2.8</b>	<b>11.7</b>	<b>14.6</b>							
<b>Related Structures and Facilities</b>																				
	FR 605							255	0.05	25	0.1		0.1	X	X	X	X	X	X	X
	SR 64							300	0.06	25	0.2		0.2	X	X	X	X	X	X	X
	FR 302										0.2		0.2							
	Kotzin										0.2		0.2	X	X	X	X	X	X	X
	FR 302										0.2		0.2	X	X	X	X	X	X	X
	FR 302										0.2		0.2	X	X	X	X	X	X	X
	FR 302										0.2		0.2	X	X	X	X	X	X	X
	<b>Subtotal</b>							<b>555</b>	<b>0.11</b>		<b>1.2</b>	<b>1.2</b>	<b>1.2</b>							
	<b>Total</b>							<b>28,213</b>	<b>5.34</b>		<b>17.5</b>	<b>34.5</b>	<b>52.0</b>							

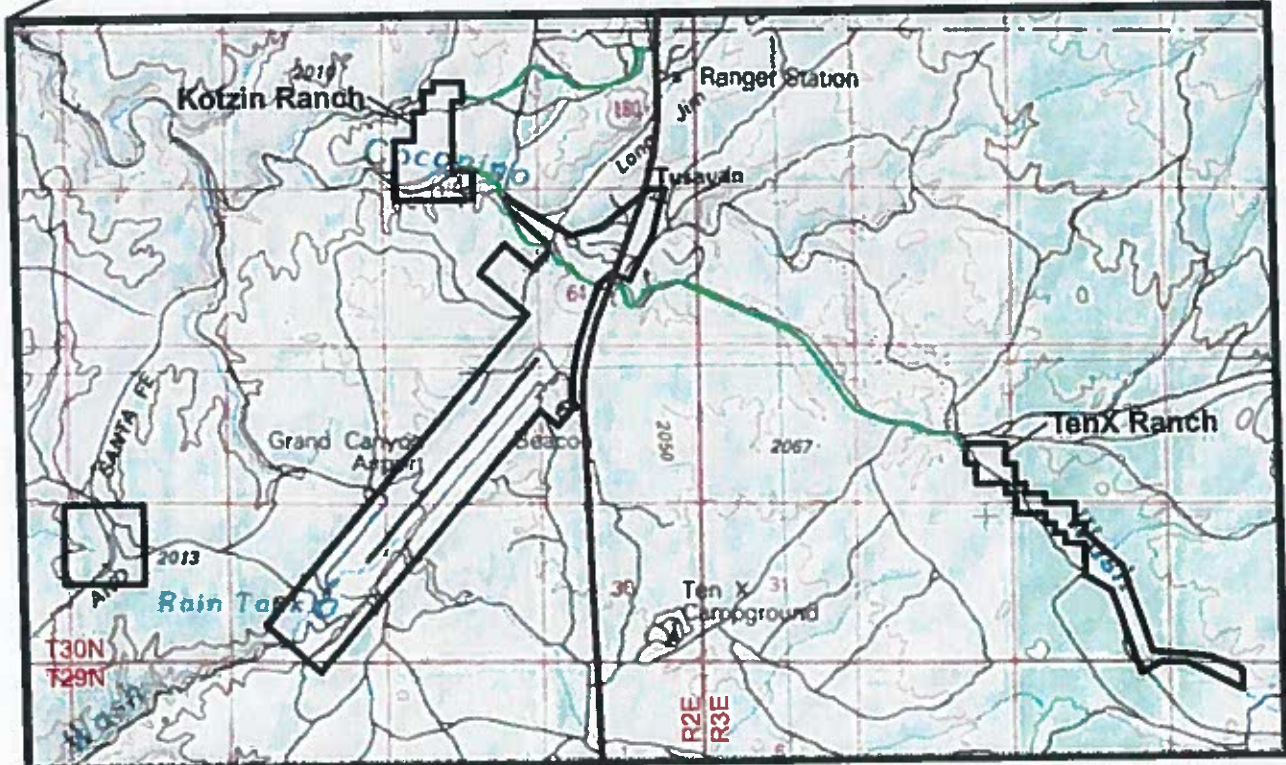
Recreation Opportunity Spectrum (ROS): R = Rural; RN = Roded Natural

# FIGURES

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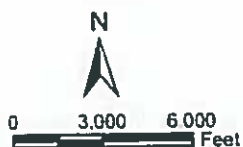


Approximate Scale 1 Inch = 10 Miles



T30N, R2E, Portion of Sections 13, 14, 23, 24.  
 T30N, R3E, Portion of Sections 19, 29, 30.  
 Coconino County, Arizona.  
 Tusayan East & Tusayan West USGS 7.5' Quadrangles

**Town of Tusayan**  
*the entrance to Grand Canyon National Park*



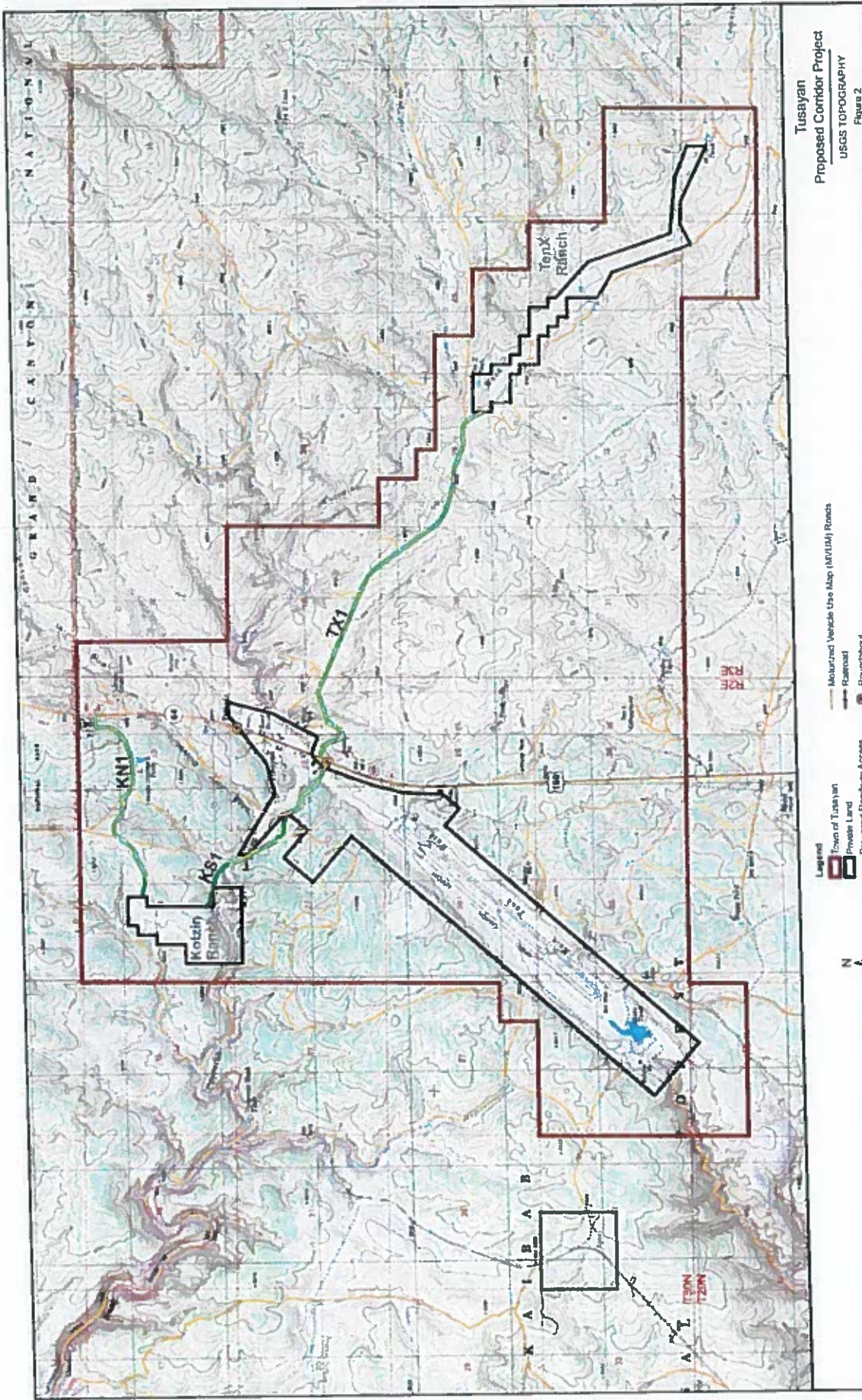
**Legend**

-  Project Area
-  Private Land

**TUSAYAN**  
 Proposed Corridor Project

VICINITY MAP  
 Figure 1





Tusayan  
 Proposed Corridor Project  
 USGS TOPOGRAPHY  
 Figure 2





**Tusayan**  
**Proposed Corridor Project**  
 Figure 3A

- Proposed Potable Water Booster Pump Station
- Proposed Lift Station
- Proposed Reclaimed Water Booster Pump Station

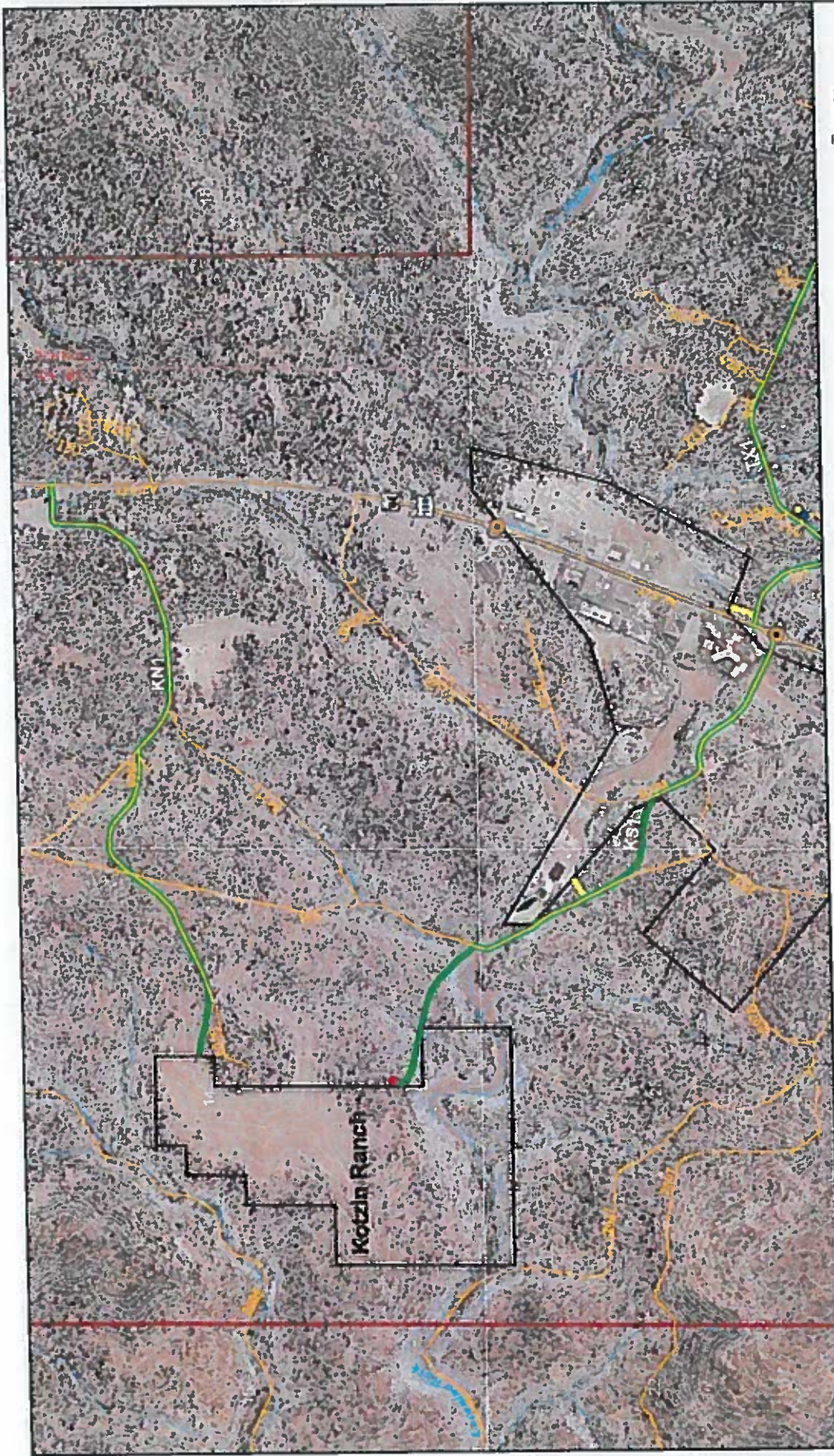
- Proposed Sewer Line
- Motorized Vehicle Use Map (M/VUM) Roads
- Drainage
- Roundabout

- Town of Tusayan
- Private Land
- Proposed Roadway Access and Utility Corridor



**Town of Tusayan**  
 Prepared by: David Crystal, Natural Resources



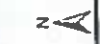


Tusayan  
Proposed Corridor Project  
Figure 36

- Roundabout
- Proposed Possible Water Booster Pump Station
- Proposed Lift Station
- Proposed Reclaimed Water Booster Pump Station

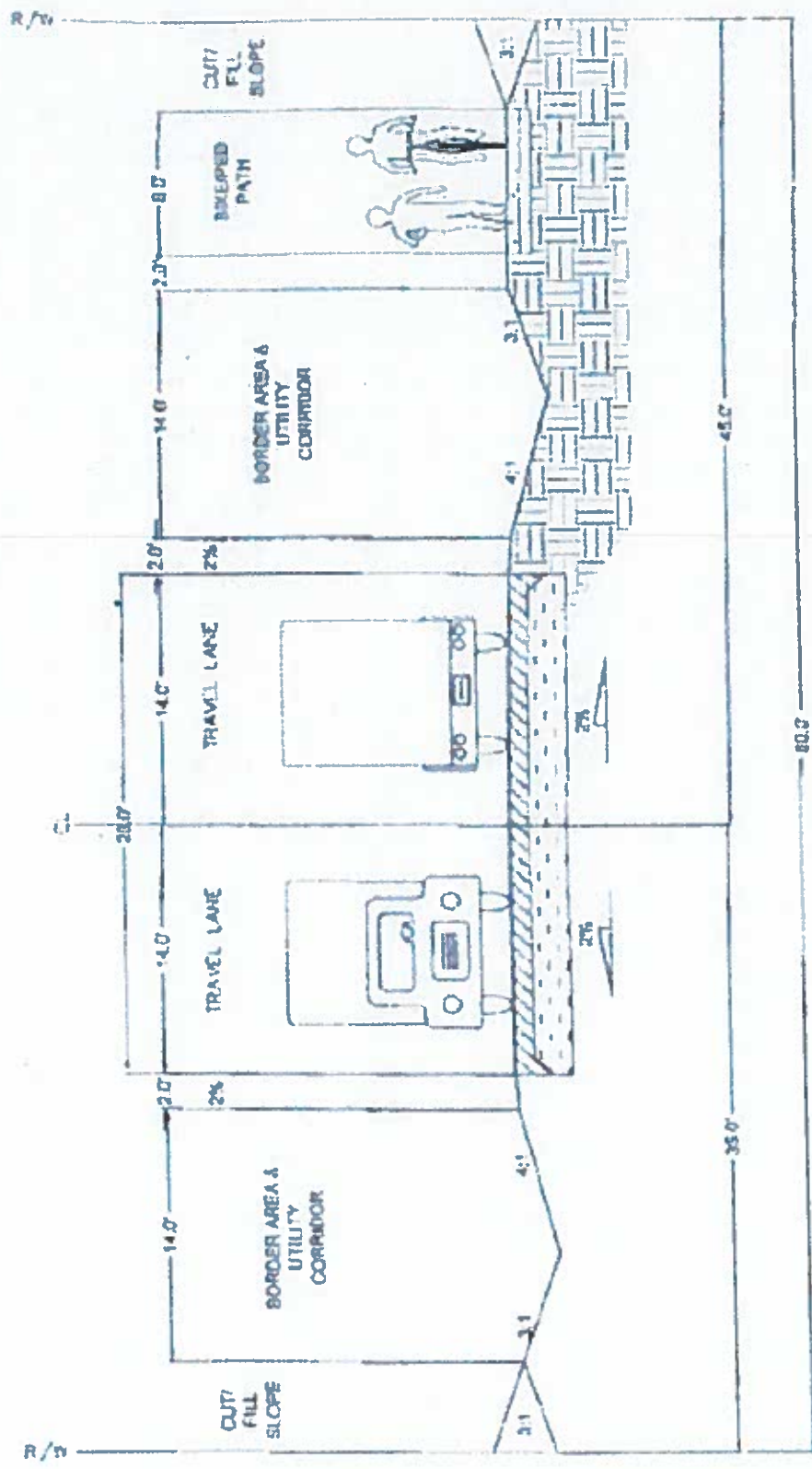
- Motorized Vehicle Use Map (MUDM) Roads
- Drainage
- Proposed Sewer Line

- Bound of Tusayan
- Private Land
- Proposed Roadway Access and Utility Corridor



Town of Tusayan  
© 2014 City of Tusayan

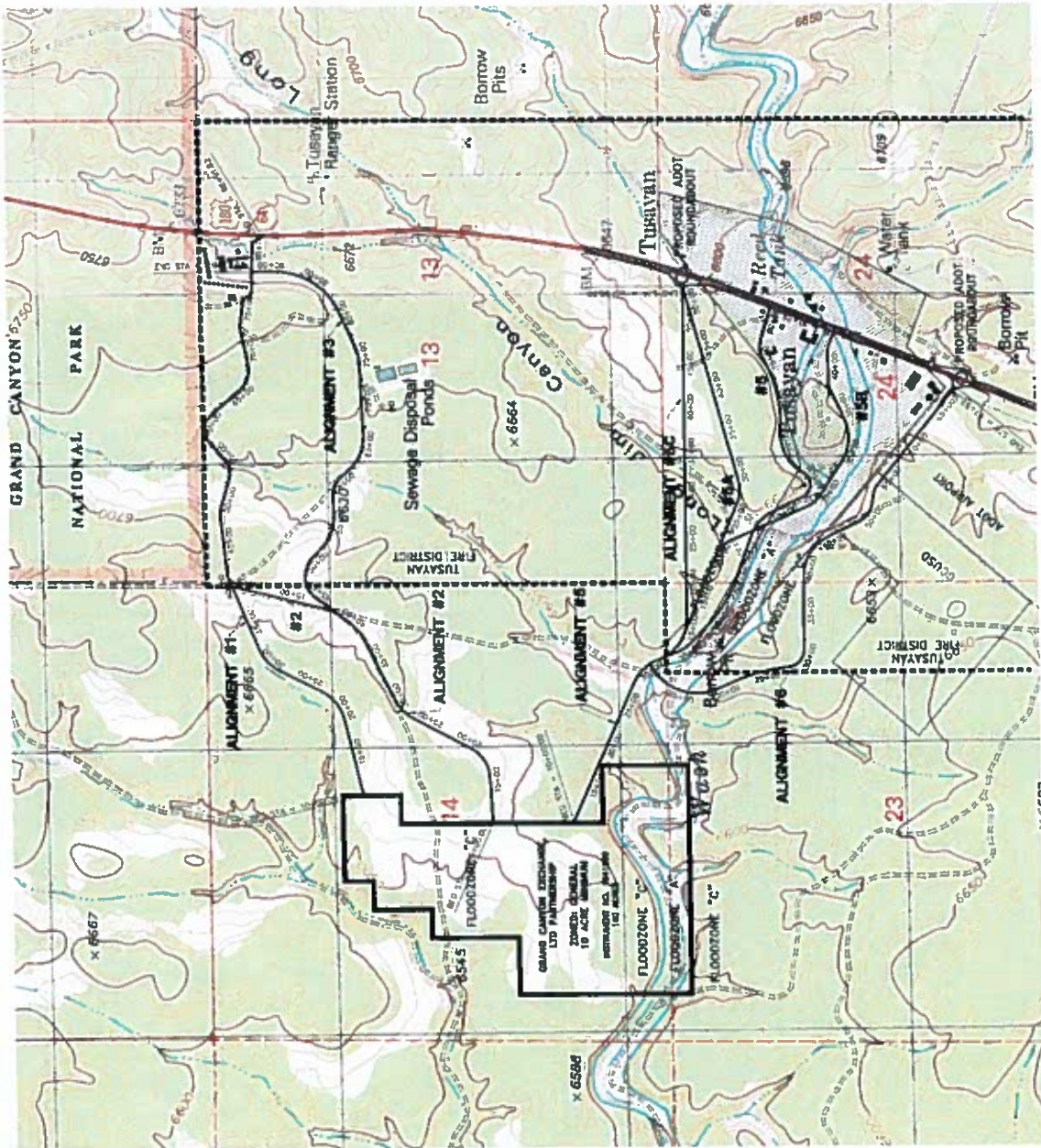




**Figure 4: Access roadway and utility corridor typical section**

# KOTZIN

PORTION OF SECTIONS 14 AND 23 TOWNSHIP 30 NORTH, RANGE 2 EAST,  
GILA AND SALT RIVER MERIDIAN,  
TUSAYAN, COCONINO COUNTY, ARIZONA



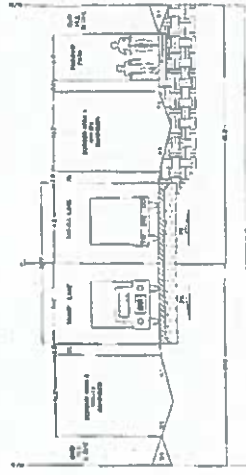
**NOTE:**  
BOUNDARY LINES AND ALLEGES ARE BASED  
ON COUNTY INFORMATION AND  
USGS TOPOGRAPHIC MAPS.  
THEY ARE NOT BASED ON A FIELD SURVEY.

- LEGEND**
- PROPOSED SEWER ALIGNMENT
  - EXISTING SEWER ALIGNMENT
  - PROPOSED FLOOD ZONE
  - EXISTING FLOOD ZONE
  - PROPERTY BOUNDARY
  - ROAD CENTERLINE
  - RAILROAD CENTERLINE
  - UTILITY CENTERLINE
  - WATERWAY CENTERLINE
  - WATERWAY FLOOD ZONE

### FLOOD ZONE NOTE

A PORTION OF THE FLOOD ZONE INFORMATION IS  
BASED ON THE FLOOD ZONE INFORMATION FROM THE  
FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)  
FLOOD INSURANCE RATE MAP (FIRM) FOR THE  
AREA. THE FLOOD ZONE INFORMATION IS NOT  
BASED ON A FIELD SURVEY.

THESE FLOOD ZONES ARE BASED ON THE  
FLOOD ZONE INFORMATION FROM THE  
FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)  
FLOOD INSURANCE RATE MAP (FIRM) FOR THE  
AREA. THE FLOOD ZONE INFORMATION IS NOT  
BASED ON A FIELD SURVEY.



COCONINO COUNTY ROAD STANDARDS  
Minor Collector Road with No Curb and Gutter and  
Separate Bike/Ped Path



10/19/09

108054

KOTZIN

BASE MAP

WOODSON ENGINEERING AND SURVEYING INC.

174 W. GLEN ST., FLAGSTAFF, AZ 86001 • PHONE: (928) 774-4958 FAX: (928) 774-4949

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