

**EL MONTE ROADS RIGHT-OF-WAY
ENVIRONMENTAL ASSESSMENT**

Submitted to

NEW MEXICO BUREAU OF LAND MANAGEMENT

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1.0 PROPOSED ACTION/PURPOSE AND NEED

1.1 NEED FOR THE PROJECT

The Bureau of Land Management (BLM) proposes to authorize legal access for roads and utilities to the lands of the members of the El Monte Roads Association in Santa Fe County, New Mexico. The purpose of and need for the project is to establish legal access for roads and utilities to four parcels of private land adjacent to the project area while minimizing new disturbance. Improvements to currently unimproved roads and construction of new roads will assure that they are passable and will address ongoing erosion problems on those roads.

The requirement to allow access to private lands is BLM policy [BLM Manual 2800.06 (D)]:

Allow owners of non-Federal lands surrounded by public land managed under FLPMA (Federal Land Policy and Management Act) a degree of access across public land which will provide for the reasonable use and enjoyment of the non-Federal land. Such access must conform to rules and regulations governing the administration of the public land; keep in mind, however, that the access necessary for the reasonable use and enjoyment of the non-Federal land cannot be denied.

Formerly (at least since 1935; A. Ortiz, personal communication 25 July 2003), access to unimproved roads on BLM land in the project area was through what was then called the Horcado Ranch. Access across this private property was denied after transfer of ownership of the Horcado Ranch to Lawrence J. and Gabrielle Burke on November 30, 1991 (Land Activity History Report, 2003). The Burkes have renamed the property the Mariah Ranch. Legal rights-of-way on the unimproved roads on BLM lands had never been granted to the property owners of the landlocked properties adjacent to the BLM land (S. "Zannie" Hoyt [formerly Garcia], Paul Ortiz, Lillian Walker-Ortiz, and the La Luz Group, LLC); thus, current access is insufficient. The El Monte Roads Association (Association) was formed by the affected landowners to re-establish rights-of-way to their properties. Litigation involving Eloy Garcia and Zannie Hoyt (Garcia), the Burkes, and the BLM resulted in a mediated agreement that new legal access would be built across BLM lands to link the unimproved roads to the north and west with Horcado Ranch Road (Civil Action No. 98-01110SC/DJS-ACE, 3 April 2000). Under the action that was proposed in the Plan of Development (Walbridge and Associates [Walbridge], 2001), legal access would be provided to each of the four private parcels from Horcado Ranch Road via BLM lands west and south of Horcado Ranch using existing roads with a new connection to Horcado Ranch Road (Figure 1.1). Seven additional alternatives were developed as a result of internal and public scoping (Appendix A).

The proposed project addresses the requirement to provide legal access and right-of-way to landlocked private lands when access cannot be obtained across private lands. Access to the properties of the members of the Association is not possible across adjacent private lands (the Jacona Grant, Tesuque and Pojoaque Pueblos) because there are no established and legally recognized rights-of-way across these lands. Adjoining privately owned property in Section 16 cannot be used as a right-of-way because it is currently owned by multiple heirs of Zannie Hoyt,

some of them underage, and it is not possible to gain permission from every heir. Access across the Jacona Grant to NM 502 on the currently existing road is not possible because the road is locked at its boundary with Pojoaque Pueblo, which has denied access across pueblo land. Gaining permission and building a new road across the Jacona Grant to NM 502 would also be problematic because the grant has multiple owners who would have to agree, and the miles of new road required could result in serious environmental and socio-economic issues.

1.2 CONFORMANCE WITH THE LAND USE PLAN

The Proposed Action is in compliance with the Taos Resource Management Plan (RMP) (BLM-NM-PT-88-021-4410), completed in October 1988. A Right-of-Way Permit Application (PA) was submitted to the BLM on April 19, 1996. An amended Right-of-Way Permit Application and Plan of Development were filed with the BLM Taos Field Office on November 12, 2001. The PA is consistent with BLM policy and guidelines, and the Taos RMP states that rights-of-way will be granted to qualified users of public lands. Specifically, the proposed rights-of-way do not enter into areas designated as right-of-way avoidance areas, they are within the designated retention area (an area retained for a given purpose), and they would not conflict with a Class III visual objective.

1.3 RELATIONSHIP TO STATUTES, REGULATIONS, AND OTHER PLANS

This environmental assessment has been prepared under the requirements of the National Environmental Policy Act (NEPA) (40 CFR parts 1500-1508) and its implementing regulations issued by the Council on Environmental Quality (40 CFR§1500). It also complies with FLPMA; planning guidance at 43 CFR§1600 and in the BLM Planning Manual (1600 Series); the BLM Environmental Handbook (H-1790); the Clean Water Act (Sections 402 and 404); the Clean Air Act; the National Historic Preservation Act (NHPA, Section 106); the American Indian Religious Freedom Act; the Resource Conservation and Recovery Act; the Comprehensive Environmental Response, Compensation and Liability Act; the Safe Drinking Water Act; the Wild and Scenic Rivers Act; the Wilderness Act; the Endangered Species Act (ESA, Section 7); Executive Order 13007 on Sacred Sites; Executive Order 11988 on floodplains; Executive Order 11990 on wetlands/riparian zones; and Executive Order 12898 on Environmental Justice. Applicable permits would be obtained to meet National Pollutant Discharge Elimination System (NPDES) and Section 404 Clean Water Act requirements.

The Proposed Action is consistent with existing statutes, regulations, and BLM guidance. Other applicable statutes are located in 43 CFR Chapter II Part 2800 and 43 U.S.C. Section 932. Other applicable guidance includes the BLM New Mexico State Office Road Policy standards, as provided in BLM Manual 91-113, and BLM NEPA requirements, as provided in BLM Handbook H-1790-1 (BLM, 1988).

1.4 DECISION TO BE MADE

The BLM will decide whether or not to authorize right-of-way to the El Monte Roads Association and, if so, where and under what conditions.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 RANGE OF ALTERNATIVES

The project area is approximately 9.7 miles northwest of downtown Santa Fe (Figure 2.1). The legal description of the landlocked parcels is Township 18 North, Range 8 East, Sections 10 and 15 and the south half of Section 2. The use of the roads would be year-round. Figure 2.2 shows the project area with the discussed road segments.

Including the proposed action, eight Action Alternatives (Alternatives A–H) plus the No Action Alternative (Alternative I) are fully considered in this Environmental Assessment (EA). They are summarized in Table 2.1 and illustrated in the figures accompanying the descriptions of the alternatives. The Action Alternatives were developed as a result of the submission of a Plan of Development (POD) (Walbridge, 2001) by the Association, and through the internal and public scoping processes. Alternative A is the Proposed Action that was presented in the Plan of Development. Alternative C was developed during internal scoping, when the presence of an existing two-track (Road Segment 8) that gives access to Road Segments 3, 4, and 5 of the main north-south road from Horcado Ranch Road was discussed. Alternatives B and D were developed during internal scoping meetings when the existence of a two-track (Road Segment 9) that accesses the corners of Sections 10 and 15 from Road Segment 4 was observed. Alternatives E and F, with access off of Buckman Road, were developed as a result of public scoping (Appendix A). Members of the public who have properties off of Paseo de la Tierra, Estrada Calabasa, and Horcado Ranch Road presented this alternative during the public scoping meeting on February 5, 2003, and in the scoping period that followed. Alternatives G and H were developed during internal scoping when the inter-disciplinary team discussed the length of Road Segment 9 and the number of arroyo crossings on that segment and decided that a more direct route with fewer arroyo crossings could be constructed from near the center of Road Segment 7 to the corner of Sections 10 and 15 (Road Segment 13). Two other alternatives were not carried through detailed analysis (see Section 2.5). With the exception of Road Segments 11 and 12 and a small portion of Road Segment 1, a 50-foot right-of-way with a 24-foot roadbed was requested in the POD. The Santa Fe Land Development Code (1996) requires a two-way road with two 12-foot lanes for access to houses that may be built on the private lands. The 50-foot right-of-way is necessary to allow for construction of a safe road.[is it the road or the construction that needs to be safe?]

2.2 CONSTRUCTION

The following discussion of construction means and methods is general and applies to all alternatives except the No Action Alternative. Santa Fe County road standards would be used for road construction and design. The entire 50-foot right-of-way (a worst-case scenario) was used to determine the amount of acreage needed for construction, to avoid the need to finalize engineering plans for all eight alternatives. In reality, less acreage would be disturbed. The worst-case scenario allows for changes in alignment that would occur within the 50-foot right-of-way, additional areas needed for cut-and-fill slopes, and culvert construction at arroyos. Since construction disturbance in all alternatives exceeds 1 acre, a stormwater pollution prevention plan (SWPPP) would be completed before starting construction along the chosen alternative.

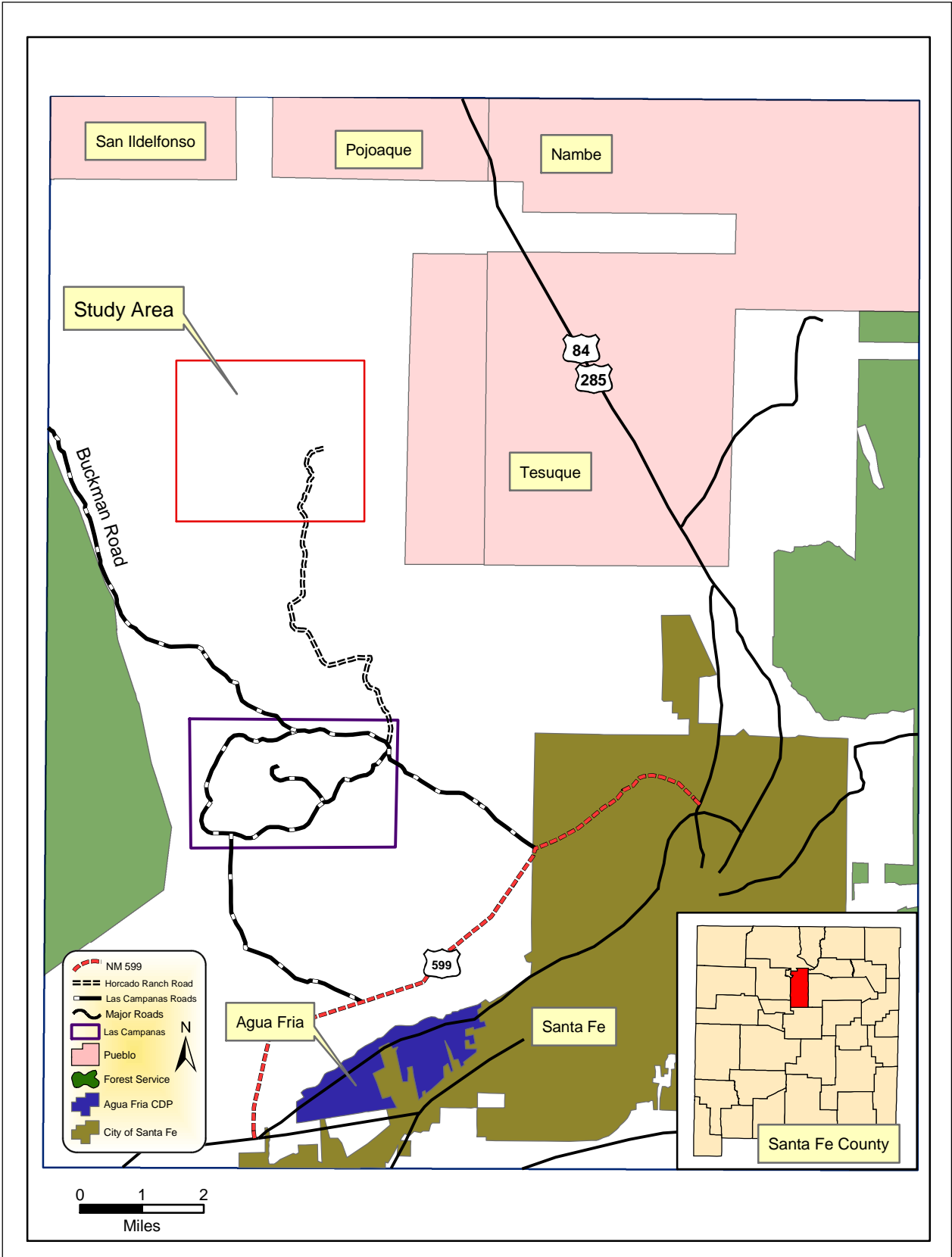
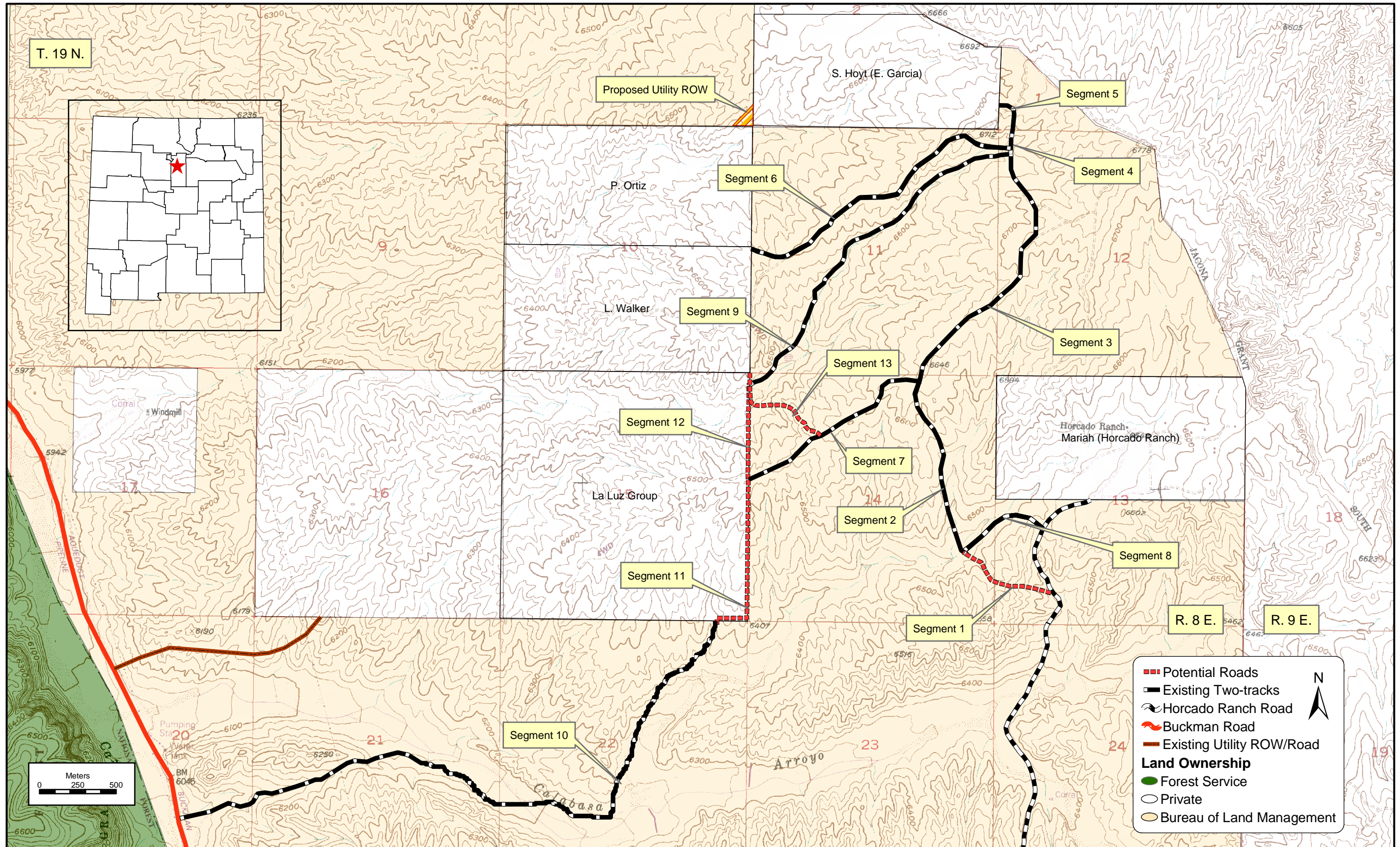


Figure 2.1. Overview of project area.



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

Figure 2.2. Project area with road segments.

Table 2.1. Road Lengths, Construction Term, and Roadway Disturbance

	Miles	Construction Term Impacts (miles @ 38 feet)	Construction Term Impacts (miles @ 50 feet)	Construction Term Impacts (miles @ 100 feet)	Total Construction Term Impacts (acres)*	Roadway Disturbance (miles @ 12 feet)	Roadway Disturbance (miles @ 24 feet)	Total Roadway Disturbance (acres)*
Alternative A (Proposed Action)								
<i>Road Segment 1</i>	0.43		0.39	0.04	2.8		0.43	1.3
<i>Road Segment 2</i>	0.74	0.74			3.4	0.74		1.1
<i>Road Segment 3</i>	1.18	1.18			5.4	1.18		1.7
<i>Road Segment 4</i>	0.02	0.02			0.1	0.02		0.0
<i>Road Segment 5</i>	0.19	0.19			0.9	0.19		0.3
<i>Road Segment 6</i>	1.27	1.27			5.8	1.27		1.8
<i>Road Segment 7</i>	0.84	0.84			3.9	0.84		1.2
Alternative A Totals	4.67	4.24	0.39	0.04	22.4	4.24	0.43	7.4
Alternative B								
<i>Road Segment 1</i>	0.43		0.39	0.04	2.8		0.43	1.3
<i>Road Segment 2</i>	0.74	0.74			3.4	0.74		1.1
<i>Road Segment 3</i>	1.18	1.18			5.4	1.18		1.7
<i>Road Segment 4</i>	0.02	0.02			0.1	0.02		0.0
<i>Road Segment 5</i>	0.19	0.19			0.9	0.19		0.3
<i>Road Segment 9</i>	1.52	1.52			7.0	1.52		2.2
Alternative B Totals	4.08	3.65	0.39	0.04	19.7	3.65	0.43	6.6
Alternative C								
<i>Road Segment 2</i>	0.74	0.74			3.4	0.74		1.1
<i>Road Segment 3</i>	1.18	1.18			5.4	1.18		1.7
<i>Road Segment 4</i>	0.02	0.02			0.1	0.02		0.0
<i>Road Segment 5</i>	0.19	0.19			0.9	0.19		0.3

Table 2.1. Road Lengths, Construction Term and Roadway Disturbance, continued

	Miles	Construction Term Impacts (miles @ 38 feet)	Construction Term Impacts (miles @ 50 feet)	Construction Term Impacts (miles @ 100 feet)	Total Construction Term Impacts (acres)*	Roadway Disturbance (miles @ 12 feet)	Roadway Disturbance (miles @ 24 feet)	Total Roadway Disturbance (acres)*
<i>Road Segment 6</i>	1.27	1.27			5.8	1.27		1.8
<i>Road Segment 7</i>	0.84	0.84			3.9	0.84		1.2
<i>Road Segment 8</i>	0.39	0.39			1.8	0.39		0.6
Alternative C Totals	4.63	4.63	0	0	21.3	4.63	0.00	6.7
Alternative D								
<i>Road Segment 2</i>	0.74	0.74			3.4	0.74		1.1
<i>Road Segment 3</i>	1.18	1.18			5.4	1.18		1.7
<i>Road Segment 4</i>	0.02	0.02			0.1	0.02		0.0
<i>Road Segment 5</i>	0.19	0.19			0.9	0.19		0.3
<i>Road Segment 8</i>	0.39	0.39			1.8	0.39		0.6
<i>Road Segment 9</i>	1.52	1.52			7.0	1.52		2.2
Alternative D Totals	4.04	4.04	0	0	18.6	4.04	0.00	5.9
Alternative E								
<i>Road Segment 3</i>	1.18	1.18			5.4	1.18		1.7
<i>Road Segment 4</i>	0.02	0.02			0.1	0.02		0.0
<i>Road Segment 5</i>	0.19	0.19			0.9	0.19		0.3
<i>Road Segment 6</i>	1.27	1.27			5.8	1.27		1.8
<i>Road Segment 7</i>	0.84	0.84			3.9	0.84		1.2
<i>Road Segment 10</i>	2.83	2.83			13.0	2.83		4.1
<i>Road Segment 11</i>	0.71			0.71	8.6		0.71	2.1
Alternative E Totals	7.04	6.33	0	0.71	37.8	6.33	0.71	11.3

Table 2.1. Road Lengths, Construction Term and Roadway Disturbance, continued

	Miles	Construction Term Impacts(miles @ 38 feet)	Construction Term Impacts(miles @ 50 feet)	Construction Term Impacts(miles @ 100 feet)	Total Construction Term Impacts (acres)*	Roadway Disturbance (miles @ 12 feet)	Roadway Disturbance (miles @ 24 feet)	Total Roadway Disturbance (acres)*
Alternative F								
Road Segment 4	0.02	0.02			0.1	0.02		0.0
Road Segment 5	0.19	0.19			0.9	0.19		0.3
Road Segment 9	1.52	1.52			7.0	1.52		2.2
Road Segment 10	2.83	2.83			13.0	2.83		4.1
Road Segment 11	0.71			0.71	8.6		0.71	2.1
Road Segment 12	0.39			0.39	4.7		0.39	1.1
Alternative F Totals	5.66	4.56	0	1.1	34.3	4.56	1.10	9.8
Alternative G								
Road Segment 1	0.43		0.39	0.04	2.8		0.43	1.3
Road Segment 2	0.74	0.74			3.4	0.74		1.1
Road Segment 3	1.18	1.18			5.4	1.18		1.7
Road Segment 4	0.02	0.02			0.1	0.02		0.0
Road Segment 5	0.19	0.19			0.9	0.19		0.3
Road Segment 7-NE½	0.49	0.49			2.3	0.49		0.7
Road Segment 13	0.46		0.46		2.8		0.46	1.3
Alternative G Totals	3.51	2.62	0.85	0.04	17.70	2.62	0.89	6.4
Alternative H								
Road Segment 2	0.74	0.74			3.4	0.74		1.1
Road Segment 3	1.18	1.18			5.4	1.18		1.7
Road Segment 4	0.02	0.02			0.1	0.02		0.0
Road Segment 5	0.19	0.19			0.9	0.19		0.3
Road Segment 7-NE½	0.49	0.49			2.3	0.49		0.7
Road Segment 8	0.39	0.39			1.8	0.39		0.6
Road Segment 13	0.46		0.46		2.8		0.46	1.3
Alternative H Totals	3.47	3.01	0.46	0	16.7	3.01	0.46	5.7
Alternative I - No Action	0	0	0	0	0	0	0	0

*Width of disturbance in feet x (length in miles x 5,280)/43560

BLM requirements, including maximum inslope and outslope values, would be followed in designing the chosen alternative. All road margins would be revegetated. Only the 24-foot roadway would be permanently altered, by being covered with gravel. Construction would be completed in about 1 year for Alternatives A–D, G, and H (Walbridge, 2001). Alternatives E and F would require about 1.5–2 years because of the need for a bridge at Calabasa Arroyo and additional road miles. Construction issues specific to the individual action alternatives are discussed below with each alternative.

Construction would involve using a bulldozer to build a road 24 feet wide over existing two-track roads or to construct new roadways. Besides a bulldozer, equipment requirements could include a scraper, a motorgrader, a compactor, and a water truck. Trucks will deliver corrugated metal pipe culverts, gravel, and other building materials. The work force would probably average four workmen and one foreman per day. Workers' vehicles, construction machinery, and road-building material stockpiles would be kept within the right-of-way on road sections previously built. An additional Temporary Use Area (TUA) of 20 acres (871,203.5 sq. ft.) may be required for stockpiling removed trees or road-building materials outside of the right-of-way. If a TUA is needed, the contractor will contact the BLM Taos Field Office to choose an area for the site that is not environmentally sensitive and is near the chosen alternative. Before the TUA is used, all of the necessary resource studies and permits would be completed. The chosen alternative route would be surveyed and the exterior boundaries staked commensurate with the surveyed boundaries. Workmen would not work outside of those boundaries. In areas where there is no existing two-track road and construction of new road would be required, vegetation would be removed and a 24-foot-wide roadway would be built. All removal and replanting of trees and revegetation would be done in accordance with a vegetation plan approved by the BLM. The plan would designate which trees would be removed, transplanted, or left in place and would indicate implementation measures. The construction process would involve transplanting, clearing, and removing vegetation, installing culverts, grading the road, and installing gravel, then revegetating the areas of temporary disturbance. Care would be taken to replace the seed-bearing topsoil after construction has been completed. The regeneration process would be expedited by stabilizing the replaced topsoil with an organic mulch.

Access would be maintained along the right-of-way except for periods of culvert installation. All applicable federal and state laws, including safety requirements, would be complied with during road construction. The road would be gated at night to keep the general public out of the construction site. Construction would occur during January and February only if weather permits. Revegetation is guaranteed by the landowners as stipulated in the POD (2001).

Cut-and-fill slopes would be stabilized by revegetation, including use of geo-jute matting where necessary. Seeding specifications would be provided in the engineering plans. Flared-end sections and BLM-approved riprap would be installed at the outlet ends of culverts to prevent erosion. Best Management Practices would be followed downstream of culverts (e.g., installation of temporary straw-bale check dams) and at the toes of all fills 2 feet or more high (e.g., installation of silt fences) and would be detailed in the SWPPP.

Construction would begin as soon as public input has been analyzed, an alternative is chosen by the BLM, mitigation measures are approved, a final Finding of No Significant Impact (FONSI)

and Record of Decision (ROD) are issued, final engineering plans are approved, and the right-of-way is authorized.

2.3 OPERATIONS

The following discussion of road operations is general and would apply to all Action Alternatives.

If an Action Alternative is selected, maintenance of the road would initially be the responsibility of the El Monte Roads Association. A joint road maintenance agreement signed by the members of the Association and attached to the POD was revised on March 10, 2003. The road maintenance program would be included with the engineering plans. Signs would be installed for speed control, warnings, and road names per Santa Fe County Road Standards to enhance safety. No signs other than traffic signs would be allowed in the right-of-way or on BLM lands adjacent to the right-of-way. Snow would be removed by a private service. The work schedule for road maintenance would be on an as-needed basis. Fire control along the road would be improved by the initial elimination of fuel for fires along the right-of-way. Road inspections and contingency planning would be established in the Association documents. In time, the responsibility for maintenance and operations may devolve upon Santa Fe County if an access road is constructed and declared a county road. The right-of-way term would be for 30 years, with the right of renewal. The road would be permanent, and no termination of the right-of-way agreement is anticipated.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER EVALUATION

Two additional alternatives that would access the subject private parcels from Buckman Road were discussed during the scoping process but have been dropped from further evaluation. One of these alternatives, discussed at the public meeting on February 5, 2003, and during public scoping (see Appendix A), involved constructing new road from Buckman Road north of Calabasa Arroyo to the corner of Sections 15, 16, 21, and 22 (Figure 2.2). From there, new road would be built along the south and east sides of Section 15 to join Road Segments 2–8 (discussed with the Proposed Action). This alternative would have required construction of 3.33–3.72 miles of new road with construction term impacts of 20.2–22.5 acres and new roadway impacts of 9.7–10.8 acres. This route was eliminated from further evaluation because of the amount of new construction that would be required over heavily dissected and easily eroded terrain; an additional 2.62 miles of new road would have been required to reach the same access points as western alternatives E and F.

The other alternative dropped from detailed analysis, discussed in a meeting with the BLM on August 26, 2003, involved crossing the La Luz Group lands (Section 15) rather than building new road on the south and east sides of that section. The BLM would have allowed right-of-way on an existing road that crosses federal land (Road Segment 10) to an existing road on the La Luz Group property, which re-enters BLM-managed land at Section 14 (Road Segment 9). This alternative would ask the owners of the La Luz property to give right-of-way to the Walkers, the Ortizes, and S. Zannie Hoyt. This alternative is not implementable because the four members of the Association decided in the fall of 1999, while working on a roads maintenance agreement, that they would not give each other access across their holdings.

2.5 ELECTRIC AND PHONE UTILITIES COMMON TO ALL ACTION ALTERNATIVES (A-H)

Electric utilities, and possibly gas and phone, would be tapped from existing lines at Buckman Road and run along existing authorized BLM road and utility rights-of-way south of Section 16, across private lands in Sections 16, 15, and 10, across the southeast corner of Section 3 on BLM land, and into private land at Section 2. BLM would grant new right-of-way at the southeast corner of Section 3. The authorized right-of-way to Section 16 was issued to Suzanne Hoyt on 8 July 1997 (right-of-way # NM 97059). Ms. Hoyt would notify BLM of her consent to use this right-of-way for the placement of utility lines to service the other applicants' private properties as well as her own. No more than 400 square feet (0.01 acre) of new BLM right-of-way would be required at the southeast corner of Section 3 to accommodate this utility corridor. The trench would be 20 feet wide by 20 feet long by a maximum 4.5 feet deep. Electric line capacity would be 135 amps. Utilities would be placed underground as required by the Santa Fe Land Development Code and would conform with guidelines set by the BLM-authorized right-of-way grant to Section 16. Water and septic services would not be brought in from off-site.

2.6 DETAILED DESCRIPTION AND ANALYSIS OF ALTERNATIVES

Throughout this document, the terms *construction term* and *roadway* are used to describe disturbance associated with the authorization of right-of-way and construction of roads. Construction term disturbance is the maximum allowable disturbance within the right-of-way, excluding the existing road surface. The road margins would be revegetated so that most disturbance would be temporary. Roadway width would be 24 feet, and impacts in this area would by definition be permanent. Throughout this analysis, it is assumed that existing two-track roads in the project area average 12 feet wide.

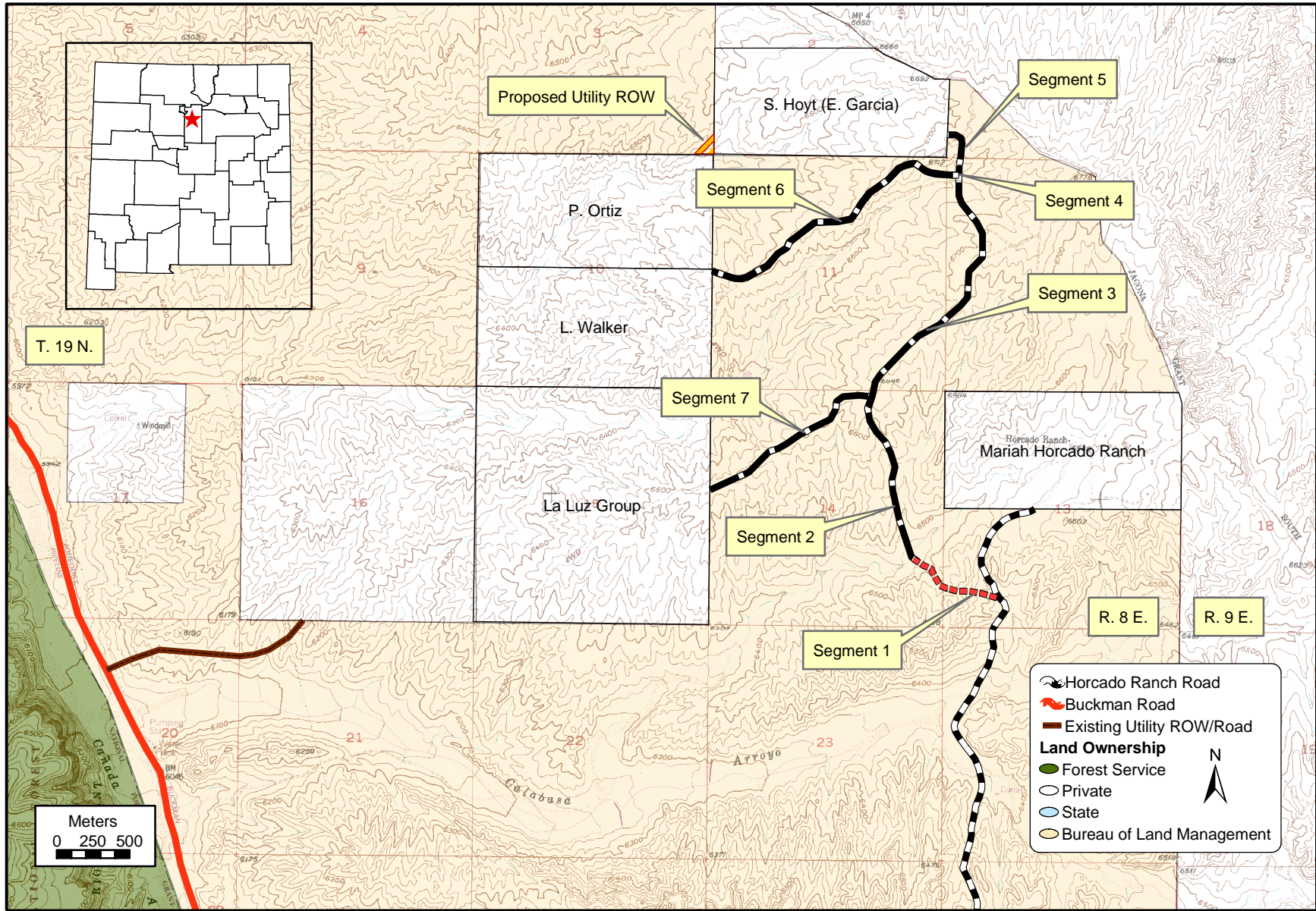
Construction term disturbance may include material storage, construction equipment parking, and allowance for equipment turning. Construction term disturbance associated with road construction would vary based on terrain but in most cases would be no wider than the constructed roadbed. However, for analysis purposes, the maximum allowable disturbance is assumed to include the entire 50-foot right-of-way specified in the Plan of Development (Walbridge, 2001). A 100-foot right-of-way would be required on ridges and steep hills where there are no existing two-tracks. Estimates of construction term disturbance in areas with existing two-track roads are based on a 50-foot right-of-way, less the 12-foot-wide e two-track (already disturbed), which equals 38 feet of construction term disturbance. Estimates of new permanent roadway along existing two-track roads is based on a 24-foot-wide roadway, less the 12-foot width of the existing two-track (already disturbed), or 12 feet of new roadway coverage (permanent) (Table 2.1). Where new roads would be constructed, the construction term disturbance and the area covered by permanent roadway are estimated from the amount of right-of-way and the 24-foot graveled road, respectively, that are requested in the POD (2001). The length of each road segment was measured by SWCA personnel during mapping. The road intersections were marked in the field using a GPS unit.

2.6.1 Alternative A (Proposed Action)

Alternative A, as proposed by the Association, would build and improve 4.67 miles of 24-foot-wide dirt roads to access private land parcels that currently have no legal access across BLM lands (Figure 2.3). These roads would be east and south of the parcels to be accessed. The BLM would authorize, and allow construction and improvements within, a 50-foot-wide right-of-way through most of the proposed alignment and a 100-foot-wide right-of-way along 200 feet of the proposed alignment where it crosses a low ridge. The roads would cross BLM lands in Sections 1, 11, 12, 13, and 14 of Township 18 North, Range 8 East. In total, construction of the Proposed Action would include approximately 22.4 acres of new construction term disturbance. New roadway impacts would cover approximately 7.4 acres (Table 2.1).

Alternative A would provide access from Horcado Ranch Road and comprise Road Segments 1, 2, 3, 4, 5, 6, and 7. Road Segment 1 is the southernmost 0.43 mile of road. Road would be built across a ridge on previously undisturbed land to provide new access from Horcado Ranch Road. Where the road would cross the ridge, a 100-foot-wide right-of-way would be required for about 210 feet of the alignment to accommodate new road cuts. The rest of the segments would be on existing two-tracks. Access to the Hoyt parcel (Section 2) would be via Road Segments 1, 2, 3, 4, and 5. Access to the Walker and Ortiz parcels (south and north halves of Section 10) would be via Road Segments 1, 2, 3, 4, and 6. Road Segment 6 follows an existing two-track road along a ridgetop. Access to the La Luz Group parcel (Section 15) would be via Road Segments 1, 2, and 7. Road Segment 7 follows an existing two-track road along a ridgetop.

Right-of-way under Alternative A would total 4.67 miles, including 0.43 mile of new road construction (Segment 1) and 4.24 miles of rehabilitated existing road (Sections 2–7). The proposed right-of-way under Alternative A is 50 feet wide for all of Road Segments 2, 3, 4, 5, 6, and 7 and for 0.39 mile of Segment 1. The remaining 0.04 mile (210 feet) of Segment 1 would be 100 feet wide to accommodate a larger road cut where the road would cross a ridge top.



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

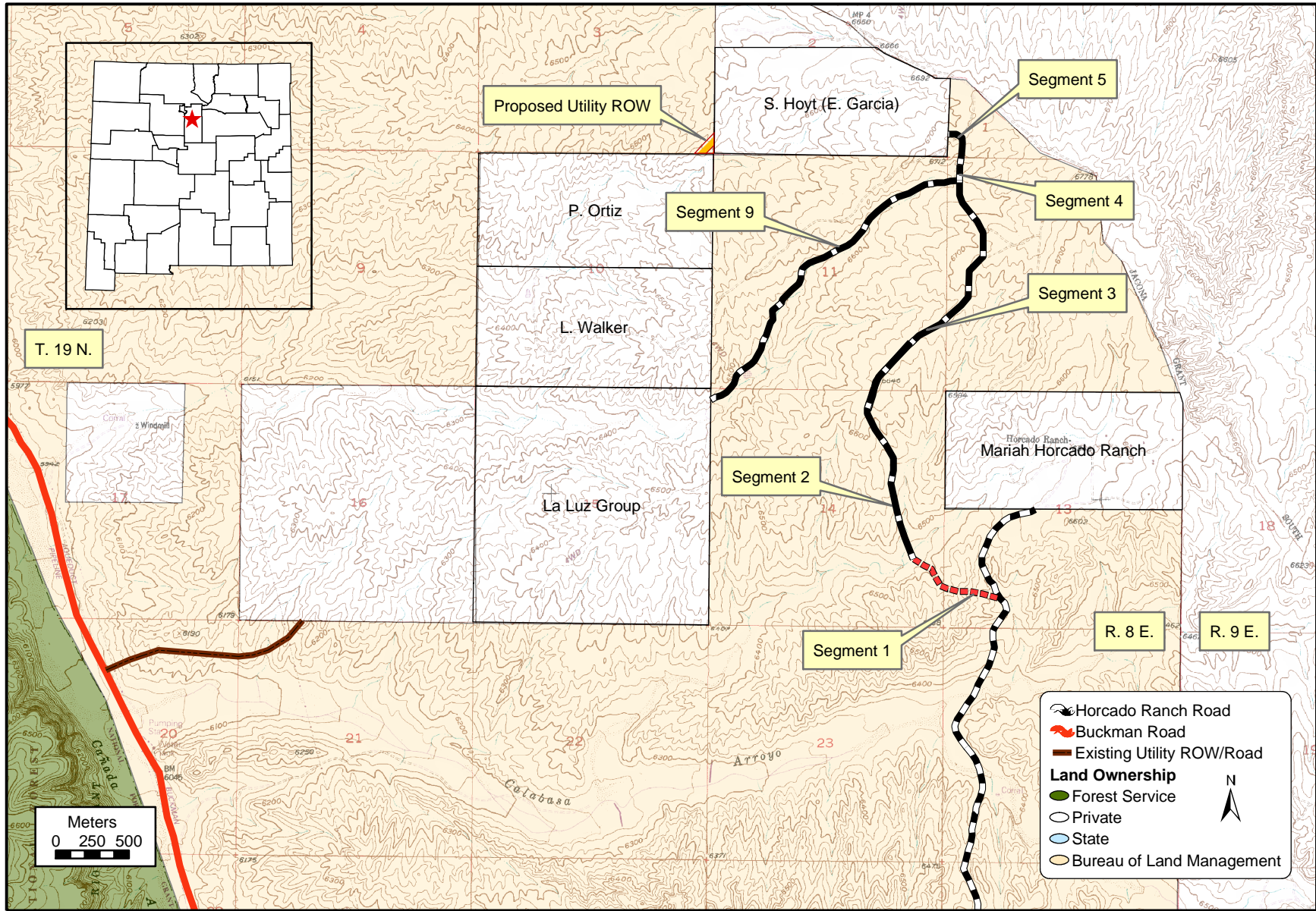
Figure 2.3. Alternative A.

2.6.2 Alternative B

Alternative B would build and improve 4.08 miles of 24-foot-wide dirt roads across BLM lands in Sections 1, 11, 12, 13, and 14 of Township 18 North, Range 8 East (Figure 2.4). In total, construction of Alternative B would involve approximately 19.7 acres of new construction term disturbance. New roadway impacts would cover approximately 6.6 acres (Table 2.1).

Alternative B would provide access from Horcado Ranch Road and comprise Road Segments 1, 2, 3, 4, 5, and 9. Road Segment 1 is the southernmost 0.43 mile of road. Road would be built across a ridge on previously undisturbed land to provide new access from Horcado Ranch Road. Where the road would cross the ridge, a 100-foot-wide right-of-way would be required for about 210 feet of the alignment to accommodate new road cuts. The rest of the segments would be on existing two-tracks. Road Segment 9 follows an existing two-track road along a drainage bottom. Access to the Hoyt parcel (Section 2) would be via Road Segments 1, 2, 3, 4, and 5. The Walker parcel (south half of Section 10) would not have direct access across BLM land. Right-of-way would have to be granted by the La Luz Group. The Walker Parcel would be accessed via Road Segments 1, 2, 3, 4, and 9 and private right-of-way across the La Luz Group parcel. The Ortiz parcel (north half of Section 10) would not have direct access across BLM land. Rights-of-way would have to be granted by the La Luz Group and Walker. The Ortiz parcel would be accessed via Road Segments 1, 2, 3, 4, and 9 and 0.5 mile of private rights-of-way on the La Luz Group and Walker parcels. Access to the La Luz Group parcel (Section 15) would be via Road Segments 1, 2, 3, 4, and 9.

Right-of-way under Alternative B would total 4.08 miles, including 0.43 mile of new road construction (Segment 1) and 3.65 miles of rehabilitated existing road (Segments 2, 3, 4, 5, and 9). The proposed right-of-way under Alternative B is 50 feet wide for all of Road Segments 2, 3, 4, 5, and 9 and for 0.39 mile of Segment 1. About 0.5 mile of new road would have to be constructed on the Walker and La Luz parcels to reach the Ortiz parcel. The remaining 0.04 mile (210 feet), Segment 1, would be 100 feet wide to accommodate a larger road cut where the road would cross a ridge top.



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

Figure 2.4. Alternative B.

2.6.3 Alternative C

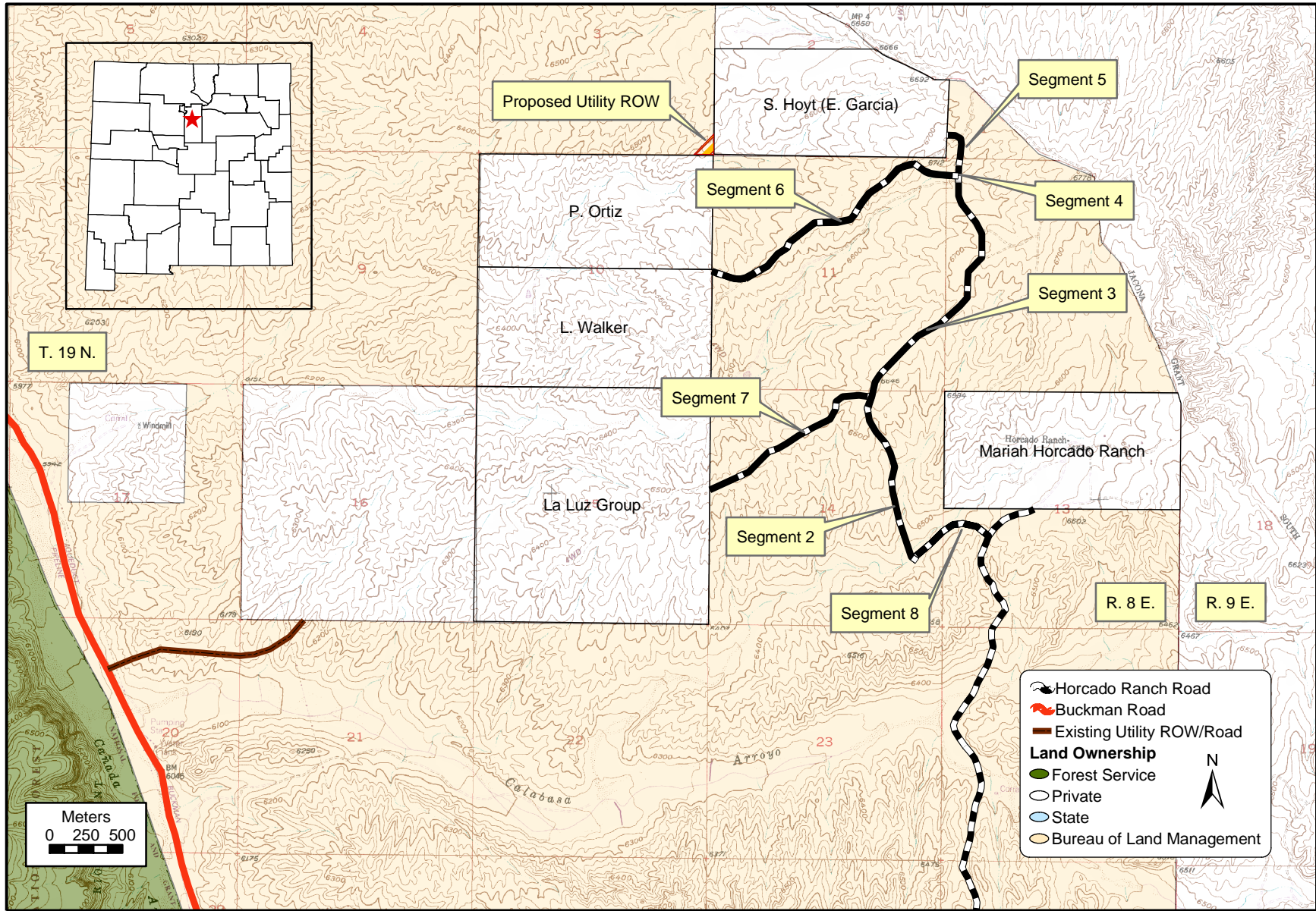
Alternative C would build and improve 4.63 miles of 24-foot-wide dirt roads across BLM lands in Sections 1, 11, 12, 13, and 14 of Township 18 North, Range 8 East (Figure 2.5). In total, construction of Alternative C would include approximately 21.3 acres of new construction term disturbance. New roadway impacts would cover approximately 6.7 acres (Table 2.1).

Alternative C would provide access from Horcado Ranch Road and comprise Road Segments 2, 3, 4, 5, 6, 7, and 8. Access to the Hoyt parcel (Section 2) would be via Road Segments 8, 2, 3, 4, and 5, on existing two-track roads.

Access to the Walker and Ortiz parcels (south and north halves of Section 10) would be via Road Segments 8, 2, 3, 4, and 6. These road segments are existing two-track roads. Road Segment 6 follows an existing two-track road along a ridgetop.

Access to the La Luz Group parcel (Section 15) would be via Road Segments 8, 2, and 7. These road segments are existing two-track roads. Road Segment 7 follows an existing two-track road along a ridgetop.

Right-of-way under Alternative C would total 4.63 miles of rehabilitated existing road (Segments 2, 3, 4, 5, 6, 7, and 8). The proposed right-of-way under Alternative C is 50 feet wide for all road segments.



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

Figure 2.5. Alternative C.

2.6.4 Alternative D

Alternative D would build and improve 4.04 miles of 24-foot-wide dirt roads across BLM lands in Sections 1, 11, 12, 13, and 14 of Township 18 North, Range 8 East (Figure 2.6). In total, building of Alternative D would include approximately 18.6 acres of new construction term disturbance. New roadway impacts would cover approximately 5.9 acres (Table 2.1).

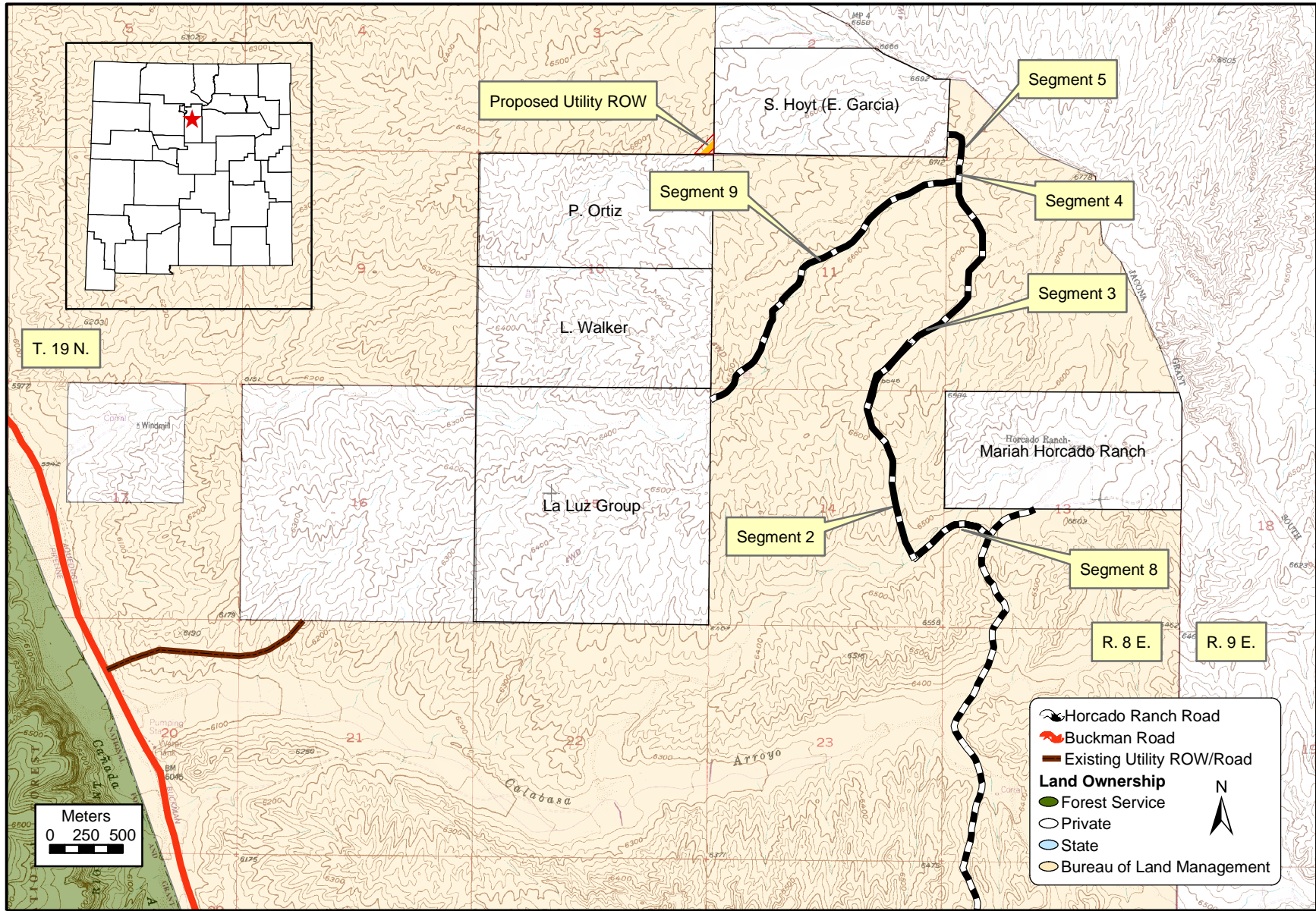
Alternative D would provide access from Horcado Ranch Road and comprise Road Segments 2, 3, 4, 5, 8, and 9. Access to the Hoyt parcel (Section 2) would be via Road Segments 8, 2, 3, 4, and 5. These road segments are existing two-track roads. Road Segment 9 follows an existing two-track road along a drainage bottom.

The Walker parcel (south half of Section 10) would not have direct access across BLM land. Right-of-way would have to be granted by the La Luz Group. The Walker parcel would be accessed via Road Segments 8, 2, 3, and 9 and private right-of-way across the La Luz Group parcel. Road Segments 8, 2, 3, and 9 are existing two-track roads. Road Segment 9 follows an existing two-track road along a drainage bottom.

The Ortiz parcel (north half of Section 10) would not have direct access across BLM land. Rights-of-way would have to be granted by the La Luz Group and Walker. The Ortiz parcel would be accessed via Road Segments 8, 2, 3, and 9 and private rights-of-way across the La Luz Group and Walker parcels. Road Segments 8, 2, 3, and 9 are existing two-track roads. Road Segment 9 follows an existing two-track road along a drainage bottom.

Access to the La Luz Group parcel (Section 15) would be via Road Segments 8, 2, 3, and 9. These road segments are existing two-track roads. Road Segment 9 follows an existing two-track road along a drainage bottom.

Right-of-way under Alternative D would total 4.04 miles of rehabilitated existing road (Segments 2, 3, 4, 5, 8, and 9). The proposed right-of-way under Alternative D is 50 feet wide for all of the road segments. About 0.5 mile of new road would have to be constructed on the Walker and La Luz parcels to reach the Ortiz parcel.



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

Figure 2.6. Alternative D.

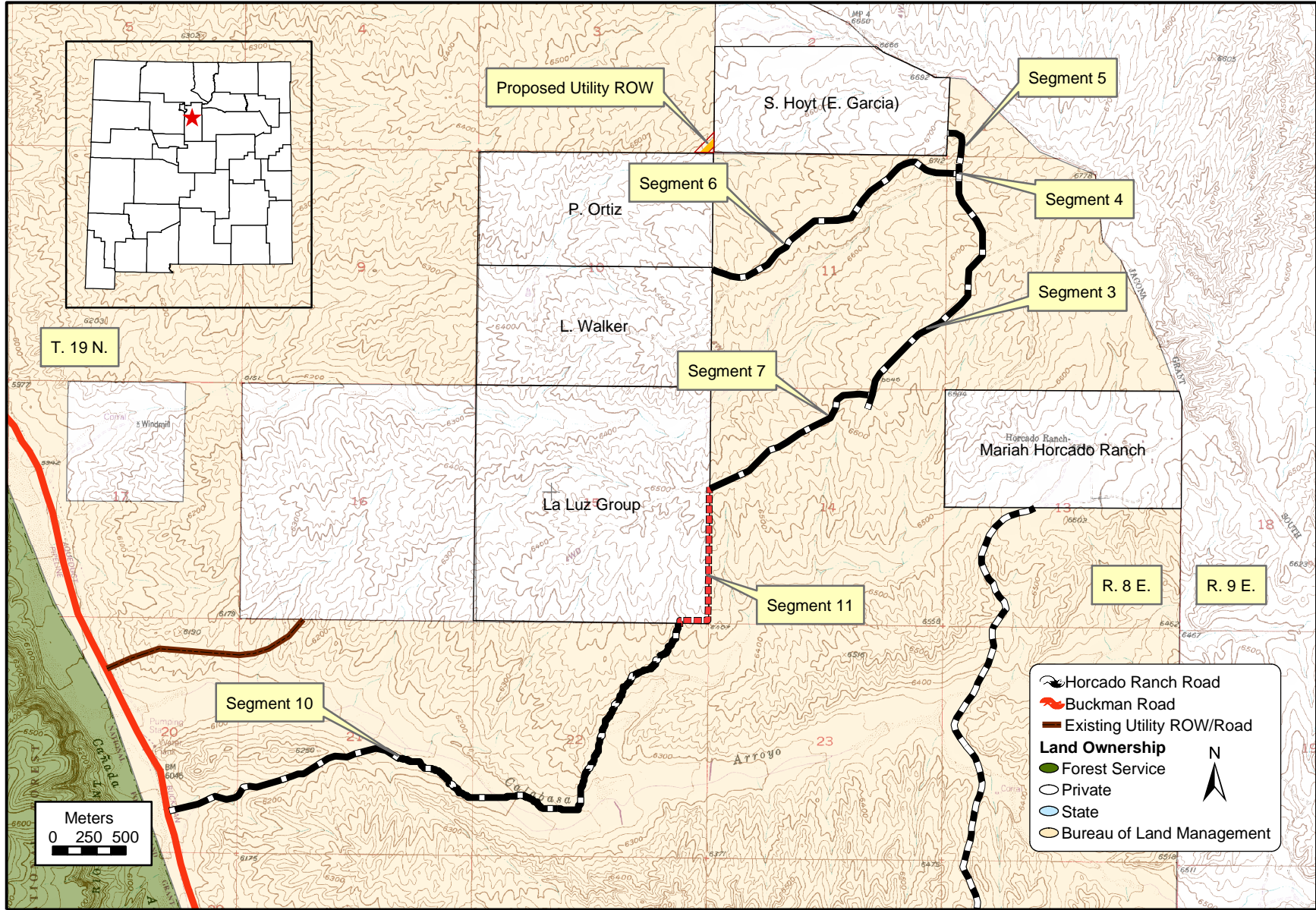
2.6.5 Alternative E

Alternative E would build and improve 7.04 miles of 24-foot-wide dirt roads across BLM lands in Sections 1, 11, 12, 14, 20, 21, and 22 of Township 18 North, Range 8 East (Figure 2.7). In total, building of Alternative E would include approximately 37.8 acres of new construction disturbance. New roadway impacts would cover approximately 11.3 acres (Table 2.1).

Alternative E would provide access from Buckman Road and comprise Road Segments 3, 4, 5, 6, 7, 10, and 11. Road Segments 3, 4, 5, 6, 7, and 10 are existing two-track roads. Road segments 6 and 7 are along a ridgetop. Road Segment 11 would be a new road built across broken terrain and would require a 100-foot-wide right-of-way to accommodate wider road cuts (B. Walbridge, personal communication 9 September 2003). Access to the Hoyt parcel (Section 2) would be via Road Segments 10, 11, 7, 3, 4, and 5. Access to the Walker and Ortiz parcels (south and north halves of Section 10) would be via Road Segments 10, 11, 7, 3, 4, and 6. Access to the La Luz Group parcel (Section 15) would be via Road Segment 10.

Right-of-way under Alternative E would total 7.04 miles, including 0.71 mile of new road construction (Road Segment 11) and 6.33 miles of rehabilitated existing road (Segments 3, 4, 5, 6, 7, and 10). The proposed right-of-way under Alternative E is 50 feet wide for all of Road Segments 3, 4, 5, 6, 7, and 10. The proposed right-of-way is 100 feet wide for all of Road Segment 11.

Alternative E would require construction of a new bridge with 6,250 square feet of bridge deck and a 5-foot clearance under the bridge across Calabasa Arroyo within Road Segment 10 (B. Walbridge, personal communication 16 June 2003).



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

Figure 2.7. Alternative E.

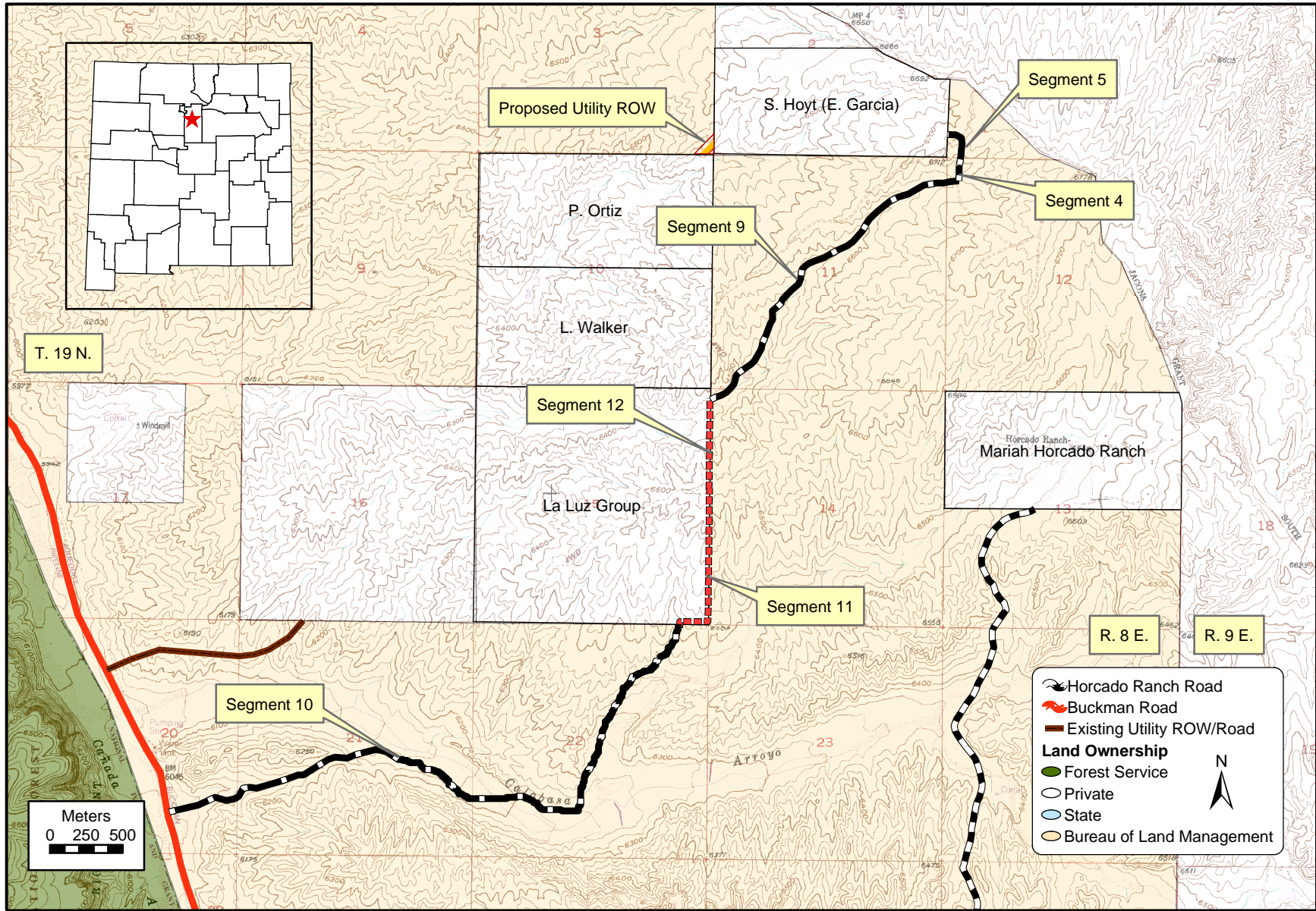
2.6.6 Alternative F

Alternative F would build and improve 5.66 miles of 24-foot-wide dirt roads across BLM lands in Sections 1, 11, 12, 14, 20, 21, and 22 of Township 18 North, Range 8 East (Figure 2.8). In total, Alternative F would include approximately 34.3 acres of new construction term disturbance. New roadway impacts would cover approximately 9.8 acres (Table 2.1).

Alternative F would provide access from Buckman Road and comprise Road Segments 4, 5, 9, 10, 11, and 12. Road Segments 10, 9, 4, and 5 are existing two-track roads. Road Segments 11 and 12 would be new roads built across broken terrain and would require a 100-foot-wide right-of-way to accommodate wider road cuts (B. Walbridge, personal communication 9 September 2003). Access to the Hoyt parcel (Section 2) would be via Road Segments 10, 11, 12, 9, 4, and 5. The Walker parcel (south half of Section 10) would not have direct access across BLM land. Right-of-way would have to be granted by the La Luz Group. The Walker parcel would be accessed via Road Segments 10, 11, and 12 and private right-of-way across the La Luz Group parcel. The Ortiz parcel (north half of Section 10) would not have direct access across BLM land. Rights-of-way would have to be granted by the La Luz Group and Walker. The Ortiz parcel would be accessed via Road Segments 10, 11, and 12 and private rights-of-way across the La Luz Group and Walker parcels. Access to the La Luz Group parcel (Section 15) would be via Road Segment 10.

Right-of-way under Alternative F would total 5.66 miles, including 1.1 miles of new road construction (Segments 11 and 12) and 4.56 miles of rehabilitated existing road (Segments 4, 5, 9, and 10). The proposed right-of-way under Alternative F is 50 feet wide for all of Road Segments 4, 5, 9, and 10. The proposed right-of-way is 100 feet wide for all of Road Segments 11 and 12. About 0.5 mile of new road would have to be constructed on the Walker and La Luz parcels to reach the P. Ortiz parcel.

Alternative F would require construction of a new bridge with 6,250 square feet of bridge deck and a 5-foot clearance under the bridge across Calabasa Arroyo within Road Segment 10 (B. Walbridge, personal communication 16 June 2003).



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

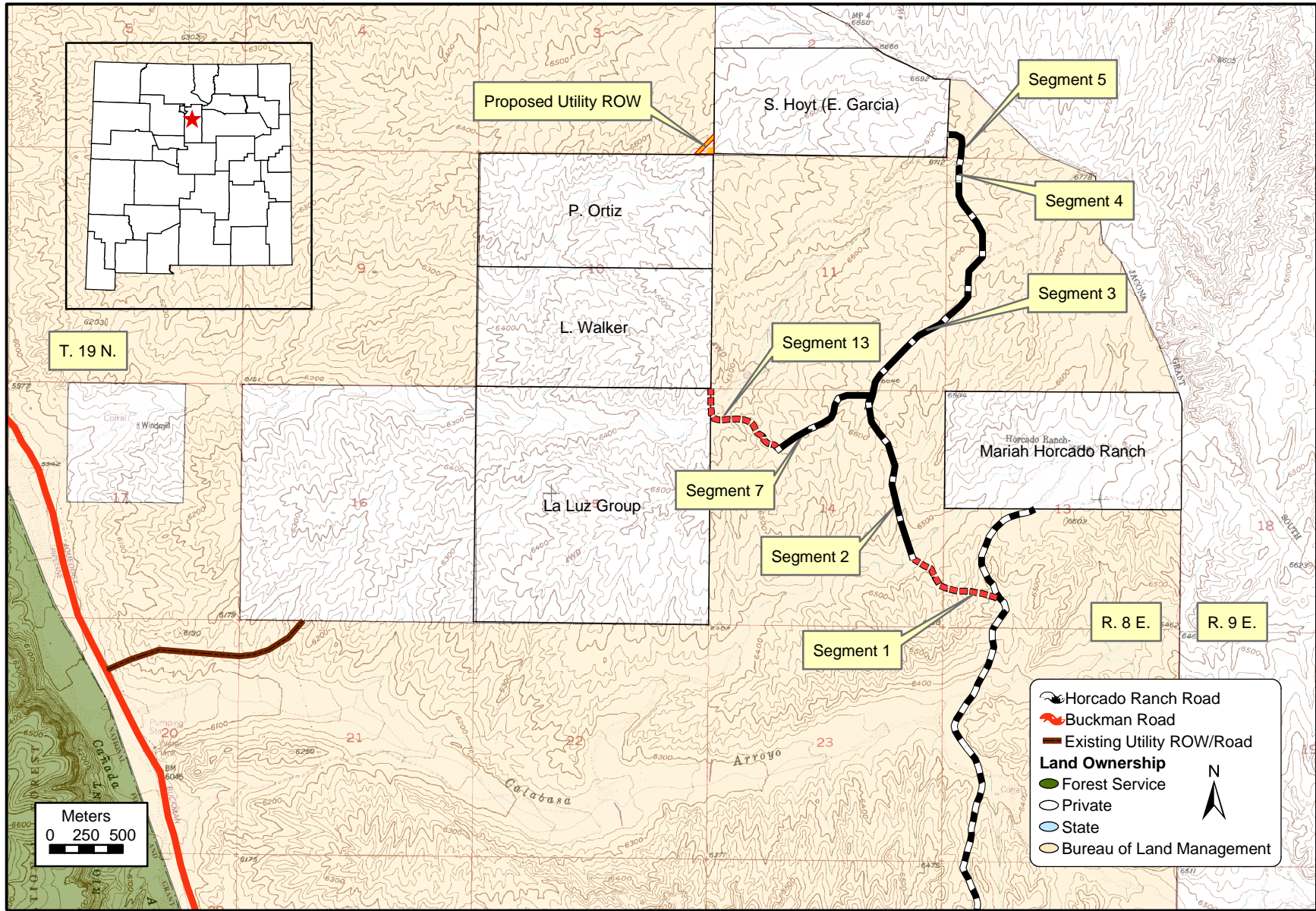
Figure 2.8. Alternative F.

2.6.7 Alternative G

Alternative G would build and improve 3.51 miles of 24-foot-wide dirt road across BLM lands in Sections 1, 11, 12, 13, and 14 of Township 18 North, Range 8 East (Figure 2.9). In total, construction of Alternative G would include approximately 17.7 acres of new construction term disturbance. New roadway impacts would cover approximately 6.4 acres (Table 2.1).

Alternative G would provide access from Horcado Ranch Road and comprise Road Segments 1, 2, 3, 4, 5, and 13 and part of Segment 7. Road Segment 1 is the southernmost 0.43 mile of road. Road would be built across a ridge on previously undisturbed land to provide new access from Horcado Ranch Road. Where the road would cross the ridge, a 100-foot-wide right-of-way would be required for about 210 feet of the alignment to accommodate new road cuts. Road Segment 13 would be new road construction built from a point near the center of Road Segment 7 to the section corner of Sections 10 and 15 and would include a cement box culvert to cross an arroyo and associated floodplain. The rest of the segments would be on existing two-tracks. Access to the Hoyt parcel (Section 2) would be via Road Segments 1, 2, 3, 4, and 5. The Walker Parcel (south half of Section 10) would be accessed via Road Segments 1, 2, and 13 and part of Segment 7. The Ortiz parcel (north half of Section 10) would not have direct access across BLM land. Right-of-way would have to be granted by Walker. The Ortiz parcel would be accessed via Road Segments 1, 2, part of 7, and 13 and 0.5 mile of private right-of-way on the Walker parcel. Access to the La Luz Group parcel (Section 15) would be across Road Segments 1, 2, part of 7, and 13.

Right-of-way under Alternative G would total 3.51 miles, including 0.89 mile of new road construction (Road Segments 1 and 13) and 2.62 miles of rehabilitated existing road (Road Segments 2, 3, 4, and 5 and the northeast portion of Segment 7). The proposed right-of-way under Alternative G is 50 feet wide for all of Road Segments 2, 3, 4, and 5, the included portion of Segment 7, and Segment 13, and for 0.39 mile of Segment 1. The remaining 0.04 mile (210 feet) of Segment 1 would be 100 feet wide to accommodate a wider road cut where the road would cross a ridge top.



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

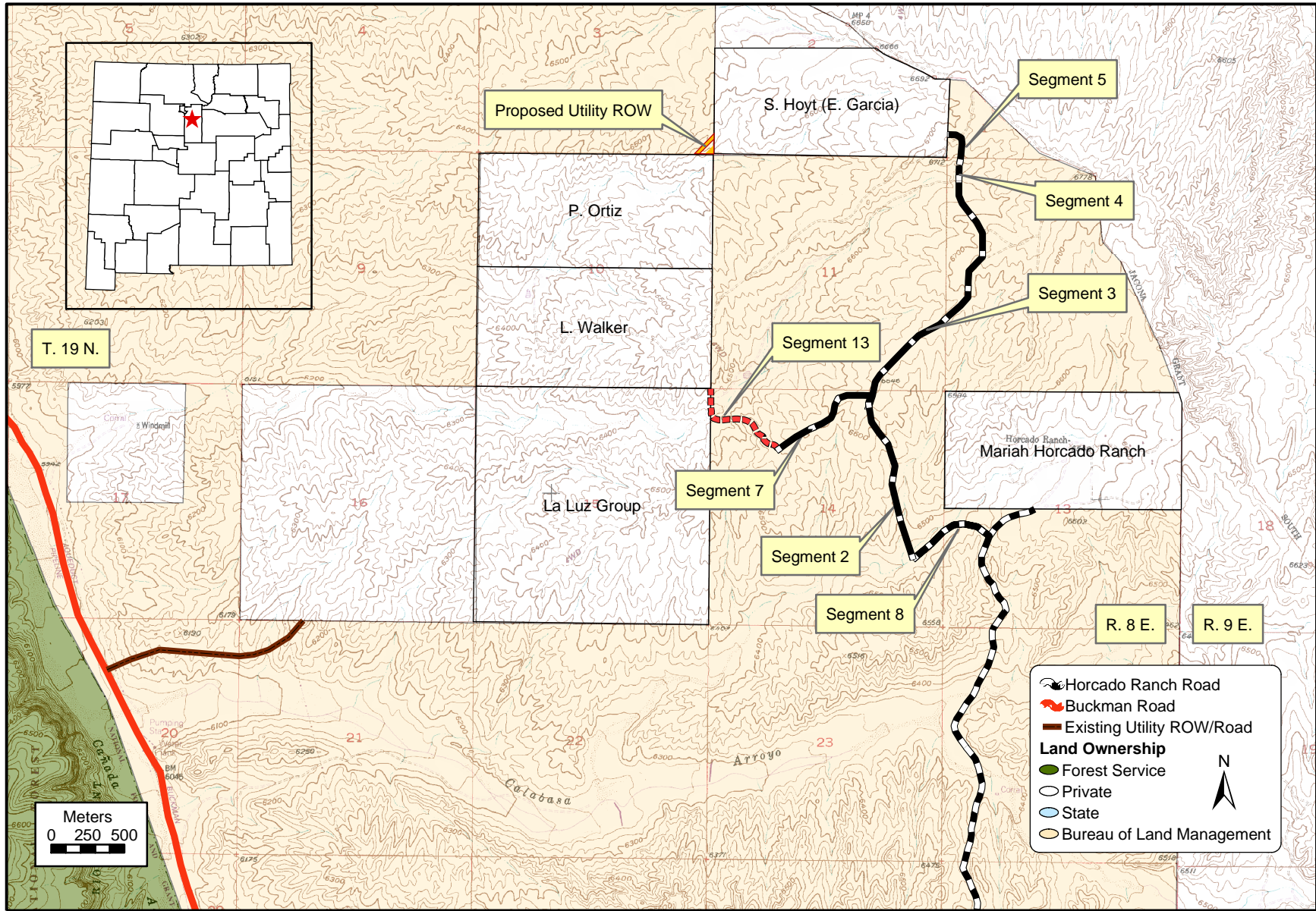
Figure 2.9. Alternative G.

2.6.8 Alternative H

Alternative H would build and improve 3.47 miles of 24-foot-wide dirt roads across BLM lands in Sections 1, 11, 12, 13, and 14 of Township 18 North, Range 8 East (Figure 2.10). In total, building of Alternative H would include approximately 16.7 acres of new construction term disturbance. New roadway impacts would cover approximately 5.7 acres (Table 2.1).

Alternative H would provide access from Horcado Ranch Road and comprise Road Segments 2, 3, 4, 5, 8, and 13 and part of Segment 7. Road Segment 13 would be new road construction built from a point near the center of Road Segment 7 to the section corner of Sections 10 and 15 and would include a cement box culvert to cross an arroyo and associated floodplain. The rest of the segments are on existing two-tracks. The Walker parcel (the south half of Section 10) would be accessed via Road Segments 8, 2, and 13 and the northeast part of Segment 7. The Ortiz parcel (the north half of Section 10) would not have direct access across BLM land. Right-of-way would have to be granted by Walker. The Ortiz parcel would be accessed via Road Segments 8, 2, and 13, the northeast part of Segment 7, and private right-of-way across the Walker parcel. Access to the La Luz Group parcel (Section 15) would be via Road Segments 8 and 2, the northeast portion of Segment 7, and Segment 13.

Right-of-way under Alternative H would total 3.01 miles of rehabilitated existing road (Segments 2, 3, 4, 5, and eastern half of 7) and 0.46 mile of new road on Segment 13. The proposed right-of-way under Alternative H is 50 feet wide for all of the road segments.



Source: BLM/USGS, 2003

SWCA Environmental Consultants, 2004

Figure 2.10. Alternative H.

2.6.9 Alternative I (No Action Alternative)

If the No Action Alternative is implemented, the current situation continues, with the BLM land under current management and use. Rights-of-way would not be authorized for the El Monte Roads Association. Informal two-track roads, without right-of-way, would continue to be used to access the four parcels of private land. Existing roads would not be improved, and new roads would not be built.

2.7 COST ESTIMATES OF ROAD BUILDING UNDER THE ACTION ALTERNATIVES

Cost estimates for building the roads under Alternatives A–H (Table 2.2) were received from four different sources. Walbridge and Associates provided a cost estimate for the bridge that would be needed to cross Calabasa Arroyo (6/16/03): the bridge would be 250 lineal feet long and 24 feet wide with 5-foot clearance above Calabasa Arroyo; the bridge decking would be 250 × 25 feet, or 6,250 square feet; the cost of the bridge is estimated at \$937,500.00. Blotter Construction estimated costs for road construction (1/12/03): the average cost of construction on existing roads would be \$210,400.00; the cost for construction of new roads is estimated at \$230,000/mile. Herbert Chavez, BLM engineer, estimated costs of road building at \$200,000/mile and estimated the cost of crossing the arroyo at Segment 12/13 at \$80,000.00 (personal communication, 14 March 2004).

The Louis Berger Group provided a cost/benefit comparison of the various road alternatives (5/3/04):

Road Segment 9 is technically undesirable because it is adjacent to a main drainage channel and crosses many local uphill drainages.

Road Segment 10 is technically undesirable because it would require a sizable drainage structure to cross Calabasa Arroyo.

Road Segment 13 is technically undesirable because it would require new construction and disturbance, a large concrete box culvert structure at the crossing of a major arroyo, estimated to cost between \$80,000 and \$100,000 (higher end if extra erosion control is needed). The crossing is downstream from a sizable earthen stock reservoir that may need an estimated \$100,000.00 in improvements to prevent breach.

The Berger Group analysis concluded that Alternatives A and C are the most technically feasible for construction. With the considerations above, the Louis Berger Group estimated average cost per mile for each alternative:

Alternative A - \$212,200.00/mile

Alternative B - \$260,400.00/mile Alternative C - \$210,400.00/mile

Alternative D - \$236,400.00/mile Alternative E - \$365,800.00/mile

Alternative F - \$423,600.00/mile

Alternative G - \$297,300.00/mile

Alternative H - \$298,300.00/mile

For purposes of Table 2.2, the Blotter Construction road cost estimates, in combination with the Calabasa Arroyo bridge cost estimate from Walbridge, the arroyo crossing on Segment 12/13 estimate from Herbert Chavez, and the \$100,000 cost to strengthen the earthen stock reservoir from the Louis Berger Group were combined to give an estimate of total costs for each alternative.

2.8 SUMMARY COMPARISON OF DISTURBANCES UNDER DIFFERENT ALTERNATIVES

In general, there are three comparisons to be made between the Proposed Action, the Action Alternatives, and the No Action Alternative. The highest-level comparison is between access from Horcado Ranch Road (Alternatives A–D, G, and H) and Buckman Road (Alternatives E and F) versus the No Action Alternative. Construction of Alternatives E and F would create more new temporary and permanent disturbance than construction of Alternatives A–D, G, or H. Alternative I (the No Action Alternative) would create no disturbance.

With Alternatives A and C, either new road could be constructed or an existing road could be used for access to Horcado Ranch Road (Segment 1 vs. Segment 8). Alternative C provides a different access from Horcado Ranch Road and uses an existing two-track road instead of building a new road. Construction of Alternative C would create less new temporary and permanent disturbance than construction of Alternative A (Table 2.1). Alternatives B, D, G, and H do not provide direct access to all four parcels of land and would require construction of about 0.5 mile of new road on the Walker land (south half of Section 10) to access the Ortiz property (north half of Section 10).

Alternatives B, D, G, and H provide a different access to Sections 10 and 15 than Alternatives A and C, using one spur road rather than two. Construction of Alternatives B, D, G, and H would create less new temporary and permanent disturbance than construction of Alternative A or C (Table 2.1). Alternatives A, B, and G construct new road to Horcado Ranch Road, whereas Alternatives C, D, and H use existing road. Alternatives G and H construct new road (Segment 13) from Segment 7 to the corner of Sections 10 and 15 and would require an additional 0.5 mile of new road construction on private land owned by Lillian Walker in the south half of Section 10 to access the land of Paul Ortiz in the north half of Section 10.

Table 2.2 Summary Comparison of Effects of Each Alternative

Issue and Evaluation Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G	Alternative H	Alternative I
Project Costs*	\$990,996.00	\$1,062,532.00	\$974,152.00	\$955,216.00	\$2,675,132.00	\$2,497,624.00	\$1,023,704.00	\$1,015,288.00	\$0.00
Cost and Access Analysis	Allows access to each of four parcels of private property while minimizing new impact. Includes new road construction at Segment 1.	Allows access across BLM lands to Hoyt family, La Luz Group, and Walker lands. Includes the cost of building new road at Segment 1 and across Walker's land to access the land of P. Ortiz.	Allows access to each of four parcels of private property while minimizing new impact. All road construction would be on existing roads.	Allows access across BLM lands to Hoyt family, La Luz Group, and Walker lands. Includes cost of constructing new road to access P. Ortiz lands across Walker lands.	Does not minimize cost impacts to families. Includes the cost of building a bridge across Calabasa Arroyo and new road at Segment 11.	Allows access across BLM lands to Hoyt family, La Luz Group, and Walker lands. Includes the cost of building a bridge across Calabasa Arroyo, dam stabilization and floodplain crossing for safety considerations at Segment 12, and the cost of building new road at Segment 11 and across Walker lands to access P. Ortiz lands.	Allows access across BLM lands to Hoyt family, La Luz Group, and Walker lands. Includes the cost of dam stabilization and floodplain crossing for safety considerations at Segment 13 and the cost of building new road at Segments 1 and 13 and on Walker lands to access the land of P. Ortiz.	Allows access across BLM lands to Hoyt family, La Luz Group, and Walker lands. Includes the cost of dam stabilization and floodplain crossing for safety considerations at Segment 13 and the cost of constructing new road at Segment 13 and on Walker lands to access the land of P. Ortiz.	Does not allow legal access to any of the private properties as required by BLM policy [BLM Manual 2800.06 (D)].
Total Project Miles	4.67	4.08	4.63	4.04	7.04	5.66	3.51	3.47	0
Existing Road Miles	4.24	3.65	4.63	4.04	6.33	4.56	2.62	3.01	0
New Road Miles	0.43	0.43	0	0	0.71	1.1	0.85	0.46	0
Construction Term Disturbance Acreage	22.4	19.7	21.3	18.6	37.8	34.3	17.7	16.7	0
Permanent Roadway Acreage	7.4	6.6	6.7	5.9	11.3	9.8	6.4	5.7	0
Number of Impacted Hills and Arroyos (Topography)	17	21	16	21	25	33	14	13	0
Soils Disturbed on Roadway Margins (acres)	22.4	19.7	21.3	18.6	37.8	34.3	17.7	16.7	0
Permanently Buried Soils (acres)	7.4	6.6	6.7	5.9	11.3	9.8	6.4	5.7	0
Total Footage of Arroyo Crossings	381	691	381	691	545	915	382	382	0
Floodplains and Wetlands	No floodplains mapped, no wetlands in project corridor.	No floodplains mapped, no wetlands in project corridor	No floodplains mapped, no wetlands in project corridor	No floodplains mapped, no wetlands in project corridor	Calabasa Arroyo and tributary floodplain mapped, no wetlands in project corridor.	Calabasa Arroyo and tributary, Canada Ancha tributary floodplain mapped, no wetlands in project corridor.	Canada Ancha tributary floodplain mapped, no wetlands in project corridor.	Canada Ancha tributary floodplain mapped, no wetlands in project corridor.	None

Table 2.2 Summary Comparison of Effects of Each Alternative, continued

Issue and Evaluation Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G	Alternative H	Alternative I
Project Costs*	\$990,996.00	\$1,062,532.00	\$974,152.00	\$955,216.00	\$2,675,132.00	\$2,497,624.00	\$1,023,704.00	\$1,015,288.00	\$0.00
Visual Resources	One homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	One homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	One homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	One homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	One homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	No homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	One homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	One homeowner can see road. No sensitive receptors along route. No change to VRM class or ROS.	None
Construction Term (days)	209	181	206	180	496	261	152	154	0
Dead Trees to Be Removed during Project Construction (Approximate Counts Summer 2003)	472	368	445	339	514	237	307	305	0
Maximum Number of Live Trees to Be Transplanted or Removed during Project Construction (Approximate Counts Summer 2003)	708	487	668	449	955	710	523	518	0
Piñon-Juniper Habitat Disturbance on Road Margins (acres)	20.16	9.85	19.17	20.16	20.16	20.16	13.1	12.5	0
Piñon-Juniper Habitat Disturbance in Roadways (acres)	6.66	3.3	6.03	2.95	10.17	6.86	4.8	4.3	0
Juniper Savanna Habitat Disturbance on Road Margins (acres)	2.24	9.85	2.13	9.3	3.78	10.3	4.6	4.2	0
Juniper Savanna Habitat Disturbance in Roadways (acres)	0.74	3.3	0.67	2.95	1.13	2.94	1.6	1.4	0
FWS Threatened and Endangered Species	no impact	no impact	no impact	no impact with mitigation measures in place	no impact with mitigation measures in place	no impact with mitigation measures in place	no impact with mitigation measures in place	no impact with mitigation measures in place	No change from current conditions.

Table 2.2 Summary Comparison of Effects of Each Alternative, continued

Issue and Evaluation Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G	Alternative H	Alternative I
Project Costs*	\$990, 996.00	\$1,062,532.00	\$974,152.00	\$955,216.00	\$2,675,132.00	\$2,497,624.00	\$1,023,704.00	\$1,015,288.00	\$0.00
Socioeconomics	Increases employment to construct 7.4 miles of road on BLM lands, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	Increases employment to construct 6.6 miles of road, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	Increases employment to construct 6.7 miles of road on BLM lands, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	Increases employment to construct 5.9 miles of road on BLM lands, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	Increases employment to construct 11.3 miles of road on BLM lands and a bridge across Calabasa Arroyo, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	Increases employment to construct 9.8 miles of road on BLM lands and a bridge across Calabasa Arroyo, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	Increases employment to construct 6.4 miles of road on BLM lands, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	Increases employment to construct 5.7 miles of road on BLM lands, tax revenue base for Santa Fe County, and economic security for private landowners served by new roads.	No change from current conditions.
Issue and Evaluation Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G	Alternative H	Alternative I
Land Use Conversion on Permanent Roads (acres)	7.4	6.6	6.7	5.9	11.3	9.8	6.4	5.7	0
Square Feet of Utilities to Serve Private Properties	400 (0.01 acre)	400 (0.01 acre)	400 (0.01 acre)	400 (0.01 acre)	400 (0.01 acre)	400 (0.01 acre)	400 (0.01 acre)	400 (0.01 acre)	0
Recreation, Solitude, and Remoteness	4.67 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	4.08 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	4.63 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	4.04 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	7.04 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	5.66 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	3.5 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	3.47 miles of road decrease remoteness and solitude. BLM designation as Semi Primitive would be compromised.	No change from current conditions.

Road building costs are based on Blotter Construction Company estimate of \$210,400/mile. Alternatives G and H road cost estimates include 0.5 mile across Walker land to reach P. Ortiz land. Alternatives E and F add \$1,000,000 for building a bridge across Arroyo Calabasa (Walbridge and Assoc. estimate). Alternatives E, F, G, and H add \$80,000 for crossing of floodplain with culverts and arroyo stabilization above and below road and \$100,000 for stabilization of earthen stock reservoir to prevent potential breach at Segments 12/13 (H. Chavez, BLM engineer, arroyo crossing estimate, Louis Berger Group earthen stock reservoir stabilization estimate).