



## I. INTRODUCTION

### A. Background

The project is located in the Rio Bonito Acquired Lands on Tract three on the north side of the Town of Lincoln, an un-incorporated town in Lincoln County. The legal description of this project is Township 9 South., Range 16 East., Section 29 N ½ SE ¼.

Trails are a way of conveyance for the hikers, bicyclist, equestrian and other non-motorized vehicle users to enjoy the Rio Bonito Acquired Lands (RBAL). Through the RBAL Final Activity Plan of 2004 the planning process trails were discussed and agreed upon by the participating public. A ¾ mile loop trail system has been proposed in the Final RBAL Final Activity Plan. The trail system will start at the BLM parking lot across from historic Lincoln County Courthouse and traverse the landscape to the Tunstall Museum and continue on to the parking lot of the newly acquired Lincoln State Monument Museum and visitor center, formerly Hubbard Museum of the American West Museum. This trail will loop back to the BLM parking lot (see maps in appendix). The trail will cross the Rio Bonito at three places and require small foot bridges with railings along the way (see appendix's 1,2,3.)

### B. Purpose And Need For The Proposed Action

There is a need to move the public away from U.S. Highway 380 and provide a walking trail in a natural environment where they can enjoy the natural surroundings of the village of Lincoln. Interpretive panels and signs would be placed along the trail explaining the history of natural plants as well as geology of the Lincoln Valley. For the most part the trail will be accessible to all people of all abilities to negotiate the trail system. The trail leading from the Tunstall Museum down the steep embankment to the main loop trail may not be accessible to all public because of the steepness of the escarpment leading from the Tunstall to main trail. Restrooms of the newly acquired museum and historic courthouse will provide sanitary facilities for the general public who use this trail system.

### C. Conformance with Land Use Planning

The Proposed action is consistent with Bureau Policy and guidance as well as actions analyzed in the Roswell Approved Resource Management Plan and Record of Decision of October 1997(RMP) and Through the RBAL Final Activity Plan of 2004.

## D. Relationship to Statutes, Regulations, or Other Plans

Other pertinent statutes affecting the proposed action include:

Federal Land Policy and Management Act (FLPMA) of October 21, 1976, as amended;  
National Historic Preservation Act of 1966 (36 CFR 800);  
Clean Air Act (CAA) as amended (42 U.S.C. 7401);  
Safe Drinking Water Act (SDWA), as amended (42 U.S.C. 300f);  
Clean Water Act (CWA) of 1977 (33 U.S.C)1251;  
Resource Conservation and Recovery Act (RCRA) of 1976, as amended (42 U.S.C. 6901);

## II. PROPOSED ACTION AND ALTERNATIVES

### A. Description of the Proposed Action

Trails can be an integral part of each tract within the RBAL. Developed trails will be clearly marked with uniform signing. Signing will conform to the Lincoln Historic Preservation Ordinance as amended. Trail brochures will be developed and placed at trailheads, various museums and public places in the town of Lincoln. Developed trails will be maintained to the U.S. Forest Service standards. Developed trails will have a tread width of 36 inches for one way trails and a 60-inch width to allow people to pass on two way trails. At a later date interpretive panels will be placed along the trail to interpret the geology, history and Cultural Resources of the area.

Trails will be designed to blend with the environment and will follow the contour of the land. Erosion control will be accomplished by constructing trails along the contour of the land and making use of water bars where needed. The trails would be designed to dump water off the outside edge of the trail to lessen erosion along the tread area. Walking trails will have a tread width of 36 inches for one way trails and 60 inches for two way trails. Youth Conservation Corps (YCC) students, YCC leaders and other groups will be used to construct the trails with guidance, planning and oversight by the Bureau of Land Management Roswell Field Office and oversight by employees of the Lincoln State Monument. Donation of tools and lumber will be accepted from various individuals, groups and organizations to offset the construction cost of this project.

The proposed trail connecting with the Tunstall Store, the former Anderson Freeman Visitor Center and Museum, and the field across from the Billy the Kid Pageant Ground will be designated for hiking only. All facilities except for the short trail leading to the Tunstall Museum would be constructed to accessible standards under the American with Disabilities Act (ADA) of 1990 as amended. The National Center for Accessibility (NCA) guidelines will be the standard for construction of accessible facilities.

Three river crossings will be used to cross the Rio Bonito; one just below the Anderson Freeman Museum, one below the State Monument foot bridge close to the Tunstall Museum and one just below the road (next to the diversion) that crosses the Rio Bonito, (see attached map). The river crossings could either be a small foot bridge 60 inches wide or a three sided culvert constructed of concrete or plate steel (see appendix 1,2,3).

## **B. Alternatives To The Proposed Action**

**Alternative 1 :** Construct the trail as proposed in the environmental assessment.

**Alternative 2:** Move the trail to another location

**Alternative 3 (No Action Alternative):**

The No Action alternative would be to not allow the trail to be constructed.

## **III. DESCRIPTION OF THE AFFECTED ENVIRONMENT**

### **A. General Setting**

The general setting would be the upper and lower benches of Tract Three of the Rio Bonito Acquired Lands (see attached map). Some of the trail sections will be located in the flood zone of the Rio Bonito and occasionally will be covered over by flood events. All natural materials will be used to prevent unwanted materials within this area. Three small foot bridges will set on small neutral color coated concrete landings and be attached to a steel cable dead men concreted into the ground. If a flood event occurs the wood bridges will float off the concrete landings and would have to be reset in place by mechanical means (See Appendix 4.) An alternative to the bridges would be a three-sided steel or concrete culvert set on and bolted to a concrete footing (see appendix 5). Trail surfaces would be 60 inches wide on the two way sections and 36 inches wide on one way trail sections. The trail surface will be covered with gravel to create an all weather surface for people to walk on.

### **B. Affected Resources/Critical Elements**

The following critical elements have been evaluated and are either not present or are not affected by the Proposed Action or the alternative in this assessment: Farmland - Prime or Unique, Native American Religious Concerns, Wastes-Hazardous or Solid, Wild and Scenic Rivers, Wilderness, Threatened and Endangered Species, Low income or Minority populations or communities will not be affected by the proposed action.

**1. Geology**

Large-scale disharmonic folds occur within sediments of the middle Permian Yeso Formation near Lincoln. These flexural-slip and flexural-flow folds contrast with the near homoclinal attitude of the conformable, overlying San Andres Formation. Folded sediments of the Yeso Formation of Leonardian (middle Permian) age are exposed in low-lying hills north of Lincoln. The folded Yeso units are overlain by the flat-lying San Andres Formation. This distorted folded geologic formation are called the Lincoln folds. The Lincoln folds are exposed for about 7 miles in the bluffs north of the river. Theories of fold origin include soft-sediment deformation, doming with gravitational gliding and mass slumping. The Lincoln folds may be interpreted by signage at a later date along the trail.

**2. Soil**

Soil types present within the trail sites are: Gabaldon-Riverwash association, Hightower Variant sandy loam, Hightower-Oro Grande complex and Deama-Pastura Association

**3. Topography**

The topography of the area is the river bottom land and the intermediate bench land adjacent to the River.

**4. Water Quality/Drinking Ground**

The Rio Bonito is a perennial river located in the project area. Fresh groundwater sources are in the Quaternary Alluvium, Yeso Formation, and the San Andres Formation. Depth to fresh groundwater in the area ranges from 10 to 30 feet in Quaternary Alluvium, Yeso Formation, and the San Andres Formation (New Mexico State Engineer Office data).

**Climate:**

Temperatures vary from an average of 90 degrees F in the summer to 20 degrees F in the winter months. Precipitation averages 16.1 inches annually. The area is considered semi arid as the evaporation exceeds the precipitation.

**5. Wildlife**

Wildlife species inhabiting the area include mule deer, elk, coyote, rabbit, raccoon, skunk, bobcat, badger, occasional cougars, bears, and various small rodents and reptiles. Common bird species observed includes raptors, killdeer, mallard, bufflehead, mourning dove, scaled quail, and sparrows. Additionally, some salmonids and cyprinids inhabit the perennial sections of the river.

**6. Wilderness**

There is no designated wilderness or Wilderness study areas within the area.

**7. Livestock**

Livestock are used as a tool in tract three to utilize the forage within this area on

**8. Recreation.**

The proposed trails within the area will add to the visitor enjoyment. The trail system will also allow visitors to exit the main roads within the area and enjoy some of the undeveloped BLM land within the area. Interpretive panels would be placed along the trail to interpret the geologic, history and cultural resources of the area.

**9. Vegetation.**

Minimal Vegetation will be lost within the whole area. A swath of approximately 50 inches wide and  $\frac{3}{4}$  miles long will be denuded of vegetation. Gravel or chipped wood will be used as the trail base. Vegetation will be allowed to come up through the trail and will be clipped occasionally with a string trimmer. Disturbed areas will be reseeded with a seed mixture of blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Western Wheatgrass (*Agropyron smithii*), little bluestem (*Schizachyrium scoparium*), and Indian blanketflower (*Gaillardia aristata*).

**10. Karst.**

No cave or karst has been found within the proposed area.

**11. Nonnative/Invasive Species.**

Two species of noxious weeds are known to occur within five miles of the proposed area. They are musk thistle (*Carduus nutans*) and dalmatian toadflax (*Linaria genistifolia ssp. dalmatica*). Other known noxious weeds in the area are teasel (*Dipsacus fullonum*) and poison hemlock (*Conium maculatum* L.). Musk thistle is spread by seed and is a biennial. It spreads rapidly, forming extremely dense stands which crowd out desirable forage vegetation. Dalmatian toadflax is a perennial spreading by seed and underground root stalks. It is aggressive and crowds out other desirable native vegetation. An extensive and deep root system along with a waxy leaf makes this plant difficult to control. An approved herbicide will be used to spot kill weeds within and the area if necessary. Herbicides will be applied as per the restrictions or specifications outlined in appendix 9, Treating vegetation with herbicides, Roswell RMP1997. Mechanical means such as hand tools could be used to lessen unwanted noxious/invasive species of plants within this area.

**12. Threatened and Endangered Species.**

The area has been previously inventoried and no T&E Species have been found.

**13. Cultural Resources.**

The area of disturbance was inventoried for cultural resources. No significant cultural resources are present in the area of effect.

**15. Wetlands/Riparian Zone.**

The trail system will cross the Rio Bonito at three places with small foot bridges. The foot bridges will be placed on a concrete footing to allow float off the footings if there is a high water event. Each bridge will be attached to a 3/8 inch steel cable that will allow the bridge to float off the footings and be set in place by mechanical means after the flood event is over. As an alternative to a bridge a three-sided culvert may be used as a river. The culvert will be made of either concrete or steel. The bottom of the culvert will be the stream bottom and it will be supported by concrete footings (see attachment)

**16. Floodplains**

Portions of the trails are located in the 100-year floodplain. For administrative purposes, the 100-year floodplain serves as the basis for floodplain management on public land. It is based on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (1983). Current development on the floodplain in the area consists of irrigation ditches, irrigation pipelines, two-track roads and fencing.

**17. Air Quality**

Air quality in the region is generally good. The area is in a Class II area for the Prevention of Significant Deterioration of air quality as defined in the public Clean Air Act. Class II areas allow a moderate amount of air quality degradation.

## IV ENVIRONMENTAL IMPACTS

### A. Impacts Of The Proposed Action

Following are critical elements and other resources that may be impacted by the Proposed Action:

#### Critical Elements

1. Cultural Resources.  
The proposed action area will be surveyed using the class three method of cultural survey. If cultural resources are found during the excavation of the trail the construction will stop immediately and the proponent will contact the BLM Roswell Field Office Archaeologist.
2. Threatened and Endangered Species.  
The area has been previously inventoried and no T&E Species have been found.
3. Water Quality/Drinking Ground.  
Direct impacts to surface water quality would be minor, short-term impacts may occur during stormflow events from increased siltation to the Rio Bonito River.

Indirect impacts to water-quality related resources, such as fisheries, would not occur. The proposed action would not have a significant effect on ground water. The construction and installation of the bridges and or culvert crossings in the Rio Bonito River will require an application for a 404 permit to the United States Corp of Engineers. The application for the 404 permit to the Corp of Engineers will be made prior to construction and installation of the proposed bridges and or culvert crossings.

4. Recreation. The proposed action will allow the visitor to enter Tract Three of the acquired land in a controlled way. The trail will provide an avenue to move through this part of the area and discourage people from wandering aimlessly into private land adjacent to this tract. The trail system would also provide interpretive panels so the visitor can learn about the natural history, cultural history, as well as geology of the area. Small brown fiberglass markers will be installed on fences surrounding the area to indicate the boundary of private lands. Small decals on the fiberglass marker will state that beyond this fence is private land to alleviate trespass on to private within the area.
5. Floodplains The floodplain may be affected or impacted by new soil disturbances and loss of vegetation. The impact from new soil disturbances and loss of vegetation from the construction and maintenance of trails is minimal.
6. Air Quality  
Dust levels under the proposed action would be slightly higher than under the no trail alternative due to trail construction and management activities. The levels would be within the limits allowed in a Class II area for the Prevention of Significant Deterioration of air quality.

## **OTHER KNOWN RESOURCES**

1. Karst  
No cave or karst features are known to exist within the proposed area. The area is in a potential Medium Cave/karst area, although no cave features have been found in this area.
2. Soil  
The construction of the trails would physically disturb the topsoil. The exposed soil would be susceptible to wind and water erosion.

Additional soil impacts associated with the trails would occur when heavy precipitation or flooding causes water erosion damage. Trail construction requirements and trail maintenance would alleviate potential impacts to the soils from water erosion damage.

3. Vegetation



A swath 50 inches wide and  $\frac{3}{4}$  miles long will be denuded of vegetation and crushed gravel or wood chips will be spread over the trail system as a trails base. Vegetation will be allowed to grow up into the gravel or wood chip base and will be mowed occasionally with a string trimmer. The top soil around the disturbed area will not be affected. Some vegetation will be crushed or obliterated by the action of the equipment moving the gravel or wood chips into the area. The vegetation should re-grow within one year's growing season.

4. Noxious and Invasive Species  
There should be minimal noxious and invasive spread by foot traffic using the trail system.

## **B. IMPACTS OF ALTERNATIVES**

### **Relocate the Proposed Action**

Relocating the trail facilities to another part of the area would be considered. However the proposed location for the trail system has been identified in the Rio Bonito Acquired Lands Final Activity Plan of December 2004 for this location. Relocation of the proposed trail system would be counter productive to the final plan.

### **No Action Alternative**

This alternative denies the Proposed Action. This alternative will result in no new environmental impacts. However, a No Action alternative may reduce BLM's recreation management efforts within tract three. Further, the Proposed Action will add to recreation potential of the Lincoln area.

## **C. MITIGATION MEASURES**

The surface disturbance at the stream crossing and next to the proposed trail area will be minimal and should naturally reclaim within one years' growing season. Disturbed areas will be reseeded with a seed mixture of blue grama, sideoats grama, Western wheatgrass, little bluestem, and Indian blanketflower.

## **CRITICAL ELEMENTS**

### **CULTURAL RESOURCES**

To prevent possible negative impacts, or loss of cultural resources the area will be surveyed prior to any trail work. The YCC staff and students will be briefed on what is a cultural resource and will be asked to report any cultural effects to the BLM as soon as they find them. In the event that cultural resources are discovered during the

Environmental Assessment NM-510-2006-0119 Rio Bonito Tract 3 trail system excavation, the Bureau of Land Management Roswell Field Office archaeologist will be notified immediately.

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#### **D. RESIDUAL IMPACTS**

There will be little or no residual impacts from the Proposed Action.

#### **E. CUMULATIVE IMPACTS**

Population increases and recreational demand for hiking and walking trails are considered the primary multipliers of cumulative resource use effects for the future. There will be positive effects resulting from providing hiking trails for people to enjoy the beauty of nature and gain some exercise for a better life style. Increase in regional metropolitan populations and collateral recreation demands may also impact Lincoln's natural, cultural, and recreational resources. Other southwest recreational sites, areas, parks and facilities have experienced a general increase in resource use within the past fifteen years. The trend is expected to continue as the public becomes more aware of the value of public land to the nation.

#### **V. CONSULTATION AND COORDINATION**

##### **PERSONS CONSULTED**

Ernest Jaquez, Wildlife Biologist  
Joseph M. Navarro, Rangeland Management Specialist  
Howard Parman, Planning Coordinator  
Irene Gonzales, Realty Specialist  
Al Collar, Geologist  
Michael McGee, Hydrologist  
Pat Flanary, Archaeologist  
Paul Happel, Natural Resource Specialist/ Acting Outdoor Recreation Planner  
Helen Miller, Range Mgt. Specialist /noxious weeds  
Jerry Dutchover, Geologist  
Pat Flanary, Archaeologist  
Richard Hill, Environmental Protection Specialist  
Tim Kreager, Assistant Field Manager, Resources  
Dee Ann Kessler, Lincoln State Monuments

**VI. DECISION RECORD/FINDING OF NO SIGNIFICANT IMPACT  
DECISION DOCUMENT EA# NM-060-2001-0079**

I recommend that the Proposed Action, be approved as proposed. I have determined that the Proposed Action, with the mitigation measures described in this EA, will not have any significant impacts on the natural and human environment and that an environmental impact statement is not required.

Authority of this action is the National Environmental Policy Act of 1969 (42 U.S.C. 4321, es seq.), as amended.

**RATIONALE FOR DECISION**

The Proposed Acton would not result in any undue or unnecessary environmental degradation. The placement of a trail system will allow the visitor to enjoy the natural surroundings learn about the geology, cultural resources and the history of the area. The proposal is consistent with the Roswell Field Office Resource Management Plan of 1997 and the Rio Bontio Acquired Lands Final Activity Plan of December 2004.

The Proposal was presented to the Lincoln Historic Board on May 18,2006. Because the proposal is within the Lincoln Historic District the board members recommended and approved the trail system. The three Bridges as designed in the Environmental Assessment were recommended by the Historic Board instead of the culverts for the river crossings be.

/s/T. R. Kreager

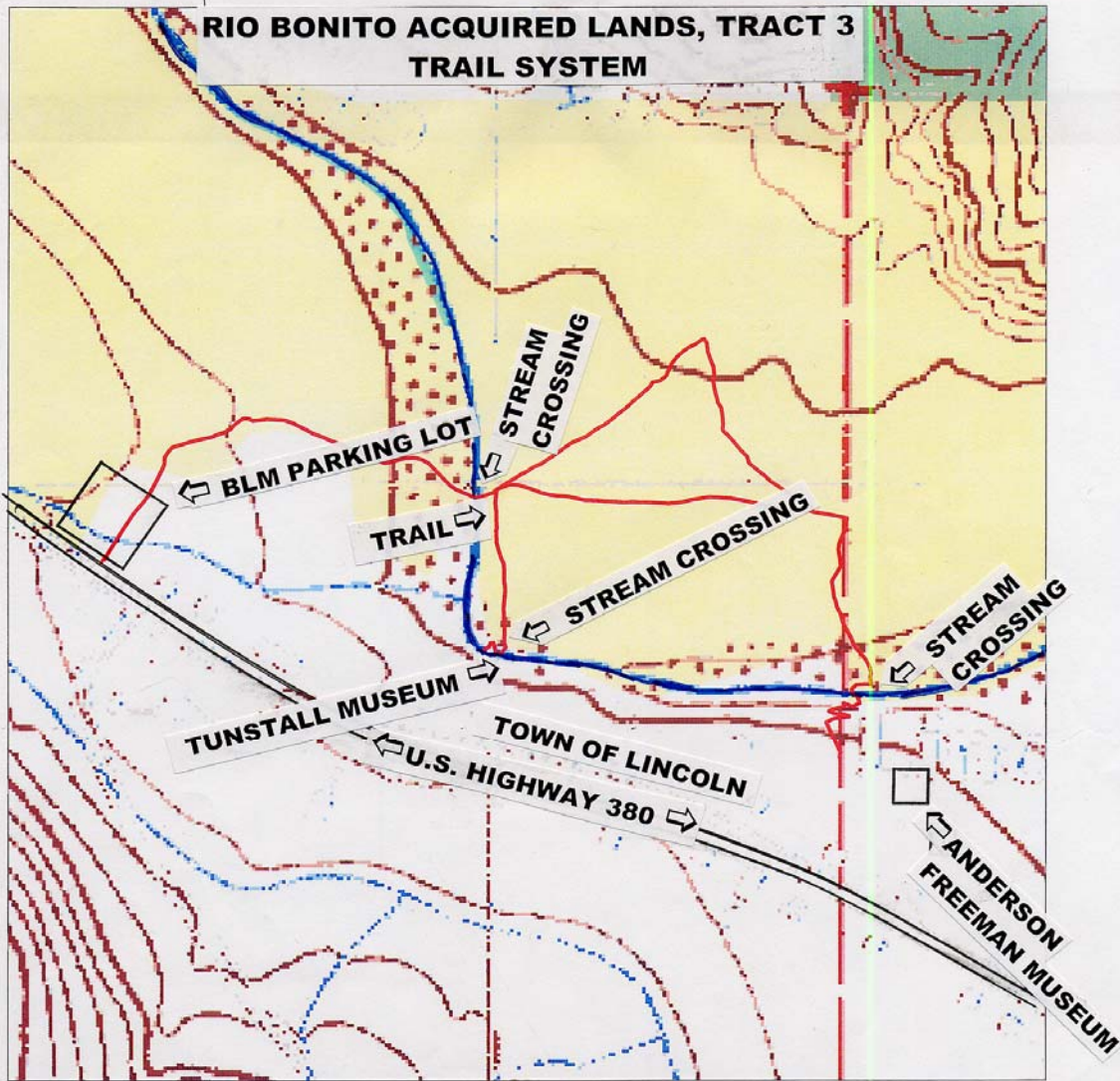
6/1/06

\_\_\_\_\_  
**Timothy R. Kreager**  
**Assistant Field Manager Resources**

\_\_\_\_\_  
**Date**

Rio Bonito Parcel 3 Trails

APPENDIX 1:  
New Mexico



1:4205

T. 9S., R.16E., SECTION 29

LOCATION MAP



No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM.

Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

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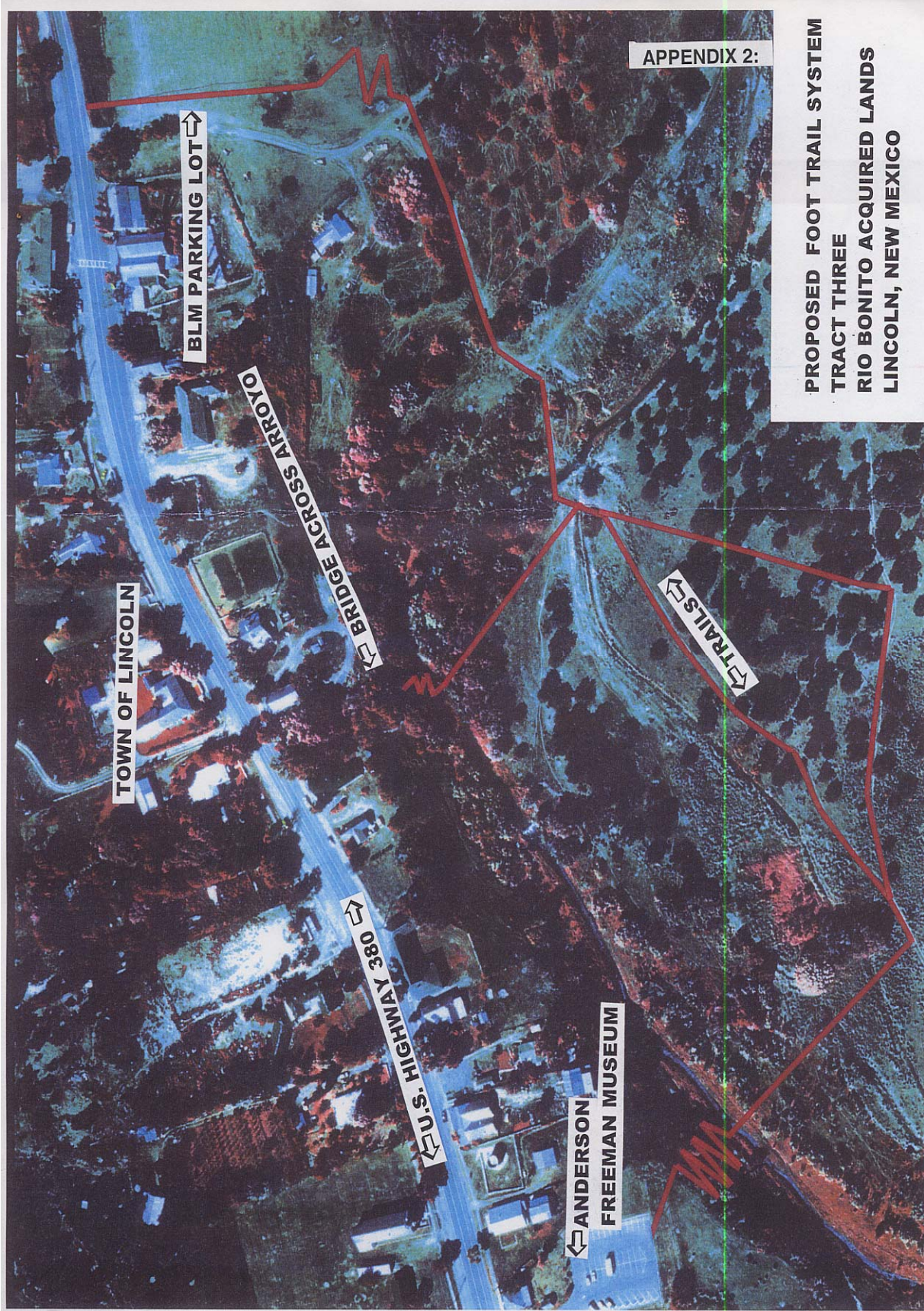
Map printed on January 30, 2006



Statewide Land Status Legend

Bureau of Land Management	Tribal Lands
Bureau of Reclamation	National Park Service
Dept. of Agriculture	Private
Dept. of Defense	State
Dept. of Energy	State Game & Fish
Forest Service	State Park
Fish & Wildlife Service	

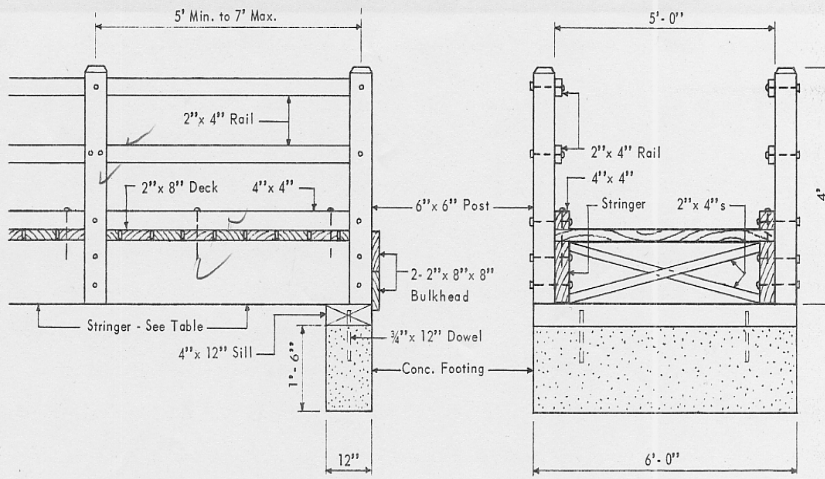






APPENDIX 4:

A utilitarian, yet attractive foot bridge with clean simple lines is this one from an original design by the Oregon State Parks and Recreation Division.

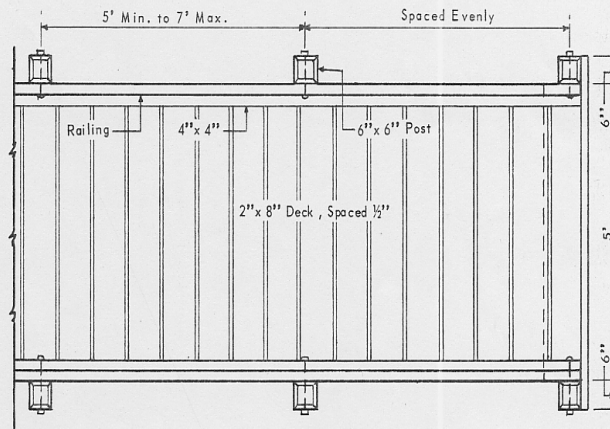


SIDE ELEVATION

SECTION

SPAN	STRINGER
20'	4"x 14"
24'	4"x 16"
28'	6"x 14"
32'	6"x 16"
36'	6"x 18"
40'	6"x 22"

STRINGER TABLE



PLAN




UNITED STATES DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE		FOOTBRIDGE	
<i>The Park Practice Program</i>			
NATIONAL CONFERENCE ON STATE PARKS		AMERICAN INSTITUTE OF PARK EXECUTIVES	
DATE	July 1966	PLATE	505 H
INDEX	B-3133	CONTROL	C-0960-B
		Contributed by OREGON State Parks and Rec. Div.	

Shapes and Sizes

**APPENDIX 5:**

*LONG SPAN Bridge & Culvert*



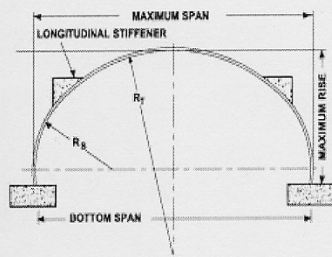
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**Long Span Structures**

Click on the Structure to view the range of sizes available.



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**LOW PROFILE ARCH**

Size Range:

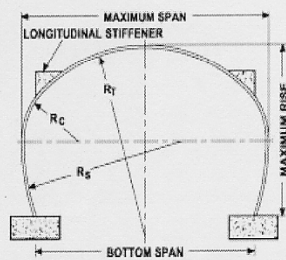
Span 19'-5" to 51'-10",  
Rise 6'-9" to 24'-1"

Uses:

Stream & Wetlands Crossings, Bridge Culverts, Utility Protection, Undergrc Storage Systems.

Provides:

Large end areas where low rises are required. The open bottom provides environmentally protective crossing eliminating disturbance to a stream wetlands.



[Click to View Sizes](#)

**HIGH PROFILE ARCH**

Size Range:

Span 20'- 1" to 49'- 4",  
Rise 9'- 1" to 27'- 3"

Uses:

Stream & Wetlands Crossings, Bridge Culverts, Utility Protection, Undergrc Storage Systems and Vehicular, Pedestrian & Animal underpasses.

Provides:

Additional hydraulic capacity for culverts or a larger clearance box for tunnels. Generates substantially reduced footing reactions under higher fill heights when compared to lower rise shapes. This feature allows for smaller footing and a shorter length than possible with lower rise shapes. The open bottom provides an environmentally protective crossing by eliminating disturbance to stream or wetlands.

**HORIZONTAL ELLIPSE**

Size Range:

Span 19'- 4" to 40'- 0",  
Rise 12'- 9" to 29'- 7"

Uses:

Stream Crossings, Bridges, Culverts, Vehicular, Pedestrian & Animal Underpasses.

Provides: