

Title **Historic Transportation Routes
on the Pajarito Plateau**



Prepared for **Ecology Group
Environmental Stewardship Division
Los Alamos National Laboratory
(Subcontract 24493-001-05 AH)**

Prepared by **Dorothy Hoard**



Los Alamos, New Mexico 87545

Editing and Composition by Hector Hinojosa, Group IM-1

Cover illustration: Historic road north of Rendija Canyon.

An Affirmative Action/Equal Opportunity Employer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither The Regents of the University of California, the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by The Regents of the University of California, the United States Government, or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of The Regents of the University of California, the United States Government, or any agency thereof. The Los Alamos National Laboratory strongly supports a researcher's right to publish; therefore, the Laboratory as an institution does not endorse the viewpoint of a publication or guarantee its technical correctness.

Title **Historic Transportation Routes
on the Pajarito Plateau**

Prepared for **Ecology Group
Environmental Stewardship Division
Los Alamos National Laboratory
(Subcontract 24493-001-05 AH)**

Prepared by **Dorothy Hoard**



Los Alamos, New Mexico 87545

Contents

1.0 INTRODUCTION AND OVERVIEW	1
1.1 SETTING	1
1.2 EARLY SETTLEMENT	1
1.3 TRANSPORTATION PATTERNS	2
1.4 SETTLEMENT PATTERNS.....	3
2.0 TRANSPORTATION ON THE PAJARITO PLATEAU: 1742 TO 1900	4
2.1 MIERA’S MAPS	4
2.2 LAND GRANTS	4
2.3 THE SOLDIERS’ ROAD	5
2.4 LAND SURVEYS.....	6
2.5 WHEELER MAP	8
2.6 PERIPHERAL ROUTES OF THE PAJARITO PLATEAU	9
2.6.1 <i>Santa Clara Canyon</i>	9
2.6.2 <i>Garcia Canyon</i>	10
2.6.3 <i>Guaje Canyon</i>	11
2.6.4 <i>Beanfield Mesa</i>	12
2.6.5 <i>Bandelier National Monument</i>	12
2.7 PAJARITO HOMESTEADERS, 1887 TO 1900	12
3.0 TRANSPORTATION ROUTES ON THE PAJARITO PLATEAU: 1900 TO 1922	16
3.1 THE RAMÓN VIGIL GRANT.....	16
3.2 HENRY BUCKMAN	16
3.3 MARIANO OTERO.....	18
3.4 EDGAR LEE HEWETT	18
3.5 UNITED STATES FOREST SERVICE	19
3.6 HOMESTEADERS.....	20
3.6.1 <i>H.H. Brook</i>	20
3.6.2 <i>Anchor Ranch</i>	22
3.7 LAND SURVEYS: 1907–1916.....	22
4.0 TRANSPORTATION ROUTES ON THE PAJARITO PLATEAU: 1922 TO 1943	24
4.1 LOS ALAMOS RANCH SCHOOL ROADS	24
4.2 STATE ROAD 4	25
4.3 LAND SURVEYS.....	27
5.0 HISTORIC ROADS	29
5.1 RENDIJA (SENA) CANYON.....	30
5.1.1 <i>Rendija Canyon: Sportsmen’s Club Area</i>	31
5.1.2 <i>Rendija Canyon: Cemetery</i>	32
5.1.3 <i>Golf Course</i>	32
5.1.4 <i>Barranca Mesa</i>	33
5.2 BAYO CANYON	34
5.2.1 <i>Bayo Road</i>	35
5.2.2 <i>Gonzales Road</i>	36
5.2.3 <i>San Ildefonso Road</i>	36
5.2.4 <i>Lujan Roads</i>	37
5.3 PUEBLO CANYON.....	38
5.3.1 <i>North Road</i>	38
5.3.2 <i>Homestead Crossing</i>	39
5.4 LOS ALAMOS CANYON.....	39

5.4.1 Los Alamos Mesa	40
5.4.2 South Mesa	41
5.5 SANDIA CANYON	42
5.6 MORTANDAD CANYON.....	42
5.7 PAJARITO CANYON SYSTEM.....	43
5.7.1 Pajarito Canyon.....	45
5.7.2 Twomile Mesa	46
5.8 RAMÓN VIGIL GRANT	46
5.8.1 Pajarito Canyon.....	46
5.8.2 Water Canyon	47
EPILOGUE	48
ENDNOTES	49
APPENDIX I: CHRONOLOGY	55
APPENDIX II: CHARACTERISTICS OF HISTORIC AND HOMESTEAD ROADS.....	59
APPENDIX III: MAPS AND SURVEYORS NOTES	71
MAPS CITED	71
SURVEYORS’ NOTES CITED.....	81
APPENDIX IV: PHOTOGRAPHS OF HISTORIC AND HOMESTEAD ROADS.....	83
COLLECTION: LOS ALAMOS HISTORICAL MUSEUM, FULLER LODGE, LOS ALAMOS, NM.....	83
PHOTO ARCHIVES, MUSEUM OF NEW MEXICO, CHAVEZ LIBRARY, PALACE OF THE GOVERNORS.	84
LIBRARY OF CONGRESS (WWW.LOC.ORG, AMERICAN MEMORY SEARCH: BANDELIER)	84

Tables

Table 1. Homestead Patents on the Pajarito Plateau: 1887–1900	14
Table 2. Homestead Patents on the Pajarito Plateau: 1908–1922	21
Table 3. Surveys on the Pajarito Plateau: 1857–1938	30
Table 4. Homesteads Accessed through Rendija Canyon	31
Table 5. Homesteads Accessed through Bayo Canyon	35
Table 6. Homesteads Accessed through Los Alamos Canyon.....	40
Table 7. Homesteads Accessed from Pajarito Canyon and Mesas	45

1.0 Introduction and Overview

This report focuses on formation of the road network across the Pajarito Plateau, using a set of maps and surveyors' notes as primary references. One theme of the report is the development of cartographic knowledge of the complex terrain. A quality control investigation of surveyors' notes shows them to be quite accurate.¹ Unfortunately, not every surveyor felt it necessary to note cultural features such as roads. On the other hand, early maps were often wildly inaccurate. Some maps, intended for specific purposes, omit many established features. Inferences based on the maps are conservative; uncertainties are noted in the text.

This report does not attempt to be a general history of the plateau. Historical events mentioned in the text selectively pertain to road development.

Section 1 briefly places the subject in context. Sections 2 through 4 describe road development chronologically from 1758 to 1943. Section 5 describes historic roads on the plateau by location in relation to major canyons. Appendix I is a chronology of events related to route development on the Pajarito Plateau. Appendix II explains characteristics of historic and homestead roads. Appendix III provides maps and surveyors notes. Appendix IV lists locations of available photographs of historic and homestead roads. This author had no access for field inspections to the area lying between Los Alamos Canyon and State Road 4 south of Water Canyon.

1.1 Setting

The Pajarito Plateau occupies the eastern margin of the Jemez Mountains. The plateau, extending 25 miles from Clara Peak on the north to Cochiti Canyon on the south, is defined both by its location and by its composition as a consolidated volcanic ash, called Bandelier Rhyolite Tuff. Within a million years of its deposition from the adjacent Jemez Volcanic Pile, erosion of the soft tuff deposits resulted in a distinct landscape of level tablelands separated by steep-walled canyons. Four large canyons—Guaje, Pueblo, Los Alamos, and Frijoles—have cut the plateau into isolated mesas. To this day, these canyons present challenges to transportation and infrastructure routes.

Over the millennia following eruptive formation of the plateau, a vegetative cover developed that is typical of a 5,500- to 11,000-foot elevation range in the arid Southwest. Three distinct vegetation regimes—piñon-juniper woodlands, ponderosa pine forest, and mixed conifer forest—provided a wide range of resources in a limited geographical area.

1.2 Early Settlement

The combination of formidable terrain, easily workable bedrock, and diverse vegetation governed prehistoric settlement patterns on the plateau. Archaeological evidence indicates that no permanent settlement occurred before 1150 of the Common Era. By the mid 12th century, population pressures in the adjacent Rio Grande Valley encouraged puebloan migrants to settle on the plateau. Population peaked in the 15th century with the building of large pueblos, but then dwindled as prolonged drought and resource depletion forced the people back to the more

dependable water supplies of the valley. By 1600, the plateau once again had no permanent settlements.²

During their period of occupation, the pueblo people developed extensive networks of trails across the plateau, but none meet the status of roads. This report does not address prehistoric trails.

1.3 Transportation Patterns

Transportation routes across formidable landscapes typically are funneled into areas of least difficult access—mountain passes, canyon slopes, contour bypasses. The Pajarito Plateau has few such natural passageways. A sharp sierra lines its western edge, where mountain peaks rise 400 feet above the level mesas. Cliffs rise 1,000 feet above the Rio Grande along the eastern boundary; steep-walled canyons cut the plateau from west to east. This topography effectively blocks passage between the Rio Grande Valley, the Jemez Mountains communities, and the separate mesas of the plateau, creating islands of desirable land with challenging access.

Prehistoric trails were of little use to European settlers. Because the indigenous pueblo people had no beasts of burden or wheeled vehicles, they were not constrained by width and grade requirements. Extensive remains of prehistoric trail networks on the plateau indicate that the inhabitants chose the most direct routes to various destinations. They built trails, without switchbacks, directly up steep slopes and even included toehold ladders up the cliffs.³

The need for better trails, and then roads, followed Spanish explorations into Nuevo Mexico in 1540 and settlement excursions after 1595. Early Spanish maps of northern New Mexico show prehistoric pueblos and Hispanic towns along the Río Jemez, Río del Norte (Rio Grande), and Río Chama. Surrounding mountains are but sketchy suggestions. Even so, by 1758, the cartographers give names to the grasslands of the central Jemez Mountains, implying their growing economic importance.

Development continued with resumption of a land grant system after the 1693 Reconquest following the Pueblo Revolt of 1680. In 1742, the Spanish Crown approved land grants on the Pajarito Plateau.

Occupation of the Nuevo Mexico territories during the Mexican War of 1846–1848 brought the U.S. military to the middle Rio Grande Valley. Following the war, the U.S. Army inherited the duty of protecting settlements from marauding tribes, primarily Navajos in the Jemez area. The army established posts in Santa Fe and Abiquiu as staging areas for mountain forays along designated military roads.

In 1854, the U.S. Congress established the Office of Surveyor General to map the new territory. By 1857, when surveyors began laying out townships on the plateau, they recorded roads already in place. In 1873, as part of its mission to inventory and map U.S. acquisitions west of the Mississippi River, the Wheeler Expedition came through the northern New Mexico territory. Wheeler's regional map shows a network of routes radiating from Abiquiu across the northern Jemez highlands and into the Jemez grasslands. The map depicts three routes crossing the (unnamed) plateau along the eastern edge of the Jemez Mountains.

In 1862, the U.S. Congress enacted the Homestead Act that provided transfer of public land to private citizens. In 1880, railroads entered the Rio Grande Valley, bringing new settlers and opportunities for expanded commerce. When sheep grazing became profitable with this new access to eastern markets, herders found stock routes across the plateau. In 1887, settlers first filed for homestead entry on the Pajarito Plateau, with each homestead needing access by a passable wagon road. In 1898, lumberman Henry Buckman negotiated a contract to log on the southern plateau. Buckman's logging roads onto and across the plateau made access easier to the southern homesteads and to the mountain communities to the west. In 1905, all unclaimed land on the plateau was consolidated into the newly created Jemez Forest Preserve. In 1912, Congress first appropriated money for transportation to the renamed Jemez National Forest, and the agency issued its first map in 1913. By that time, all areas of the plateau had access roads.

1.4 Settlement Patterns

After 1540, Spanish settlers brought new resources—horses, sheep, and cattle—that changed life in the Southwest profoundly. Suddenly, travel times were shortened and transporting large quantities of goods and possessions became possible; the narrow, steep prehistoric trails were no longer adequate. In its efforts to encourage settlement in the colony, the Spanish government awarded grants of land to petitioners. Governors had the power to give land both to individuals for meritorious service to the Crown and to groups of citizens who agreed to establish communities. Land grants were an inexpensive way to pay for services and an effective inducement for populating remote lands.

Spanish explorations largely ignored the Pajarito Plateau, and Spanish settlement was perfunctory at best. The Crown established two pueblo grants adjacent to the plateau and allegedly approved four Hispanic land grants on the plateau itself. Of these, only one, the Rito de los Frijoles Grant, appears to have been occupied for any length of time. Equally uncertain is how much of the plateau had been granted to private interests during Spanish and Mexican rule. Grant boundaries were vague and often overlapping.⁴ In 1848, the Treaty of Guadalupe-Hidalgo, which ended the U.S.-Mexican War, obligated the U.S. to recognize privately owned land that Spain and Mexico had granted to former citizens. The Spanish system of poorly defined grant boundaries was common across the new territories obtained from Mexico. Therefore, the U.S. Government quickly put procedures in place to resolve land issues. The validity and locations of Hispanic land grants were necessary to determine which lands were free of prior claims. These the U.S. could declare to be public lands open to settlement by its own citizens.⁵

Despite establishment of the Office of Surveyor General in 1854 and surveying activities on the plateau beginning in 1857, settlers only began filing for homestead entry in 1887. By 1898, 11 families filed who eventually went to patent. Entries were slow at the turn of century when land was withdrawn for a national park and the national forests were established. Settlement resumed again between 1908 and 1922. Over the years, settlers and investors developed small subsistence farms, ranches, and a preparatory school for boys. The Homestead Era on the plateau ended abruptly in May of 1943, when the U.S. Government filed condemnation proceedings to acquire land for Project Y of the Manhattan Project to develop the atomic bomb.

2.0 Transportation on the Pajarito Plateau: 1742 to 1900

The sequence of roads built across the Pajarito Plateau can be traced through a series of early maps. The maps, sketchy and often wildly inaccurate, reflect the settlers' evolution of knowledge of the complex terrain. Cartographers ignored or misplaced prominent features such as large canyons even into the 20th century. The earliest maps from the 1700s largely ignore the plateau. Even so, maps and, starting in 1857, surveyors' notes enable one to track the development of roads across the plateau.

2.1 Miera's Maps

In 1595, the Spanish established, as their first capitol of the new territory, the village of San Gabriel at the confluence of the Río del Norte [Rio Grande] and Río Chama just northeast of the Pajarito Plateau. An early 1600s sketch map created by Spanish cartographer Enrique Martínez reveals the limited level of geographical knowledge at that time. Martínez' map shows a sketchy route connecting Mexico City with the drainage system of the Río del Norte. The map shows Cochiti, San Ildefonso, Santa Clara, and San Juan pueblos along the river valleys. It shows San Gabriel, residence of the Governor. The map depicts, in rudimentary fashion, the Sangre de Cristo Mountains and Chama and Jemez rivers. Martinez gives only a sketchy indication of the Jemez Mountains.⁶

Much of Spain's topographic knowledge gained during the 1700s resulted from exploratory expeditions and military campaigns. That knowledge was incorporated into a series of maps created by Don Bernardo de Miera y Pacheco in the mid 1700s for Governor Marín del Valle. Miera was a widely traveled soldier and merchant lured to New Mexico with ambitions to become an *alcalde mayor*. He peppers an elaborate 1758 map of the territory, extending from Sonora into Colorado, with communities along the rivers while leaving vast spaces empty of features. However, Miera depicts mountains west of *S^{ta} Clara* in which lies a *Valle de los Bacas* (Valley of the Cows). On his 1779 map entitled *Plano de la Provincia del Nuevo Mexico*, Miera depicts the Río del Norte as the central landscape feature. He shows *S^{ta} Feé Capital y Presidio*, but no San Gabriel; the *S^{ta} Cruz de la Cañada*, but no Española. He clarifies a large valley in the mountains west of the Río as *Valle de los Bacas*. Miera's *Plano* shows a network of trails or roads crossing river valleys and mountain passes throughout the *Provincia*. He shows only one route crossing the [unnamed] Jemez Mountains, passing over a mountain range parallel to the Río, through the *Valle de los Bacas*, then proceeding across badlands and out to the plains west of the mountains.⁷ These early maps imply that the grasslands of the Jemez valles were important to the livelihood of the settlers. The Pajarito Plateau lies strategically placed between the grasslands of the Jemez valles and the population centers of the Rio Grande Valley.

2.2 Land Grants

First European recognition of the resources of the Pajarito Plateau came in the mid 1700s. In 1742, Pedro Sánchez, an ex-soldier who resided in Santa Cruz de la Cañada near present-day Española, petitioned the Governor of Nuevo Mexico, Gaspar Domingo Mendoza, for a grant of

land in the heart of the plateau. Sánchez received title to his grant that same year. He built a house and corrals on the plateau and used the grant for grazing for a time, but kept his residence in Santa Cruz. Over the years, the family passed down title to successive heirs as undivided shares.

By 1851, eleven Sánchez heirs claimed joint ownership. One of these, Antonio Sánchez, bought the interests of seven of these heirs, but the other three refused to sell. Antonio then sold his collective shares to José Ramón Vigil, a farmer and local official living near Santa Clara Pueblo. One of the duties of the newly established U.S. Office of Surveyor General was to validate land claims in the new territory. Therefore, in 1856, Ramón Vigil brought the old Sánchez Grant to the Office for confirmation, one of the first New Mexico claimants to do so under the new laws. In 1860, the U.S. Congress confirmed title as the Ramón Vigil Grant.

After he acquired the Sánchez Grant in 1851, Vigil built a cabin at the confluence of Pueblo and Los Alamos canyons near the present junction of State Roads 502 and 4. No mention is made of a road to Ramón's cabin, but various documents imply a route nearby.

Twentieth century historians have questioned the legality of the grant. Among the papers Vigil presented to the Office of Surveyor General was the alleged original document for the Sánchez land grant. This document was long missing from the records of the Office of the Surveyor General. Not until 1990s did Historian Marjorie Bell Chambers track down Vigil's grant papers and prove conclusively that they were forged. Land grant scholar Malcolm Ebright speculates that Ramón Vigil probably forged the document himself. Ebright reasons that Pedro Sánchez apparently had abandoned the grant within a few years of acquiring it, and the governor had revoked the claim, marking the original document to that effect. When Vigil needed a clean copy of the grant, he copied the old grant without adding the notice of abandonment.

However, the grant actually had existed. Local residents and Sánchez heirs always considered the grant valid, and it was named in a 1763 lawsuit brought by San Ildefonso Pueblo against settlers for trespassing on Pueblo land.⁸

2.3 The Soldiers' Road

Following conquest in 1848, the U.S. Army quickly established military posts to stabilize its new territory. As part of its mission, the Army identified military routes across the territory. At least one route crossed the Pajarito Plateau to link Fort Marcy in Santa Fe with the Valle Grande in the Jemez Mountains. Although the Army has no record of building this road, a road apparently existed. In 1851, in the midst of a prolonged drought, entrepreneurs Robert Nesbitt and Hiram Parker contracted with the Army to transport hay from the high-country Jemez grasslands to feed Army stock at Fort Marcy. The contractors “for that purpose purchased of Mr. Tully a train of mule wagons.” On the rainy night of July 2, 1851, Navajos attacked the hay camp in the Valle Grande. Nesbitt wrote that the raiders drove off his 70 mules, among other stock, and appealed to the Army for relief. In his report on the incident, First Lieut. B.H. Robinson stated that 49 animals were stolen, of which five were recovered.⁹ Nesbitt's reference to mule wagons implies that he transported along a wagon road. Early surveyors soon noted a road in Cañon de Valle crossing over the mountains.

In the mid 1800s, the government carried out a concerted campaign to subdue marauding Navajo bands, which raided and pillaged as far east as the Rio Grande. To protect the Jemez Mountains, the Army established a military outpost at the village of Abiquiu on the Chama River. An 1876 map shows three routes across the Pajarito Plateau, one in Santa Clara Canyon and two others across amorphous terrain to the south. The map shows a well-developed network of roads over the highlands of the northern Jemez leading from Abiquiu to the valleys grasslands. The map also shows that the basic network of roads connecting the grasslands themselves was established by 1876.

2.4 Land Surveys

Before 1785, states of the Union measured land by metes and bounds, relying on natural landscape features to establish legal boundaries. Faced with a rapidly expanding country, Congress approved the “Land Ordinance of 1785” that created a geometric system of measuring land. The standard unit was the *township*, a six-mile by six-mile area subdivided into 36 sections, each section being a mile on a side. Townships were laid across the land out in a grid measured from base coordinates established at convenient intervals, depending upon the state. Measurements north and south of the local baseline are called township lines; measurements east and west of a local principal meridian are called range lines. Legal land descriptions always name the relevant meridian and base lines.

The grid system worked well on the level prairies of the Midwest. Congress attempted to make the township/range system standard throughout the country. Established states refused, citing the expense involved in resurveys of all their metes and bounds lines. Instead, Congress decreed the township system be instigated in any territory yet to be acquired, creating the so-called *Federal-land states*.¹⁰

To comply with its obligations under the Treaty of Guadalupe-Hidalgo to honor land ownership established before acquisition of the New Mexico Territory, the U.S. moved quickly to impose its land management system. The New Mexico Surveyor General Legislation (1854 Act), in which Congress established the New Mexico Office of the Surveyor General, was the first of two statutes implementing property protection provisions of the Treaty of Guadalupe-Hidalgo. The responsibilities of the Office of the Surveyor General included surveying the townships of the new territory. Among the first duties of the Office was to establish base coordinates. Accordingly, the Office defined the New Mexico Baseline from which to measure township lines north and south and the New Mexico Principal Meridian from which to measure range lines east and west. These two imaginary lines intersect at the little town of San Acacia, about 12 miles north of Socorro.¹¹

The Pajarito Plateau occupies primarily Townships 17–21 north of the New Mexico Baseline and Ranges 6–7 east of the New Mexico Principal Meridian. Los Alamos National Laboratory and the community of Los Alamos occupy Township 19 North, Range 6 East (T19N, R6E). The township extends from Guaje Peak above the present Sportsmen’s Club on the north to Water Canyon parallel to State Road 4 on the south, and from Los Alamos Reservoir on the west to the East Road Industrial Park on the east. White Rock lies in T19N, R7E.

By law, only surveys by government-certified surveyors under direction of the Surveyor General are valid for legal purposes. The Surveyor General soon sent forth deputy surveyors to plat townships and sections. Designated government officials, originally the Surveyor General himself, officially certified the resulting surveys as valid for cadastral purposes.¹² Landowners hired private surveyors for their own purposes. Any disputes with government surveys had to be appealed to the Surveyor General, who, at his discretion, could order a resurvey. Surveys on the Pajarito Plateau began in 1857.

In 1857, Surveyor General William Pelham instructed Deputy Surveyor Reuben E. Clements to conduct the original survey of section lines in T19N, R6–7E south of Los Alamos Canyon. At the time of Clements' survey, the Ramón Vigil Grant had not been certified by Congress. Because valid grants were exempt from public entry, Clements' survey was the only one ever performed for the interior of the grant.

On his surveying transects south of [unnamed] Pajarito Canyon, Clements records two routes. As he follows the section lines, he repeatedly crosses a “waggon (sic) road” on the mesa south of the canyon. He also encounters the “south edge of Canon in which the trail passes up to the Valley west of the Mountain;” he is looking into Los Alamos Canyon. When he surveyed the T19N, R6E boundary along the foot of the mountains, he writes, “cross waggon road where it enters canyon to cross the mountain.” His survey notes indicate that he was in [unnamed] Cañon de Valle where it cuts the scarp at State Road 501. Although Clements never calls them by a name, these were pieces of the Soldiers' Road.

He also writes in his notes, “The land on this line 3rd rate except in the canons there 2nd rate. Some of the lands in canons have been cultivated. Timber pine and cedar.” In 1857, Surveyor Clements found the plateau a lonely place. In his survey of the section lines, Clements rather wistfully notes an “abandoned wigwam” near Water Canyon and “several old Indian Huts” near Pajarito Canyon as the few signs of human presence.¹³

Surveyor Clements' 1857 survey of the southern half of T19N, R6E predated its confirmation by Congress in 1860 as the Ramón Vigil Grant. To this day, his survey lines are not platted into sections on the maps, but he did leave us a bit of a legacy in mentioning the old roads.

Also in 1857, Deputy Surveyor John W. Garretson surveyed the eastern boundary and some section lines of T19N, R5E adjacent to the Los Alamos township. Garretson did not mention roads or other evidence of human presence.

In 1876, U.S. surveyors Daniel Sawyer and Stephen McElroy performed the official survey of the boundaries of the Ramón Vigil Grant as specified by the 1854 Act for confirmation of Hispanic land grants. The survey effectively halved the acreage claimed in Vigil's deeds by projecting the southern boundary of the San Ildefonso Pueblo Grant due west, putting the north boundary of the grant across Los Alamos and Pajarito canyons. McElroy established the west boundary at the foot of the mountains. McElroy's cryptic survey notes of the north boundary do not mention any roads; however, he observes “considerable live stock, herds of sheep and cattle.” He also claims, “there is at present no person living anywhere on the tract.”¹⁴

In 1890, U.S. Deputy Surveyor Daniel B. Merry surveyed the boundaries and section lines of the part of T19N, R6E north of the Ramón Vigil Grant. Merry's survey notes are cryptic and terse. He notes a few fenced and cultivated fields. Merry does not mention any trails; he notes crossing only two roads, one at [unnamed] Cañon de Valle, and one in Los Alamos Canyon. He mentions Los Alamos and Pueblo canyons by name, the first time these designations appear on the maps. In the closing summary of his survey, Merry notes:

This Township throughout is very Mountainous, being cut from West to East by a series of very deep canyons separated by high precipitous ridges. The Agricultural land being either on the high Mesas or the lower plateaus closer to the bottoms of the Arroyos. The Soil on the Mesas as a general rule is very poor, only 3rd rate while on the lower benches the soil is 1st or 2nd rate. The timber throughout the Western portion of the Township is of large growth and very good - while on the Eastern portion it is stunted and shrubby. There is very little living water in any of the cañons, the inhabitants depending mostly upon rains for their crops."¹⁵

In 1860, the U.S. Congress approved creation as a land grant of the Baca Location #1 as a trade in a grant dispute with the town of Las Vegas, NM. The history of the grant is long and complex. It is mentioned here only in the context of determining historic routes over the Sierra de los Valles from the Pajarito Plateau to the grasslands of the Jemez valles. Between 1876 and 1921, four cadastral boundary surveys were conducted. Surveyor General Henry M. Atkinson directed Daniel Sawyer and William McBroom to perform the initial survey as decreed by the 1854 Act. The two set forth on June 12, 1876, and claimed to have finished the entire 50 rugged miles in four days. Their survey was later challenged in court and rejected, but in his notes along the east boundary, Sawyer mentions crossing a trail in Santa Clara Canyon and a trail at his nine-mile corner below the pass from Cañon de Valle, location of the old 1851 Soldiers' Road.¹⁶ In 1893, in response to a lawsuit, *Whitney vs. Otero, Case No. 3632*, demanding partition of the Baca Location #1, the court forms a commission to examine the grant to determine equity to all owners. Among the examiners was U.S. Deputy Surveyor Walter G. Marmon. In the examiners report, Marmon includes a sketch map of the grant. He, too, shows an *old road* at Valle Pass.¹⁷

2.5 Wheeler Map

By the mid-1800s, the U.S. needed detailed knowledge of its new territories west of the Mississippi. In 1867, Congress authorized and funded expeditions to map and inventory its western lands. Accordingly, in 1869, the Army assigned 1st Lieut. George M. Wheeler, then an engineering officer on the staff of the Commanding General of the Army Department of California, to direct part of the massive undertaking in Nevada, Utah, and Colorado. In 1872, Wheeler's territory expanded to New Mexico, Arizona, Utah, southern California, and parts of Idaho. Wheeler's duties included producing detailed maps of each area he surveyed.

Between 1873 and 1875, a contingent of Wheeler's team was stationed in Santa Fe to explore, map, and inventory northern New Mexico. In 1876, the Army issued Map 69 covering the Santa Fe region. The map shows a network of routes connecting communities in the Rio Grande Valley, but not differentiating between roads and trails; however, it does give mileage for most roads in the valley, implying that Wheeler's crews measured them.

Wheeler's topography is grossly inaccurate, but it does show three routes across the Pajarito Plateau. A northern route from Santa Clara Pueblo proceeded west up Santa Clara Canyon into the valleys—into San Antonio Valley, Jemez Creek, and beyond. The map also shows roads converging on San Ildefonso Pueblo from the east. These meet at a *Ferry & Ford* to cross the Rio Grande. On the west side of the river, a branch leads south to the confluence of the Guaje and Los Alamos/Pueblo drainages. This route then divides into two routes crossing the Pajarito Plateau. One branch extends up *Chiquito* (probably Guaje) Canyon, where it climbs out of the canyon and crosses over the ridge into the San Antonio Valley.

The second branch is labeled *Jemez Trail*. This trail comes up onto the plateau along the present route of State Road 502 to the confluence of Pueblo and Los Alamos canyons. It then turns south as a precursor to State Road 4. The map becomes confused; it does not depict three separate canyons for Pueblo, Los Alamos, and Pajarito canyons. Instead, the map shows one large canyon making an unlikely bend before cutting back up into the sierra. In any event, the Wheeler map shows the Jemez Trail crossing a level mesa south of this canyon. At the sierra, the trail enters a different canyon, through which it climbs over a mountain pass into the Valle Grande. One can infer that Wheeler's *Jemez Trail* approximates the route of Surveyor Clements' *waggon road* in Cañon de Valle.

Like Surveyor Clements, Wheeler's map implies that the plateau was only sparsely populated, if at all, in 1876. It names a *Pueblo Viejo* along the route up to the plateau; most likely this is Otowi Ruin on the ridge between Pueblo and Bayo canyons. It also depicts *Agua Pa Spr.* on the south rim of the large unnamed canyon.¹⁸ Peggy Pond Church, who did extensive research on the history of the Pajarito Plateau, speculated that this place may be *Awap' a' i'*, *cattail place*, as described by John D. Harrington in his 1912 *Ethnobotany of the Tewa Indians*. Harrington's accompanying map implies that the spring is located at the head of Mortandad Canyon. Wheeler's map is too inaccurate to verify or refute that location. A 1936 Forest Service map shows *Agua Pa* at the head of Sandia Canyon, where a large cattail pond exists, now supported by runoff from the Technical Area (TA) 3 steam generating plant and sewage treatment outfall. Harrington comments, "There is a Mexican house at the place, but no Mexican name for it is known."¹⁹

2.6 Peripheral Routes of the Pajarito Plateau

This report primarily addresses historic roads of the Los Alamos town site and Los Alamos National Laboratory. The peripheral areas, Santa Clara Canyon, Garcia Canyon, Guaje Canyon, and Bandelier National Monument, are only briefly discussed here.

2.6.1 Santa Clara Canyon

In his *Ethnogeography of the Tewa Indians*, John P. Harrington, in his general discussion of trails, comments:

"Satisfactory knowledge about the ancient trails is surprisingly difficult to get. The chief ancient trails leading west [from the Rio Grande] were doubtless those which passed up the Santa Clara and Guaje Creeks and over the western mountains into the Jemez Country.

Santa Clara Canyon at the north end of the plateau appears to be an ancient route. It lies at the base of *Tsikumupinsh*, the Rio Grande Tewa's Sacred Mountain of the West.²⁰ "It provides the easiest access route to the grasslands of the valles and to settlements in San Diego Canyon, principally Jemez Pueblo. Santa Clara Canyon has a gentle grade throughout and is relatively wide, with long stretches of meadows. Only a low pass separates it from the headwaters of the Rito de los Indios that drains to the Valle San Antonio.

Before 1900, Santa Clara Canyon was public land with unrestricted access. In that year it was included in a wider temporary withdrawal from entry under consideration for a national park.²¹ In 1905, the canyon and surrounding lands were transferred to Santa Clara Pueblo by Presidential Executive Order. Previously, a public road traversed the canyon. Adolph Bandelier, traveling in July 1886 in Santa Clara Canyon writes, "We drove up to a mile above the sawmill, or 13 miles...." He describes the canyon and view to east and includes a sketch map of Puyé, showing a road. He writes, "Kirk went to the Valle (14 miles). He found no ruins on the road...." In the vicinity of Santa Clara Canyon, Bandelier mentions staying in camp at an old sawmill site. On July 18, Bandelier and a companion went up Santa Clara Canyon into the valles. "Stopped for the night at an empty log cabin, about two miles west of the 'Bordo.'"

Five years later, on September 10, 1891, Bandelier travels up Santa Clara Canyon again; he mentions the road in the lower part of the canyon that ended at a sawmill. But he describes his return down the upper reaches of the canyon in less than complimentary terms: "The descent to the east towards Santa Clara is through a long and rugged gorge, over a trail which beasts of burden must tread with caution."²² However, a year later, on July 2, 1887, an ad in the *Santa Fe Daily New Mexican* proclaimed:

Ho for the Sulphers

A good wagon road 44 miles long between Española and the famous Sulphers has just been completed by G.W. Bond & Bros. at Española and teams for passengers, tourists and health seekers can be furnished by the same firm. The road runs through a magnificent country covered with extensive spruce and pine forests.

In a related article, the newspaper elaborates: "There is good fishing along the route in Santa Clara, Santa Rosa, and San Antonio Creeks."²³

2.6.2 Garcia Canyon

The 1880s marked the beginning of the Homestead Era on the Pajarito Plateau. Homesteaders settled between Santa Clara Canyon and the Ramón Vigil Grant, the only area on the plateau subject to entry. After all these years, it is difficult to say who first tried to settle on the Pajarito Plateau. Tract book entries are sketchy and the U.S. Government did not save entry declarations unless the applicants received final patent. Judging from affidavits, several of the original applicants abandoned their dreams and sold their improvements—buildings, corrals, fences, water devices—to other families.

The first homesteader on the plateau to successfully go to patent was Juan Luis Garcia of Guachupangue just south of Española. Garcia applied for homestead entry in 1887 and received patent in 1892.²⁴ The family homesteaded the relatively accessible lands north of Los Alamos between Guaje and Santa Clara canyons. Judging from later maps dating from 1913, the Garcias

came up on the road in Santa Clara Canyon and over the gentle mesa into Garcia Canyon. They developed a lifestyle that became the norm for local Hispanic families. They kept their ancestral valley homes and moved their entire households twice a year between the Pajarito Plateau and the Rio Grande Valley. A few family members came early in the spring to plant wheat, and then returned to the valley until the weather was suitable for beans and other crops. They spent summers farming on the isolated plateau and winters in the milder climate of the valley near schools and businesses. The children attended school in the valley, often starting school late after helping with the autumn harvest and leaving school early to help with spring planting.

The Garcias were a large clan. Juan Luis Garcia's first wife had died, leaving him with eight children. He remarried and sired another six. Children from the first family established homesteads near him; eventually four families acquired land in the Garcia/Chupadero area under four separate homestead patents. They cleared the forests and planted beans, wheat, corn, and potatoes. The family traded or sold beans to their winter neighbors in Española. In addition to extensive farming fields, patriarch Juan Luis established a sawmill at Pine Springs at the head of his namesake Garcia Canyon. For approximately six years, until a fire destroyed it, the Garcia men worked at the mill, leaving the women and children to tend the crops and watch the animals.²⁵ In addition to the road in Garcia Canyon, the 1910s maps show forest roads in Chupadero and Sawyer canyons serving the Stone House Ranger Station on the mesa north of Pine Springs. A road to the mesa south of Chupadero Canyon accessing the homestead of José Garcia appears on the 1915 Forest map.

2.6.3 Guaje Canyon

In his *Ethnogeography of the Tewa Indians*, in addition to mentioning Guaje Canyon in the general discussion of trails, J.P. Harrington specifically mentions a trail in Guaje Canyon in his discussion of geographic names in his San Ildefonso Northwest Region. He first defines a "mountain peak of the great canyon;" his map implies reference to Cerro Rubio rather than Caballo Mountain. (Harrington did not travel widely in his area of interest. Most of his maps were drawn from descriptions by others.)

"A trail much used by Tewa people when going to Jemez leads up the Guaje Canyon, over this mountain and across the Valle Grande to Jemez."²⁶

An old trail, Laboratory of Anthropology number (LA) 135433 out of Guaje Canyon, crosses the ridge at the base of Cerro Rubio, and then descends into the Valle de los Posos. This trail shows no characteristics of puebloan trails, but was blazed long ago by the Forest Service; blazes on both Douglas fir and ponderosa pine have almost healed. On a U.S. Geological Survey (USGS) topographic map dated 1892 (surveyed 1887–1888, reprinted 1910) this trail appears only on the western side of the ridge, descending into the Valle de los Posos where it joins the road system through the grasslands.

The 1876 Wheeler map shows a trail part way up a *Chiquito* Canyon that appears to be lower Guaje Canyon. A USGS topographic map reissued in 1910 shows a reasonably accurate route up Guaje Canyon from the Rio Grande and into a presumed Rendija Canyon, although the mid Pajarito Plateau is virtually featureless on this map. The 1913 Forest Service map shows a road up the canyon only as far as Section 36 of T20N, R6E. By 1914, that road extended to the telephone line at the western edge of Section 35 along the much-used Pajarito Trail. There is no

indication on subsequent maps that a road extended past the telephone line until 1944, when the Manhattan Project constructed a water storage dam farther up the canyon.

In addition to housing a primitive route over the mountains, Guaje Canyon was an important resource area. It has extensive beaver dams at its headwaters that were undoubtedly exploited in the beaver pelt craze in the 1800s. A 1900 map promoting a national park on the plateau shows a trail out of Guaje (here called *Juege*) Canyon leading north to the extensive archaeological resources of Chupadero and Garcia canyons; the trail becomes a road on Forest maps by 1915. Above Rendija Canyon, Guaje Canyon is rugged with cliff-like walls. There is no indication that the upper canyon served as a route for roads during the Homestead Era.

2.6.4 Beanfield Mesa

A set of 1935 aerial photographs shows an agricultural field on an isolated mesa between Guaje and Rendija canyons west of Cabra Canyon. Federal land tract book records at the Bureau of Land Management in Santa Fe list a number of homestead entries that were later relinquished and never went to patent, but there is no record that anyone ever made entry in the northern half of Section 3, T19N, R6E.²⁷ The 1935 aerial photos show a well-kept field and on-site inspections imply that the mesa was farmed extensively; ponderosa forest had not reclaimed the mesa even into the 2000s. Local homesteaders may have leased the tract from the Forest Service during the Homestead Era. A line camp cabin, LA 12710, near the head of the mesa burned in the Cerro Grande Fire of 2000. The cabin had no stone foundation and was completely incinerated.

Field inspections located two roads accessing this mesa. One, LA 138539, tops out at approximately the mid-point of the west rim. The second road, LA 138530, climbs out at the head of the west canyon to the rim of the mesa at the base of the northern ridge.

2.6.5 Bandelier National Monument

Few roads ever accessed the area now included in Bandelier National Monument. In a map dated 1904, one of many of his proposed national park on the Pajarito Plateau, archaeologist Edgar Lee Hewett shows an *Old Navajo Trail* on Mesa del Rito south of Frijoles Canyon. He shows a loop trail to Stone Lions on the *Potrero de las Vacas* and in the *Cañon de la Questa Colorada* (Capulin Canyon). The Bandelier backcountry has innumerable trails crossing the mesas, but only one road. The road came from Cochiti Canyon around the mouth of Sanchez Canyon and up Capulin Canyon to the present ranger cabin at the base of the Pajarito Fault. The road was abandoned with the filling of Cochiti Lake in the 1970s. The Civilian Conservation Corps (CCC) built the road into Frijoles Canyon in 1935.

2.7 Pajarito Homesteaders, 1887 to 1900

The Homestead Act of 1862 created a mechanism to transfer public land to private ownership. President Lincoln was adamant that the act benefit ordinary citizens. The bill had been introduced several times before 1862; it only passed when southern congressmen, who favored large tracts of land for plantations, left Congress during the Civil War. Under the act, a homesteader could apply for entry, develop his parcel for agriculture uses, and apply for patent five years later. Homesteaders could also purchase the land at 25 cents per acre. The applicant could be either sex, at least 21 years of age unless he had served in the military, and could only

prove on one parcel in his lifetime. The maximum allowable homestead was 160 acres, deemed by Congress to be the largest acreage one family could manage.

Homesteaders settled the Pajarito Plateau. Later enterprises—working farms and ranches, a school for boys—evolved from lands acquired under the Homestead Act. A first task was to develop a road system to transport supplies, including such heavy items as barbed wire. Although they never declared road work among the improvements required under the Homestead Act, each family apparently was responsible for providing its own access. For the earliest settlers, there was little infrastructure to make the task easier. Undoubtedly, herders established stock trails across the Pajarito Plateau to the Jemez grasslands even before Miera's 1758 map depicted the Valle de los Bacas. The 1876 Wheeler map shows a *Jemez Trail* and a trail up *Chiquito* Canyon as routes across the mountains. If the Jemez Trail followed the route of the 1851 Soldiers' Road, it would have been of little use to homesteaders because it crossed the Ramón Vigil Grant, which was not open to homesteading. The *Chiquito* route up Guaje Canyon, however, may well have provided first access to Rendija Canyon and the golf course area, where various Gonzales families were among the first to go to patent.

For the twice-yearly migration between valley homes and plateau ranches, the homesteaders required roads wide enough to accommodate a wagon, with a grade gentle enough that a horse could pull that wagon. In spring, they hauled up seed and farm equipment in addition to household goods; in summer they hauled water to their homes and products to market. In autumn, they hauled household goods and the summer produce down the same roads to the winter homes. Workmanship on the roads was utilitarian but adequate to accommodate the traffic. Some roads seem built for exclusive use by a single family; there were few turnouts for passing on the steep canyon walls. These roads led to only one homestead or, at most, adjacent homesteads on the same mesa.

There was little permanent water on the mesas and few permanent springs in the surrounding canyons. Settlers were partly dependent on summer rainfall even for household water. Agricultural production depended on the afternoon thundershowers typical of the region. Hailstorms were frequent and could be destructive. Drought was common, particularly as the dust bowl years of the 1930s struck New Mexico. The homesteaders dug stock ponds and cisterns to catch rainwater. They built roads to springs some distance away, but also drew water from potholes in the ephemeral streambeds. They hauled water to their homes in barrels on wagons.²⁸ As late as 1917, tourist Grace Spradling wrote about her trek on foot across the plateau from Bandelier to Los Alamos Mesa:

I don't think I shall ever forget those lonesome roads and that lonesome country. Oh we saw machines occasionally and lumber wagons and also people hauling water. We found that many of the farmers around that part of the country hauled their water 6 and 10 miles for their ranches. I don't know what they farmed for I never saw but one fertile place in the community.²⁹

Between 1887 and 1900, 12 entrymen eventually went to patent (Table 1).

Table 1. Homestead Patents on the Pajarito Plateau: 1887–1900

Patentee	Date Filed	Date Patented	Acres	Section T19N, R6E	Location
Garcia, Juan Luis	03/30/1887	06/13/1892	160	23, 24 (T20N)	Garcia Canyon
Quintana, Benigno	11/23/1892	09/11/1894	160	17	Western Area
Gonzales, Pedro Gomez y	02/08/1893	10/04/1898	120	4	Golf Course
Romero, David	02/28/1893	07/20/1901	160	21, 22	TA-55, TA-35
Gonzales, Juan N.	03/06/1893	09/11/1894	120	4, 9	Golf Course
Duran, Efredn Gonzales de	10/24/1898	06/14/1904	160	17	South Mesa TA-3
Gomez, Donaciano	03/04/1899	04/18/1905	160	20	Twomile Mesa
Sanchez, Miguel	03/08/1899	09/28/1904	160	20, 21	TA-6 area
White, William Carpenter	03/18/1899	04/18/1905	160	8, 9	Western Area
Loomis, James S.	04/11/1899	05/08/1901	164	19, 30	TA-6 area
Gonzales, Severo	06/06/1899	02/07/1902	79	19, 29, 30	TA-6 area
Moses, William	06/01/1900	07/31/1903	40	19	TA-6 area

Interestingly, the homesteaders’ entry and patent applications indicate that much of the land in the area was clear of timber. At an elevation of 7,300 feet, firmly in the ponderosa ecosystem, one might expect forests to cover the mesas. Ponderosa seedlings rapidly recolonize bare soil. In their study of the botany of the Romero cabin, Foxx and Tierney speculate that prehistoric farmers first cleared the areas, citing evidence of garden plots and water- and soil-catchments, and that this use persisted into modern times.³⁰ Such mesa grasslands may also have been maintained by grazing. Northern New Mexico sustained heavy grazing following Spanish and U.S. occupation, especially in the mid-1800s. Sheep and cattle stock drives to the plateau could create access routes that could later be modified into roads, aiding infrastructure development.

In 1892, Benigno Quintana filed for 160 acres on the north side of Omega Bridge in what is now part of Western Area. His southern boundary was in Los Alamos Canyon, here 200 feet deep. In 1894, he was first to receive patent in T19N, R6E. Quintana built a house and fenced his fields with barbed wire. There is no record of how he brought his household goods and heavy wire to his homestead. One may presume he drove his wagon up the sandy floor of Los Alamos Canyon along the “trail that passes up to the valley west of the mountain” noted by Surveyor Clements in 1857. His most likely route out of the canyon was through the little side canyon now occupied by West Road. In 1899, William White, an Anglo, filed for land adjacent to Quintana’s homestead at the north end of Western Area around present-day Sandia Drive. One can reasonably presume that White used the same access to Los Alamos Mesa as the Quintana family.

In his 1890 survey of the section lines of T19N, R6E, Deputy Surveyor Daniel Merry noted several houses on the golf course mesas, but not until 1893 did Pedro Gomez y Gonzales and Juan N. Gonzales file for entry there. The most logical access route for the Gonzales families must have followed Wheeler’s *Chiquito* (Guaje) Canyon to Merry’s *Sena* Canyon, now Rendija Canyon. The canyon is passable, but narrow and rough, and would have needed extensive development work to accommodate a suitable wagon road. Abandoned stretches of road remain in the canyon, but none have the distinctive features of homestead roads.

Also in 1893, several homesteaders applied for entry south of Los Alamos Canyon. David Romero, a descendent of land grantee Pedro Sánchez, applied for 160 acres on South Mesa. In 1898, Juan Ignacio Duran filed entry application on South Mesa at present-day TA-3, the administrative facility at Los Alamos National Laboratory. Juan Ignacio died in 1899; it was his widow, Efren Gonzales de Duran, who received patent in June 1904. Like her neighbor David Romero, Efren was a descendent of Pedro Sánchez and a claimant to the Ramón Vigil Grant. She had three small children. The family only cultivated 10 of their hilly 160 acres, using the rest for pasture. Unlike her neighbors, Efren lived on the plateau year-round.

A flurry of filings occurred in 1899. Miguel Sánchez, Severo Gonzales, and Donaciano Gomez settled on land on the north boundary of the Ramón Vigil Grant, as did another of the first Anglos, James Loomis. In 1900, William Moses joined this cluster of homesteaders on the meadows around Pajarito Canyon. These homesteads are now within the Laboratory's explosives testing areas.

Access to South Mesa before 1900 seems somewhat problematic. Surveyor Clements' 1857 survey notes imply that a trail in Los Alamos Canyon climbed up to the mesa. Surveyor Merry's 1890 map depicts few roads, but does show a small fenced corral in the southwest quarter of Section 20 (Donaciano Gomez on Twomile Mesa).

The USGS issued a wildly inaccurate map dated 1892 (the legend states: surveyed 1887–8; reprinted 1910). The map shows the Soldiers' Road (as a trail) on the Ramón Vigil Grant south of Pajarito Canyon and the Cañon de Valle route over the mountains. It shows a short route onto South Mesa at the base of the mountains, approximating the present route of State Road 501. The map also shows a trail toward the east end of a named Pajarito Canyon that one could interpret as an incipient State Road 4 to Los Alamos Canyon. The USGS map shows only two routes up from the Rio Grande, both of them trails. One came from the railroad crossing at Otowi into a presumed Guaje Canyon; the other came up the cliffs of White Rock Canyon across the Rio from Cañada Ancha, soon to become Buckman Crossing.

By the turn of the 20th century, rudimentary roads or major trails must have served all sections of the Pajarito Plateau. Pre-1900 maps are too sketchy and inaccurate to pinpoint exact routes. It was left to later maps to clarify several of the earliest ones.

3.0 Transportation Routes on the Pajarito Plateau: 1900 to 1922

Between 1900 and 1922, settlers filed the remaining homestead entries for the Pajarito Plateau and established the bulk of the road network. Logging on the Ramón Vigil Grant required a robust road system and provided employment for many homesteaders.

3.1 The Ramón Vigil Grant

The history of the Pajarito Plateau is inexorably linked to the Pedro Sánchez Land Grant, later known as the Ramón Vigil Grant. The U.S. 1854 Act establishing the Office of Surveyor General stipulated that a grant be surveyed after its confirmation by the U.S. Congress. The boundaries of the Sánchez Grant that Vigil submitted read, “on the north by the lands of the Indians of the Pueblo of San Ildefonso, on the south by the lands of Captain Andres Montoya [Frijoles Canyon], on the east by the Rio Grande and on the west by the Sierra Madre.” As further proof of his ownership, Vigil also filed two deeds to the land with different boundaries, specifically naming the northern boundary as the *abrevadero* [watering place] of the Rio de los Guajes.

The 1876 Sawyer & McElroy survey, the official survey of the grant boundaries as specified by the 1854 Act, effectively halved the acreage claimed in Vigil's two deeds. Vigil, who had purchased the land in 1851, owned his eight-elevenths of the grant for 28 years. In 1879, he sold his shares to a local parish priest, Father Thomas of Aquinas Hayes. In 1882, Padre Hayes contested the 1876 survey, hiring private surveyors Thomas Gwyn and John Duval to retrace McElroy's lines. Gwyn and Duval could not find any monuments or markers from the original survey. Even so, Hayes lost his appeal and the boundaries remained fixed. In the end it mattered little to Hayes; in 1884, he sold the grant at a handsome profit to two eastern investors, Winfield Smith of Milwaukee and Edward Sheldon of Cleveland. Soon thereafter, in 1885, Sheldon sold his interest to George Fletcher of Detroit.³¹

3.2 Henry Buckman

With the arrival of George Fletcher, an aggressive entrepreneur, road building to the plateau accelerated. Fletcher and co-owner Winfield Smith were determined to recoup their considerable investment in the grant. First, they rented pasture to a Texas cattleman, William C. Bishop. For two years, Bishop brought his cattle to New Mexico for summer grazing. The long drive and poor pasture led him to terminate his contract. Then in 1898, the owners sold, for \$10,000, “all saw timber now standing...measure at the small end eight (8) inches and over...” to an Oregon lumberman named Henry Buckman.³² It was Buckman who reopened the southern Pajarito Plateau for vehicular traffic. Buckman logged aggressively. His sawmill, the Buckman Set, was the center of activity in the area and provided employment for local homesteaders.

Buckman was not one to divulge his business dealings, but the *Santa Fe Daily New Mexican*, in an article dated December 24, 1902, estimated that Buckman had shipped 36 million board feet of lumber out of the state. Whatever the true number, Buckman's crews hauled it all down his roads from the plateau to his lumberyards across the Rio Grande at the town of Buckman. The newspaper claimed he shipped his product to Denver, reaping great profits. The article slights his

expenses, which were impressive. Buckman built (or reconstructed) and maintained a bridge over the Rio Grande. He built (or rebuilt) a road up the 700-foot wall of White Rock Canyon and 11 miles over the mesas. He built his sawmill at the base of the mountains near Water Canyon (now S-Site) and employed a large crew. Buckman himself claimed that his expenses and the small body of timber on the grant precluded much profit; "...in fact, it had been turned down by about all the mill men in the county before I looked at it and bought. My idea was that I might get some timber from settlers around it who had proved up and I also put on some forest reserve script before this was made a forest reserve."³³

By 1902, Buckman had finished logging on the plateau and was ready to move. On December 15, 1902, the *New Mexican* reported that Buckman had sold his sawmill and machinery to investors who had purchased the Francisco Montes y Vigil Land Grant in the foothills of the Sangre de Cristo Mountains east of Velarde. On December 24, 1902, a short item appeared in the newspaper's gossip column.

"H.D. Crowhurst, who has been with H.S. Buckman in the lumber business for many years, is in the city and will leave for San Francisco to join Mr. Buckman, their work on the Ramón Vigil grant having been completed."³⁴

Buckman's lease payment to Smith and Fletcher precipitated a lawsuit. Buckman was not named in the suit and left New Mexico before the suit was settled in 1905. When Antonio Sánchez sold to Ramón Vigil in 1851, he had only acquired shares of eight of the eleven heirs. Both Vigil and successor owner Padre Hayes claimed to acknowledge the partial ownership status, but the Eastern investors Smith and Fletcher did not. Winfield Smith died in 1899 and by 1903, George Fletcher had died³⁵, but descendents of the Sánchez heirs sued the Smith and Fletcher estates for a share of the \$10,000 Buckman timber lease. Testimony during the trial reveals something about life on the plateau.

Transcripts from the lawsuit mention nearby homesteaders and a bit about road building. At the trial, James Loomis testified that he started working for Buckman in 1898 and put in roads that Loomis estimated were worth \$6,000. When asked if the roads had any permanent value, he commented that, "everybody uses them now; there is constant travel over them." Loomis replied that he employed the sons of David Romero: "they worked with pick and shovel, rolling rocks out of the road..." In his testimony, Romero, himself one of the dispossessed heirs, mentions his ranch north of the grant, referring to his homestead on South Mesa, for which he received patent in 1901. Loomis himself had applied for homestead entry near Pajarito Canyon in 1899.

Sánchez vs. Fletcher dragged on for five years. It was ultimately decided in favor of the defendants. Lawyer for the Sánchez plaintiffs was former New Mexico governor L. Bradford Prince. Prince's strategy was to show that the remaining heirs had taken an active part in managing the grant after the Smith purchase. Management activities by the heirs would imply that Smith and Fletcher recognized the Sánchez ownership status. Prince lost the suit because Fletcher was the only person who had paid property taxes on the grant since he and Smith acquired it.³⁶

In testimony for *Sánchez vs. Fletcher*, the Sánchez heirs talked at length about grazing on the grant in the latter part of the 19th century. The testimonies imply that livestock trails undoubtedly

kept many routes, including the old Soldiers' Road/Jemez Trail route, viable until 1898, when Buckman's road became the major route across the Pajarito Plateau. By 1900, the maps show his road from the river to the mountains, with offshoots north across Pajarito and Los Alamos canyons to the Los Alamos homesteads.

3.3 Mariano Otero

Buckman was not the only entrepreneur with an interest in crossing the plateau. At the turn of the century, Peña Blanca businessman Mariano Otero developed sulphur mining on his holding at Sulphur Springs in the heart of the Jemez Mountains. Otero wanted to ship his products to Santa Fe rather than down Cañon de San Diego to Bernalillo. On June 21, 1902, an article appeared in the *Santa Fe Daily New Mexican*:

A GOOD PROJECT

A Road from Santa Fe to the Sulphurs Should be Completed by all Means

S. S. McKibben, of the Sulphurs, is in Santa Fe, and on Monday will begin to call upon local business men for subscriptions to build a short piece of wagon road that will give Santa Fe good connection with the Sulphurs and all the trade of that region which now goes elsewhere. Hon. M. S. Otero has erected at the Sulphurs a small experimental mill to prepare the sulphur found in large quantities for market. If this experiment is successful a large mill will be erected, and the product hauled to Buckman's siding on the Denver and Rio Grande. But even without the development of this industry, the trade of that part of Bernalillo county is important and valuable. The entire distance is 46 miles, of which the business men of Santa Fe are asked to construct only 1 3/4 miles. Mr. Otero will construct the 13 miles from the Sulphurs to the hill beyond Buckman's, the next 1 3/4 miles the people of Santa Fe are to construct, while from Buckman's to the river, 18 miles, and the railroad, an excellent road has been constructed, and from Buckman's to Santa Fe, 13 miles, the road is also in a fair condition.

The notice implies that the businessmen's stretch is in Cañon de Valle, which is 4.5 miles long. On June 23, 1902, under MINOR CITY TOPICS, the newspaper reported:

S. S. McKibben is meeting with fair success in soliciting subscriptions to build a good road over the gap in the road between Santa Fe and the Jemez Springs. The project is a good one and it will pay the businessmen to contribute liberally to the project. The road when complete would also be a good one to reach the cliff dwellings.³⁷

Otero had pieced together bits of the old Soldiers' Road, Wheeler's Jemez Trail, Buckman's Road, and old stock routes in the valleys to provide access into the Jemez Mountains. Subsequent maps indicate that Otero's 1902 road, together with the Santa Clara Canyon road, remained the main route over the mountains until the early 1920s.

3.4 Edgar Lee Hewett

In 1899, archaeologist Edgar Lee Hewett began advocating for a national park on the Pajarito Plateau. Hewett was then president of New Mexico Normal University (now New Mexico

Highlands University) and an influential archaeologist. As part of his various park proposals, Hewett generated a series of maps. The maps, some drafted by Kenneth M. Chapman, concentrate on (and exaggerate) archaeological resources. Chapman, known for his artistic abilities, was Hewett's archaeological protégé who specialized in prehistoric graphics, especially pictographs and petroglyphs.

In a 1900 map, Chapman shows a network of “passable wagon roads.” A main access route approximates the present route of State Road 502 up the Los Alamos/Pueblo Canyon drainage to their confluence at the present overpass. A branch goes north to Otowi Ruin in Pueblo Canyon, with a trail extension vaguely implying access into Bayo Canyon. Chapman shows a road south along the route of State Road 4 connecting to the Buckman Road out of White Rock Canyon. He depicts a road up Los Alamos Canyon that appears to come up onto the mesa to present-day TA-3 as a trail, and he shows the Soldiers’/Buckman road south of Pajarito Canyon leading to [Buckman's] saw mill. Chapman does not indicate any route over the mountains to the Valle Grande.

Hewett arrived on the Pajarito Plateau in 1896; he is credited with giving the plateau its name—*little bird*, a translation of the pueblo word *tsire*. In 1900, the U.S. General Land Office issued a temporary withdrawal of the plateau from public settlement pending resolution of Hewett's park proposal. By this time, sufficient landowners, commercial interests, and politicians opposed acquisition by the government for a national park. However, at the turn of the century, the area south of Frijoles Canyon was still tied up in land grant disputes and unencumbered by any development. After years of bitter controversy, Hewett saw the Frijoles area become a remnant of his dream in 1916. President Woodrow Wilson issued the proclamation establishing Bandelier National Monument under the Antiquities Act of 1906, which Hewett had authored.³⁸

3.5 United States Forest Service

Following a spate of homestead entries on the plateau in the 1890s, no further entry applications went to patent until 1908. This hiatus was a consequence of government manipulation of land ownership in New Mexico. The Pajarito Plateau was included in the General Land Office temporary withdrawal of 1900 pending national park designation. In November 1903, large tracts of land in northern New Mexico, covering most of Río Arriba and Sandoval counties, were withdrawn from public entry with the intent to establish the Río Jemez Forest Reserve. With that action, the Pajarito Plateau, with the exception of the Ramón Vigil Grant, was scheduled for incorporation into the national forest system. On October 12, 1905, the Jemez Forest Reserve was established by Presidential Proclamation. Also in 1905, Santa Clara Canyon and surrounding lands were transferred to Santa Clara Pueblo by Executive Order.³⁹ In 1915, the Forest Service merged the Jemez and the Pecos national forests to form the Santa Fe National Forest.

In 1906, Congress enacted a Forest Service modification of the Homestead Act. After that time, settlers on the Pajarito Plateau acquired their homestead patents under the Forest Act of June 11, 1906. Congress intended the act primarily to provide for entry of agricultural lands. Final patents and patents pending were grandfathered into the new system. Contrary to the Homestead Act of 1862, the Forest Act of 1906 allowed applicants to be away from their homestead claims for as long as five months of the year. This provision better recognized the realities of homestead life, which often required applicants to work at outside jobs to support their families. The annual

migration lifestyle of the Hispanic homesteaders of the Pajarito Plateau fit well into the Forest Act. Much of the new forest reserve remained open to homestead entry.

Although the Jemez Reserve was established in 1906, it was not until 1912 that the Forest Service appropriated money for roads. Forest administrators used part of the funds to create maps. These maps, together with maps accompanying Hewett's national park proposals, trace a primitive record of road development across the Pajarito Plateau between 1900 and 1922. By 1913 when the Forest Service began issuing annual maps, the basic road network in Los Alamos was largely in place.

3.6 Homesteaders

The Los Alamos settlement became home to a mix of local Hispanics and migrants drawn to the region from farther away for a variety of reasons. Some outsiders originally came to the tuberculosis sanatoria in Santa Fe for their health; some initially came to the silver mines in the southern Jemez Mountains near Bland; some came for job opportunities in public service or in the sawmills. In contrast to their Hispanic neighbors, these homesteaders lived on the plateau year-round.

Land applications were slow following Buckman's departure and the Forest Service takeover. After only two entries in 1908, there was a surge between 1911 and 1917, when 27 additional families filed applications (Table 2).⁴⁰

3.6.1 H.H. Brook

One of the health seekers was Harold Hemingway Brook, who came west from Illinois in search of a cure for his tuberculosis. In August 1908, Brook applied for homestead entry on Los Alamos Mesa. Brook was an agronomist; he established an experimental farm where he tested techniques for farming in high-altitude cold climates. To expand his holdings, he went into partnership with William Macwood Hopper, who filed entry for adjacent property that same month. Five years later, when he applied for patent, Brook was shocked to discover that the General Land Office temporary withdrawal of 1900 banned his entry from patent. He used his considerable political talents to forcing removal of the withdrawal and received patent in 1914. In 1913, Brook also applied for an additional homestead in his mother's name. Martha (Mattie) Brook was 52 years old when the patent was awarded in 1914. (The Homestead Act allowed an entryman to buy the land before the five-year entry period.) Mattie was a resident of Las Cruces, New Mexico, and, because of her delicate health, much preferred the warmer climate there. Although Brook built her a small house on her homestead, Mattie spent little time on the plateau. When the time came to prove her patent, she petitioned the land office to let her sign at the Las Cruces office.

Brook aggressively expanded the partnership's land holdings. William White sold his 160 acres in the high school area to Hopper in 1908; Brook immediately bought the land from Hopper in Mattie's name while his own patent was pending. After receiving his patent in 1914, Brook bought Hopper's holdings, then the adjacent Quintana homestead from Benigno's heirs in 1915. In 1917, Brook bought the White land from Mattie for one dollar. After all these dealings, Brook owned the whole of Los Alamos Mesa and the present Western Area.

Table 2. Homestead Patents on the Pajarito Plateau: 1908–1922

Patentee	Date Filed	Date Patented	Acres	Section T19N, R6E	Location
Brook, Harold H.	08/01/1908	03/06/1914	150	15	Los Alamos Mesa
Hopper, William M.	08/05/1908	03/06/1914	130	10, 15	Canyon Road
Quintana, David	07/19/1909	08/20/1913	151	10	North Mesa
Montoya, Jose Albino	01/05/1911	06/21/1915	90	22	Sigma Mesa
McDougall, Robert G.	01/05/1911	06/14/1914	108	22	Pajarito Rd bend
Gonzales, Estanislado	12/12/1911	02/18/1916	140	2,3,11	Barranca Mesa
Romero, Victor	02/25/1913	03/28/1916	15	21	TA-55
Gonzales, Federico	02/26/1913	05/04/1917	73	2	Rendija Canyon
Vigil, Miguel	03/25/1913	11/10/1916	63	15	Trailer Park
Brook, Martha	08/11/1913	11/28/1914	150	14	DP Road
Lujan, Martin	01/27/1914	06/17/1918	160	10	North Mesa
Martinez, Andres	09/08/1914	07/16/1920	63	1	Rendija Canyon
Garcia, Esequiel	12/24/1914	12/04/1922	58	23 (T20N)	Garcia Canyon
Martinez, Roman	04/22/1915	10/21/1919	30	3, 4	Guaje Pines Cemetery
Vigil, Fermin	05/07/1915	07/16/1920	60.31	19, 30	Mortandad Canyon
Archuleta, Lociado	06/10/1915	04/01/1921	53	24	Sandia Canyon
Garcia, Jose L.	11/27/1915	08/15/1922	36	25 (T20N)	Chupadero Canyon
Roybal, Noberto	07/31/1916	11/04/1920	125	2	Barranca Mesa
Gonzales, Donaciano	12/01/1916	09/20/1920	13	11	Barranca Mesa
Duran, Ramon	03/02/1917	08/15/1922	10	21	Pajarito Road
Connell, A.J.	01/21/1921	exchange	40	15, 16	Mesa Library area
Garcia, Adolfo	03/15/1921	12/08/1924	55	24 (T20N)	Garcia Canyon
Gonzales, Francisco			22.5	8	Urban Park
Archuleta, Hipolita					
Sánchez, Pedro					
Gomez, Pedro					
Guebara, Nicolas Ortiz					

The experimental farm that Brook established can be considered the first commercial operation on the plateau. The farm itself was not self-supporting, and Brook dabbled in other enterprises. He was a director of the Ramón Land and Lumber Company that established headquarters in Pajarito Canyon. Following the lumber company's bankruptcy, he had various dealings with Ashley Pond, who had purchased the Ramón Vigil Grant and established a private resort at the company's headquarters. In 1916, the two formed a partnership to convert Brook's farm into a school for boys. Brook was deeply in debt and his philosophy differed radically from Pond's. In 1917, he sold his holdings to Pond and moved to Las Cruces.⁴¹

Despite his tribulations, Brook and his farm were driving forces for development of the infrastructure of the Los Alamos community. Brook employed local residents, expediting development and upgrade of connecting routes between the mesas. He purchased large farm equipment which necessitated improving roads up onto Los Alamos Mesa.

3.6.2 Anchor Ranch

A second venture stimulated road development south of Los Alamos Canyon along the northern boundary of the Ramón Vigil Grant. Severo Gonzales and James Loomis filed for homestead entry in 1899. Loomis received patent in 1901 and Gonzales in 1902. (Entrymen had the option of paying to shorten the five-year period of proof.) In 1905, Gonzales sold his 79-acre homestead to Loomis for \$200. By 1914, Loomis was too ill to manage the combined 243 acres and sold to Claud Irwin for \$1,500. In 1918, Irwin sold to Alexander Ross, MD of New York State for \$3,250.⁴² Ross was an absentee landowner. He established Anchor Ranch and hired caretaker-managers to care for his retarded son, Alex, who lived at the ranch. His first managers, Francis Smithwick and wife Constance, developed the ranch into a viable enterprise, well-regarded by local residents. Commerce from the ranch improved the road system to the northern neighbors across Los Alamos and Pajarito canyons. By 1938, Ross had died; trustees for the estate controlled the property.

3.7 Land Surveys: 1907–1916

Following the initial land surveys of the 1800s, the Surveyor General ordered resurveys of the boundaries of the Baca Location #1 and the Ramón Vigil Grant. In addition, the Forest Service surveyed several homestead properties along the north boundary of the Ramón Vigil Grant in Sandia and Mortandad canyons.

In 1909, Mariano Otero's son and heir, Frederico, sold the Baca Location #1 to a group of Pennsylvania investors who formed the Redondo Development Corporation. The corporation quickly hired surveyor Lewis C. W. Shelton to perform a private survey of the property. Shelton's survey indicated that the legal boundaries established by Sawyer and McBroom's 1876 survey did not encompass the full acreage specified in the grant. The owners disputed the original Sawyer & McBroom survey and petitioned the Office of Surveyor General for a resurvey. In 1912, Surveyor General John W. March directed William B. Douglass and Hugh M. Neighbor to perform a restorative survey of the grant boundaries.

Although Douglass could not find all the mile-marker corners of the 12.5-mile square original survey, he surveyed the same lines as Sawyer & McBroom. Along the eastern boundary, he notes the "Road from Sulphur Springs to Española" in Santa Clara Canyon and the "Old wagon road to Santa Fe" in the Valle Grande below the pass of Cañon de Valle. Continuing south into the Frijoles drainage, Douglass found several trails, a telephone line, and a "Road, from Valle Grande to Buckman." In his general description of the survey, though, Douglass states, "The Española [Santa Clara Canyon] and Bernalillo routes are the most feasible for a wagon."

Convinced that both government surveys were grossly in error, Redondo Development contracted for a fence along surveyor Shelton's line; the General Land Office filed suit. In 1918, the Eighth Circuit Court of Appeals ruled in favor of Redondo Development. Accordingly, Surveyor General Manuel Sanchez ordered a second resurvey. Cadastral Engineers Wendell V. Hall and Charles Devendorf conducted an Independent Resurvey of the east boundary in 1920. They found the previous surveys to be approximately one-half mile west of the true line. Their survey established the boundaries to enclose the proper acreage as legally defined. Along the new boundary line in 1920, they noted a "Scarcely used road from Española to Cuba..." in Santa

Clara Canyon. At the 9.5-mile corner they find an "Abandoned old road..." at the pass at the head of Cañon de Valle, the old Soldiers'/Otero Road. Crossing over the ridge into the upper Frijoles drainage, the surveyors found the "Road from Buckman...", crossing it three times within 19 chains.⁴³

4.0 Transportation Routes on the Pajarito Plateau: 1922 to 1943

The last of the original homesteaders, Adolfo Garcia, filed for land near his family enclave north of Guaje Canyon in 1921. That same year, A.J. Connell traded 40 homestead acres in Santa Fe County for the land in Sections 15 and 16, where Mesa Public Library now sits. By then, homesteaders had claimed all the habitable land on the mesas. Because much of the Pajarito land was rugged and unfarmable, the settlers had picked every homestead acre carefully. Their patents typically covered irregularly shaped plots limited to arable land on the level mesas. They cleared the land for dry farming, where they grew corn, beans, peas, truck crops, wheat, and other cereal grains. They kept livestock; many had grazing allotments on nearby Forest Service land or rented pasture on the Ramón Vigil Grant.⁴⁴

By 1920, contemporary maps show a network of roads serving all areas of the plateau. There remained two roads to complete the system. One was an all-weather road to the Los Alamos Ranch School. The second was an improved road over the Jemez Mountains.

4.1 Los Alamos Ranch School Roads

In 1916, H.H. Brook sold his holdings on Los Alamos Mesa to Ashley Pond and partners. Pond established a school for boys, formed a board of directors, hired Albert J. Connell as director, and then left the Pajarito Plateau. The Los Alamos Ranch School enrolled its first student in 1918. Connell developed the school into a thriving enterprise as a preparatory school for boys from well-to-do families. His school became the driving economic force on the Pajarito Plateau. It employed local homesteaders and bought their produce and products. The school also brought motor vehicles; its needs soon made it apparent that the old roads accessing the mesa were inadequate. In early years, settlers used the road up Los Alamos Canyon as the main access route to Los Alamos Mesa. Brook's original road to his homestead came up the sandy canyon floor. The road crossed the stream several times, even though in winter the frozen stream made traveling difficult. At a small side canyon, now named DP Canyon, the road snaked up around the spur of DP Mesa and topped the plateau onto Mattie Brook's homestead. Mattie's wagon road became the initial access route for the students and their families. The school soon upgraded the section of the road on the canyon floor to accommodate automobiles. School personnel left cars in a shed at the bottom of the canyon and transferred people, supplies, luggage, etc. to horse-drawn wagons for the steep climb up the hill. Years later, Peggy Church, wife of Ranch School master Fermor Church, wrote:

"Ferm remembers that in the fall of 1921 the Otowi Hill road had just been finished. When winter was bad a garage was built at the foot of the shortcut trail and things and people went by wagon from there. The road used to go in from Buckman. Culebra Hill was only used to meet the train or go to Española."⁴⁵

The school continued to use Mattie's road. Sometime in the 1980s, Laurence Hitchcock, headmaster at the Ranch School, sent Peggy Pond Church a hand-drawn map of the Ranch School environs. Hitchcock apologizes for his confused state of memory after forty years, but his map is really quite adequate. Hitchcock notes:

On chronology - LSH correspondence files indicate Culebra Hill Road was being completed in the fall of 1920 during which time mail continued to come via Buckman, (horseback during truck breakdown in Oct) until at least 23 Dec '20; by March '21 sacks for Otowi were being picked up 3 times a week at Otowi switch- that is, Buckman Rd ceased to be important to LARS from 1921 on; Buckman Trail, however, continued to be used for some time after by horseback trips.

Hitchcock's map shows a "*short-cut*" former road and trail in the location of the Mattie Brook Road as a reasonable depiction of the route around the point of the mesa. He also shows student-built Breakneck Trail into Los Alamos Canyon on his map. The map shows the Buckman Trail connecting to the Los Alamos Canyon road at its junction with present State Road 4. The Buckman Trail continues eastward down the canyon north of *Duchess'* and Tsankawi Mesa, presumably into Sandia Canyon to the Rio Grande. A brief reconnaissance years ago could not locate remains of a trail in that area. Part of the route was on San Ildefonso Pueblo land.⁴⁶

By 1921, Los Alamos Ranch School contracted to have a road built directly up onto Los Alamos Mesa. The school had grown from just seven students to an enrollment of over twenty boys. It needed more reliable and comfortable automobile access for the students and, more importantly, for the parents. Engineer Guy Harrington shifted the new road into Pueblo Canyon, routing it up the bluff, from canyon bottom to mesa top, in six successive switchbacks. Otowi Hill Road was finished in time for the Ranch School's first graduation ceremony. A *Santa Fe New Mexican* reporter covering the graduation ceremony described the new road as "...the most spectacular piece of road building in New Mexico... half a dozen switchbacks leading up the face of the almost perpendicular cliffs...."⁴⁷ By 1925, the switchbacks had become the primary road to the Pajarito Plateau.

In 1935, the U.S. Soil Conservation Service and the U.S. Forest Service contracted for an aerial survey of the Pajarito Plateau and surrounding areas. The resulting aerial photographs, produced as stereo pairs with excellent resolution, provide incontrovertible proof of the existence and routes of roads prior to that time. The photos show two prominent roads onto Los Alamos Mesa. One is the Otowi Hill entrance road. The other approximates the present Trinity Drive/West Road route across Los Alamos Canyon. Other roads are faint and difficult to follow except in stereo view.

When the army selected Los Alamos Ranch School as the location of World War II's top-secret Project Y, the school's isolation and mesa-top location were both important attributes for a site that required secrecy and controlled access. However, the road up Otowi Hill, with its hairpin turns and 14 percent grade, rapidly became completely inadequate. Beginning in 1943, Manhattan Project contractors upgraded the road, destroying five of the six original switchbacks.

4.2 State Road 4

The goal for both the first and last episodes of road building across the Pajarito Plateau was for passage from the Rio Grande Valley over the Sierra de los Valles to the pastures of the high mountain valleys and on to communities in the Jemez Mountains. Beginning with Parker and Nesbitt's hay camp adventures on the Soldiers' Road in 1851 and Otero's sulphur wagons on

Buckman's Road in 1900, a better road across the mountains remained a necessary component of the state's transportation network.

The oldest maps are ambiguous as to the original route over the Sierra de los Valles to the Valle Grande. Although all early surveys show a location for the route, not until 1915 do maps identify Cañon de Valle as access to the lowest pass over the sierra. In his 1924 survey of section lines of T19N, R5E, U.S. Cadastral Engineer Wendell V. Hall explicitly states that he crosses the *Valle Grande trail (stock driveway)* in the bottom of [unnamed] canyon, which his measurements pinpoint as Cañon de Valle. In this survey of only one square-mile section, Hall encountered several trails, roads, a rail fence, and a wire fence.⁴⁸ By 1943, the Valle route disappears from the maps even as a trail. In reality, the road remained intact until parts were destroyed by flooding following the Cerro Grande Fire in 2000. The road has been closed to motorized traffic since the 1980s.

After the turn of the century, the Atchison, Topeka & Santa Fe Railroad began an aggressive program to double-track its rail lines through New Mexico.⁴⁹ In response to this market, several logging companies established mills on the Pajarito Plateau. The maps show T.J. Sawyer and McCurdy mills and sale areas at various places on the plateau into the 1920s. Their output was railroad ties. Products from the mills spurred development of the road network just as Buckman's Mill had done at the turn of the century.

It is difficult to trace the origins of State Road 4, the route that eventually replaced the Cañon de Valle road. Various sources contradict each other. Louis Shelton's reasonably credible 1908 map of the Baca Location No. 1 shows a road from the Valle Grande pointing toward the site of defunct Buckman's Sawmill. Between 1913 and 1933, Forest Service maps show a road gracefully (and improbably) swooping up the steep scarp to Sawyer's Mill above Water Canyon. Field inspection did not locate remains of any such road.

From the early days of the Spanish settlers, stock driveways undoubtedly were the first routes across the plateau and over the mountains. The State Road 4 route, though steeper and longer than Valle Pass, had an important advantage for moving livestock: springs in Water Canyon, American Springs, Apache Spring, and a spring in the north branch of Frijoles Canyon. The 1906 Forest Service telephone line also crossed the mountains here en route to the ranger station at Pines in Cochiti Canyon. Insulators still hang in many of the trees along its route.

Surveyor William B. Douglass provided the most authoritative map as part of his 1912 restorative survey of the boundaries of the Ramón Vigil Grant, although the map shows only the grant boundaries and some sketchy indications of the road network. He shows a road and arrow pointing toward Sawyer's Mill and Jemez Springs from *T. J. Sawyer's Lumber Yard* at the present Back Gate and shows a hairpin turn in the road as it climbs the scarp. That same year, however, Douglass' survey of the Baca Location No. 1 in T19N, R5E found several trails, but no road, on the ridges above Frijoles Canyon. However, the 1920 Devendorf/Hall boundary survey of the Baca Location No. 1 specifically mentions a "Road from Buckman..." on their corrected east boundary.

It appears that 1910s logger T.J. Sawyer first constructed a road from the plateau side. Various Forest maps show *Sawyers Mill*, and one of Edgar Hewett's various maps for a national park shows a *Sawyers Sale Area*.

Not until 1928 does the name *State Road 4* appear on maps issued by the newly created New Mexico Highway Department. That road went only to Bandelier National Monument. On its state-wide map issued in 1932, the department designated a conceptual State Road 4 gracefully sweeping across the Jemez Mountains. In 1935, the CCC established a camp near the present Back Gate at the foot of the mountain south of Water Canyon. The CCC personnel worked on the present road up the cliff, leaving their fine stonework as legacy of a vital program in U.S. history. The 1935 aerial photos show new scars on the cliff resulting from road building. The 1935 road cut off an older road, LA 138564, that climbed the scarp and crossed over to Apache Spring. This road, much of which is still intact, crossed upper Frijoles below the present highway and proceeded to the present Dome Road, Forest Road 289.

No road above Apache Springs appears on the 1935 aerial photographs. Big-game hunter for the New Mexico Game and Fish Department, Homer Pickens, who often traveled on horseback to remote ranches in the mountains, claimed that the road ended at Apache Springs when he worked in the Los Alamos area in the 1930s. Maps before 1936 depict the route as a secondary road.⁵⁰ It wasn't until the late 1950s that the state began paving the road as a real highway. Long-time Los Alamos residents still tell tales of driving over the road prior to paving. They recalled each trip by the number of tires destroyed.

4.3 Land Surveys

The Public Survey Office commissioned more dependent resurveys on the Pajarito Plateau and vicinity between 1922 and 1943. These surveys verified or corrected previous survey lines. The eastern slope of the Sierra de los Valles, mostly in T19N, R5E, has never been fully surveyed. The land is so rugged that surveyors deemed it of dubious value. However, the boundaries given in Ramón Vigil's forged grant read ...the *Sierra Madre on the west*, which the U.S. courts ruled was the base of the mountain. The base of the mountain jogs west in T19N, R5E, Section 25; therefore, the grant boundary must also jog. In 1924, Surveyor General Miguel Sanchez sent Cadastral Engineer Wendell V. Hall to retrace the line set by William B. Douglass in 1912. In addition, Hall's orders included surveying the boundaries of Section 25 and a part of the boundary between R5E and R6E.

Hall finds the area more settled. He finds a fence along the range line. Traveling west between Sections 24 and 25, he encounters an old road on the broad bench 200 feet up the scarp. In the bottom of a 425-foot canyon he notes the *Valle Grande trail (stock driveway)*. Hall is in Cañon de Valle, although he doesn't name it. He does not find a road in Water Canyon, which he does name. In his general description of his surveyed lands, Hall notes, "no settler lives in this section which is, apparently, used for grazing purposes."

In 1925, the Office of Surveyor General was abolished; a Supervisor of Surveys replaced the surveyor general. In 1938, the supervisor directed Cadastral Engineer Charles W. Devendorf to perform a dependent resurvey of T19N, R6E, including parts of the west and north boundaries and section lines. Devendorf finds a settled community with infrastructure in place. In addition,

as he crosses the mesas and canyons, he notes old and abandoned roads. He encounters an *abandoned logging road* at the south rim of Los Alamos Canyon, now the Camp May Road. He notes the Ranch School dam under construction in Los Alamos Canyon. He finds another *Old logging road* at the north rim, now the Quemazon Trail.

Devendorf found no cultural features along the north boundary of T19N, R6E, but did note a spring in Section 4. This is Ojo La Jara, shown on Forest maps with a road leading to it. Field inspection found only a narrow trail carved into the tuff above the spring. The spring itself is covered with lush growth that hides anything that may remain of development during homestead times. A small stream still runs from the spring part way down the canyon. The road from Guaje Pines Cemetery to Guaje Canyon runs up the canyon west of the spring. Devendorf did not encounter such a road in 1938. Devendorf was not impressed with the resources along the boundaries. "Land, rough mountainous. Soil, gravelly and stony clay, 4th rate," he notes.⁵¹

5.0 Historic Roads

This section discusses roads in relation to specific areas on the Pajarito Plateau where homesteaders settled and eventually went to patent. It is difficult to say how much of each road already existed and which parts the families were obliged to build for themselves. No references have been found that imply cooperative building or maintenance of common roads by families occupying the same area, although it is reasonable to assume such work took place. This section also discusses access roads to the plateau and roads across the Ramón Vigil Grant.

All maps and surveyors' notes before 1899 imply that the main route from the Rio Grande to the 6,000-foot intermediate level of the plateau came up Culebra Hill (Totavi Station to the present State Roads 502/4 interchange), the route of the present State Road 502. Initially, wagons crossed the Rio Grande at a ford and ferry at San Ildefonso. After the Denver and Rio Grande Railroad came through in 1880, wheeled traffic came over the railroad bridge at Otowi Crossing until the state built a highway bridge in 1924.⁵²

Some references suggest that a road climbed the side of White Rock Canyon before Henry Buckman built his road in 1898 or 1899. This assumption seems to be based on the observations of a 1910s settler, Dick Boyd, who expressed this opinion in 1964 when he wrote a friend about the Valle Grande hay camp. Boyd was familiar with the area; he ran an auto stage between Santa Fe and the Pajarito Plateau. He writes that he first saw the old road in 1916:

If you will note from the top of Buckman hill you can see the old road made by the Army when the Missouri Volunteers were stationed at Ft Marcy. They had a hay camp at the Loma Soldado on the head of the creek in the Valle Grande. You can see the soldiers road was a good deal steeper than the Buckman road and was built up Pajarito Canyon and graded out on the Mesa below the Llano Largo and on up along side of Water Canyon on the mesa top and on over the mountain from the Water Canyon site. Where the road topped out on the rim of the Valle Grande was a wampus cat, equal to the Buckman hill stretch...⁵³

No references have been found yet to confirm or refute Boyd's memories concerning the Soldiers' Road at Buckman. The evidence disputes his contention that a road crossed the mountains near Water Canyon in that time frame, nor has a wampus cat been found on the rim of the Valles Caldera.

The Buckman Road up Mortandad Canyon onto the plateau was plagued by frequent bridge washouts on the Rio Grande. Nonetheless, the road continued to serve as a stock drive to the railroad yards at Buckman into the mid 1920s. A note in the August 1924 New Mexico Highway Journal comments that Federal forest highway funds will be used to upgrade seven miles of road between Culebra Hill and Pajarito Canyon. "The road will make Frijoles Canyon... accessible over the new bridge at San Ildefonso. This new route will eliminate Buckman Hill and Buckman Bridge, both of which are in very poor condition."⁵⁴ A 1925 National Park Service map shows the Buckman Road hatched with *Bridge Out* at the river. The map shows a stock driveway crossing the river at Otowi Crossing and swinging around east of Buckman Mesa to the

Buckman stock yards. The 1927 Forest Service map shows the Buckman Road as a secondary route; by 1929, the road disappears from the Forest maps.

The following sections rely heavily on land surveys in describing road development (Table 3).⁵⁵

Table 3. Surveys on the Pajarito Plateau: 1857–1938

DATE	LOCATION	PURPOSE	SURVEYOR
1857	T19N, R6E, south half	Boundary & section lines	Reuben E. Clements
1857	T19N, R5E	Section lines	John W. Garretson
1876	Ramón Vigil Grant	Boundary survey	Sawyer & McElroy
1876	Baca Location #1	Boundary survey	Sawyer & McBroom
1890	T19N, R6E	Boundary & section lines	Daniel Merry
1907	Baca Location #1	Survey of disputed boundary	Lewis Shelton
1911	Ramón Vigil Grant	Examination of Surveys	William B. Douglass
1912	Baca Location #1	Dependent Boundary Resurvey	Douglass & Neighbor
1913	Ramón Vigil Grant	Dependent Boundary Resurvey	William B. Douglass
1916	Mortandad Canyon	Homestead Survey, Archuleta	C.A. Long
1916	Rendija Canyon	Homestead Survey, Martinez	C.A. Long
1916	Sandia Canyon	Homestead Survey, Vigil	C.A. Long
1920	Baca Location #1	Independent Boundary Resurvey	Hall & Devendorf
1923	Sandia Canyon	Homestead Survey	Thomas Meyers
1924	T19N, R6E, T19N, R5E	Survey, Resurvey, Retracement	Wendell V. Hall
1927	T19N, R5E	East boundary & Section 25 lines	Wendell V. Hall
1927	T19N, R7E	West boundary & section lines	Wendell V. Hall
1938	T19N, R6E	Boundary & section lines	Charles Devendorf

5.1 Rendija (Sena) Canyon

Lower Rendija Canyon winds from the plateau down through loose sedimentary fill, the conglomerate layers of the Puyé Formation and the boulders and gravels of the Totavi Lentil, to its confluence with Guaje Canyon. The canyon walls are friable and easily eroded, rendering the wash rocky and filled with large boulders. Even so, constructing a substantial trail or road up the canyon was feasible even though a road would require considerable maintenance. Wheeler’s 1876 map implies a route existed in the canyon, as does the 1988 (1910) USGS map. Settlement patterns imply that Rendija Canyon was the most likely route onto the plateau for the earliest homesteaders between Rendija and Pueblo canyons (Table 4). Hewett’s turn-of-the-century propaganda maps for a national park do not show a road in Rendija Canyon, but do show a route north out of Guaje Canyon to the rich archaeological areas of the northern plateau. A road in the canyon was established by 1913 when the first Forest Service map was issued.

Table 4. Homesteads Accessed through Rendija Canyon

Entryman	Entry Date	Acres	Section	Location	Owner in 1943
Gonzales, Pedro Gomez y	02/08/1893	120	4	Golf Course	Elfego Gomez
Gonzales, Juan N.	03/06/1893	120	4, 9	Golf Course	O.O. Grant, A. & E. Montoya
Gonzales, Estanislado	12/12/1911	140	2, 3, 11	Barranca Mesa	Estanislado Gonzales
Gonzales, Federico	02/26/1913	73	2	Rendija Canyon	Federico Gonzales
Martinez, Andres	09/08/1914	63	1	Rendija Canyon	Jose & Fidel Serna
Roybal, Noberto	07/31/1916	125	2	Barranca Mesa	Noberto Roybal
Martinez, Roman	04/22/1915	30	3, 4	Guaje Pines Cemetery	Ottie Oman Grant
Gonzales, Francisco		22.5	8	Urban Park	Francisco Gonzales

5.1.1 Rendija Canyon: Sportsmen's Club Area

In his 1890 survey, Daniel Merry does not mention any road or development present in the broad bottomlands of Sena Canyon or on Barranca Mesa. Not until 1913 did Federico Gonzales apply for homestead entry on the canyon floor. The road in Sena Canyon directly served his homestead.

In 1916, Forest Surveyor C.A. Long surveyed Homestead Entry Survey No. 394. Applicant for listing was Andres Martinez, dated 1913 for Homestead Entry 021789 of 1914. The land is located in Section 1, T19N, R6E. As he surveys the boundary of the 62.25-acre claim, Long encounters wire and brush fences, plowed land, log house, pole shed, and a road. There is no water on the claim; water for domestic use and watering stock comes from a well in Rendija Canyon about a quarter mile south of the house. The nearest post office is at Buckman, 12 miles distant, reached by a fair wagon road. The nearest trading place is Española, about 20 miles distant. (Unfortunately, two pages of the survey are not on the fiche.)

The 1935 aerial photos imply that most of the road was in Rendija wash itself. The photos show ranch roads branching from the main road onto the adjacent bottomlands with roads skirting Federico's fields. In 1914, Andres Martinez applied for entry to land on the bluff north of lower Sena Canyon. (The name *Rendija* first appears on the 1918 Forest map.) Martinez sold to Fidel Serna in 1922. The 1935 aerial photos show a road from the canyon entering Serna's fields from the western end. Serna had two fields separated by a shallow drainage. The aerials and field inspection show an old road crossing the drainage.

In his 1938 survey of the subdivision lines of T19N, R6E, Charles Devendorf notes "Corner No. 1 of Forest Homestead Survey known as H.E.S No. 394" (Serna brothers in 1938), and an "Old road" four chains north of the main Rendija wash on the section 1/2 line. Along the section 2/3 line, Devendorf does not mention a road in Rendija wash. He does cross the four-wire fences and fields of Federico Gonzales.

The old maps imply that the earliest routes to Barranca Mesa also came up Rendija Canyon. The 1915 forest map shows a road, LA 138565, coming from Sena/Rendija Canyon that climbs the north wall of Barranca Mesa to the mesa's narrowest point near Dos Brazos. This road is

prominent on the 1935 aerials, where it skirts the farm fields of Federico Gonzales; Devendorf mentions a road angling northeast and southwest on the north wall of Barranca Mesa in 1938. A fence once lined the eastern side of the road on the canyon floor, where a few old posts still mark the route, and barbed wire is still wrapped around trees that also supported the fence. Tree bark has grown over and embedded the wire. Two trees beside the road in Rendija Canyon bear a Forest Service blaze—a square cut on top and a long vertical slash below. From the broad canyon floor, the road ascends the north wall of Barranca Mesa in a single steep pitch. This roadbed is wider than most homestead roads and has a significant bank cut not usually seen on homestead roads; the Army may have modified it after 1943 for use by security patrols around the perimeter of Project Y. This stretch of road now serves only as a hiking trail, but was previously open to motorized vehicles. The old road intersects Barranca Road at the small wooded park just west of the Loma del Escolar turnoff to Barranca School. Forest Service blazes survive on scrawny trees at the top of the road.

5.1.2 Rendija Canyon: Cemetery

Maps and the 1935 aerial photographs imply that a road came up Rendija wash past Federico Gonzales' fields, through the narrows north of Barranca Mesa to the dell near Guaje Pines Cemetery. Roman Martinez, who filed for homestead entry in 1915 and obtained patent in 1919, settled on what is now the cemetery. In 1925, Joe Martinez sold to Ramón Roybal, who sold to O.O. Grant in 1930 and settled farther south at the old McDougall place in 1934. Ottie Oman (Dot) Grant had migrated with his family from Colorado to the mining town of Bland in the southern Jemez Mountains. Dot drifted over the mountains to Los Alamos and became a third-order homesteader. Dot Grant was an aggressive settler; he bought out the homestead on golf course mesa that Juan N. Gonzales had patented in 1894 and also acquired grazing permits on Forest Service land north of his home. The Grant family raised crops and large flocks of chickens. They sold eggs, produce, and meat to the Ranch School and drove to Santa Fe to market their products. He also was a bounty hunter and was often called upon to eliminate predatory animals, such as mountain lions and bears.

In his 1938 survey of T19N, R6E, Charles Devendorf crossed cultivated fields, fences, and touched the corner of the Grant log house. He also noted the "Road to Grant's house, from Otowi post office...." His map shows two roads—one approximating Range Road and one angling directly toward the Woodland Road area and Conoco Hill.

From the cemetery dell, the 1913 Forest map shows one generic road connecting the golf course grasslands to Guaje Pines Cemetery. The 1915 Forest Service, subsequent maps, and the 1935 aerial photos show several roads branching south and west. All but one of these roads has been destroyed by subsequent development in the Woodland/Arizona and Ponderosa Estates areas, Range Road, Guaje Pines Cemetery, and the golf course itself. The surviving road, LA 89103, now called the Grant Road, skirts the west bluff of Barranca Mesa between the cemetery and the San Ildefonso/Diamond intersection. The road retains much of its original character and is listed on the New Mexico and National Registers of Historic Places.

5.1.3 Golf Course

The notebooks of Daniel Merry's 1890 surveys imply that most of the earliest settlements on the central Pajarito Plateau were on the mesa where the golf course is now located. On his survey of

the section lines across the grasslands, Merry encounters fenced, cultivated land. His axman, Pilar Gonzales, pointed out his own house to the surveyor. Merry notes the cabins of Juan Gonzales, Antonio Roybal, and Pedro Gomez [y Gonzales]. In 1893 the eventual patentees, Juan and Pedro Gonzales, were among the first Pajaritans to apply for homestead entry. Later maps show access to this enclave through Sena (Rendija) Canyon, although Merry's survey notes do not mention a road there.

The Forest maps imply that by 1915, the Rendija and Bayo routes may have been equally important access to the golf course area.

In his 1938 survey of T19N, R6E across the golf course area, Charles Devendorf found numerous fields, fences, roads, corrals, log cabins, an earth storage tank, a lane, "the house formerly of Pilar Gonzales..." and McCurdy's old sawmill site, although he doesn't name it as such.

5.1.4 Barranca Mesa

In his 1890 survey, Daniel Merry does not mention any development on Barranca Mesa. In 1938, Devendorf finds roads and fences on the mesa, and a vacant log cabin in the Barranca School area.

Barranca Mesa was settled by two valley families: Estanislado Gonzales and Noberto Roybal. Their dividing line was near the present location of Barranca School. As was the custom of the Hispanic residents in the Los Alamos area, both the Gonzales and Roybal families retained their residence in the valley near San Ildefonso, traveling to Barranca Mesa in March of each year and returning in November.

Gonzales files for homestead entry in 1911 on the western half of the mesa and received patent for 140 acres in 1916. His house was near present-day El Conejo. The family activities to prove on the patent were typical of homesteaders in the area. For his patent, Gonzales cleared 100 acres of his claim on which he grew corn, beans, rye, and wheat. Gonzales had approximately 10 acres of timber, but did not cut it before obtaining his homestead patent. He obtained the logs for his buildings from the discarded tops of trees that had originally been felled to make railroad ties. The Forest Service sold these tops, produced by local sawmills, to the settlers. Gonzales invested in modern farming equipment, including planters, cultivators, disks, and harrows. He kept a variety of livestock: milk cows, pigs, chickens, and horses.

Noberto Roybal filed for homestead entry for the eastern part of Barranca Mesa in 1916. Roybal's homestead was so isolated by steep canyon walls that his only access was through Gonzales lands. He was well connected with his neighbor; Roybal's wife was Gonzales' first cousin. To prove on his patent, Roybal built his home on the north side of his claim near the present intersection of Navajo/Barranca roads.

References indicate that the homesteaders used roads in Rendija and Bayo canyons to collect water, a never-ending chore. For domestic water, the family drew from a small spring on the mesa. In addition, they brought water from Guaje Canyon using mules to pull the heavy wagons. They also installed cisterns to store runoff water collected from their metal roofs. Children were

assigned the task of pulling dead mice out of the cisterns. The family boiled the water for everything, including laundry. The crops had to survive exclusively on summer rainfall.⁵⁶

5.2 Bayo Canyon

The 1876 Wheeler map depicts the *Jemez Trail* coming from San Ildefonso and the lowlands along the Rio Grande, then up the Los Alamos Canyon drainage along the route of present State Road 502. Turn-of-the-century maps show a route branching off this main road into Pueblo Canyon and crossing over a low pass into Bayo Canyon. Kenneth Chapman's 1900 archaeological map for Edgar Hewett's proposed Pajarito Park shows a road to the ruin of *Otowe*. Here, Chapman's road becomes a trail, ending in an undefined area on the map. In reality, upper Bayo Canyon becomes a narrow slot, forcing any trail or road onto the canyon sides.

Subsequent Forest maps correctly show the head of Bayo Canyon at the low pass at the present roundabout at the Diamond Drive/San Ildefonso Road intersection. They all show a road along the Bayo drainage, but differ as to whether the road was north or south of the wash. Not until 1932, in a topographic map issued by the National Park Service, are two roads correctly shown in Bayo Canyon.⁵⁷

In his 1938 survey of T19N, R6E, Charles Devendorf finds a road in Bayo Canyon at the eastern township boundary; in working his way west along the subdivision lines, he encounters it again at section lines 11/12. In upper Bayo Canyon, he finds roads on both the north and south sides of the central drainage. At the low pass he crosses a number of roads approximating San Ildefonso Road, Grant Road LA 89103, and Range Road.

After the Bayo Road, LA 135428, was built, homesteaders had a choice of routes to Barranca Mesa and the golf course areas (Table 5). Subsequent maps and the 1935 aerial photos imply that the Bayo Route was preferred to Rendija Canyon.

Table 5. Homesteads Accessed through Bayo Canyon

Entryman	Entry Date	Acres	Section	Location	Owner in 1943
Gonzales, Pedro Gomez y	02/08/1893	120	4	Golf Course	Elfego Gomez
Gonzales, Juan N.	03/06/1893	120	4, 9	Golf Course	O.O. Grant, A. & E. Montoya
Quintana, David	07/19/1909	151	10	North Mesa	Manuel Lujan & Elfego Gomez
Gonzales, Estanislado	12/12/1911	140	2, 3, 11	Barranca Mesa	Estanislado Gonzales
Lujan, Martin	01/27/1914	160	10	North Mesa	Martin Lujan
Roybal, Noberto	07/31/1916	125	2	Barranca Mesa	Noberto Roybal
Martinez, Roman	04/22/1915	30	3, 4	Guaje Pines Cemetery	Ottie Oman Grant
Gonzales, Francisco		22.5	8	Urban Park	Francisco Gonzales

5.2.1 Bayo Road

There are two homestead roads in Bayo Canyon, one north of the drainage and one south along the slope of North Mesa. It is difficult to say from the maps which road was constructed first. However, the 1913 Forest map shows the road extending up (unnamed) Bayo Canyon to the west side of Section 3 and turning north into (unnamed) Rendija Canyon along the route of the Grant Road. Subsequent Forest maps usually show the Bayo Road located north of the drainage. A road up Bayo Canyon provided access to the plateau until 1943. The northern Bayo Road, LA 135428, which is wider, could sustain more traffic.

The roads serving the Gonzales and Roybal homesteads on Barranca Mesa are all steep, but the Bayo Road is the steepest. The road ascends from the canyon floor at a grade of 12 percent to 16 percent along the side of a small tributary to Bayo Canyon. The road is presently on bedrock. The builders had to excavate a large bank cut ranging to 30 feet or more. Continuously along the route, crude rock embankments shore up the outer edge of the road, implying that the present roadbed is in the original, as-built configuration. Ruts are common in the roadbed; some are characteristic of ruts cut by three-inch steel rims on wagon wheels. (This identification is problematical in that there are not two parallel ruts.) At the top of the grade, the road crosses a narrow neck of mesa into the main Bayo drainage. The road then extends west along the north side of Bayo Canyon beneath the rim of Barranca Mesa, traversing the level canyon floor on a bench along the Encantado spur. The bench is level with a sandy floor and makes a pleasant trail. The south edge of the bench is a precipitous cliff above the main drainage channel. Views in all directions are spectacular.

Family members claim that Estanislado Gonzales built the road from his Barranca Mesa homestead down into Bayo Canyon; they say that he worked on it in his spare time. It served for more than just the twice-yearly migration; the family sold beans off the hill, even as far as the mining communities at Cerrillos, a long, multi-day journey away. Noberto Roybal, too, used the road. Family tales tell of the time he was travelling too fast and ran his wagon off the road; he missed a turn and lost a load of beans. The event was not a total loss. When deer came to eat the beans, the family killed the deer for meat. The Grant family at the cemetery may have used the

road for trips to Santa Fe marketing chickens and eggs. Loggers who established a mill near the present intersection of Diamond Drive and 35th Street also used the road. Anecdotal accounts indicate that lumberman McCurdy took products from his sawmill, primarily railroad ties, off the plateau down the Bayo road.⁵⁸

Years of use by hikers and horses have worn deeper and wider ruts in the soft tuff. The Bayo road also shows signs of having been widened by bulldozer. The road may have been used by security vehicles with pneumatic tires during early Laboratory days; it was used in the early 1960s during installation of the sewer line serving Barranca Mesa. Unlike other homestead roads in the area, it also has a distinct drainage channel on the inner side. This may have been an original feature or perhaps was developed after homestead use of the road ended in 1943.

5.2.2 Gonzales Road

In 1920, Estanislado's brother, Donaciano Gonzales, then 37 years old, patented a small homestead of 12.5 acres located on the small spur of Barranca Mesa, which is now traversed by Camino Encantado. At some time, the family built a short road, LA 135434, down the little side canyon that separates the spur from the mesa. In places the builders had to hack into the cliff to make a ledge wide enough to accommodate the roadbed. The outer bank work remains intact, showing how narrow the road was. This little spur road joined the Bayo Road at the top of the steep grade into the main canyon.

Along the road, the homesteaders built a stock pond in the canyon. They constructed a dam of logs and rocks backed by a soil berm. The pond has since silted up and the dam has been breached, but it retains enough water to support a stand of willows. A barbed wire fence, supported on wooden posts and convenient trees, crossed the upper end of the pond. The wires girdling the trees are deeply embedded where bark has grown over them. The fence extended from a cliff face on the north, across the small canyon, then angled up the south wall to the mesa top.

In his 1938 survey of the subdivision lines of T19N, R6E, Charles Devendorf crossed this road. At the top of the Encantado spur, he enters a cultivated field. No maps (including Devendorf's) show this road.

The original road simply topped out on the mesa. Housing development on Camino Encantado in the 1960s blocked the road, with no consideration of an opening for public access to the little canyon. The road ends in someone's backyard.

5.2.3 San Ildefonso Road

Gonzales had other roads to his mesa-top homestead. At some point, the family put a road from the head of Bayo Canyon up the southwest bluff of Barranca Mesa. The road appears on the 1935 aerial photo, but not on any map until 1937. This road was destroyed during the construction of San Ildefonso Road. A small section of abandoned road that branches east near the top of the grade before the El Gancho intersection has some subtle characteristics of homestead roads. The family used its roads extensively. When Estanislado worked at H.H. Brook's experimental farm for a time, he traveled this road over to Los Alamos Mesa. He also worked at local sawmills near the golf course area.

5.2.4 Lujan Roads

The road on the north side in Bayo Canyon provided access from the Rio Grande Valley to the homesteads on the golf course and Urban Park areas in addition to Barranca Mesa. The road on the south wall in Bayo Canyon, LA 132621, provided access to the Lujan homesteads on North Mesa. David Quintana had applied for homestead entry for 150 acres on North Mesa in 1909 and received patent in 1913. Martin Lujan applied for entry in 1914; in 1916, Quintana's heirs sold their homestead to Martin's son, Manuel.

Upper Bayo Canyon is a wide, level area, but an inner gorge soon develops that separates the Lujan Road from the Bayo Road. The Lujan Road first traverses the level canyon floor below the south rim. Where the road starts its descent into the canyon, the Lujans built a switchback road up to their homes on the mesa top. This is a steep road which shows the considerable effort needed for its construction. Continuously along the road is an outer rock wall that defines the original contours of the now deeply eroded roadbed. Sections along the bank retain marks of the hacking necessary to widen the road for wagons. At the bottom of the switchback road where it joins the canyon road, the embankment wall is quite beautiful. Perhaps the most noticeable feature on this section is that the road is so narrow that two wagons could not pass in opposite directions; it is even unlikely that a horse and wagon could pass. The road is one way only, implying single use by a single family.

In the canyon below the switchback, the old road begins its descent into Bayo Canyon. This road, too, is so narrow that one must infer that it was a one-way road. Here are excellent examples of construction features typical of Homestead Era roads throughout the area. Here are pick marks made during widening the road over outcrops of solid rock. Here, too, are gouges made as wagons scraped against soft tuff. The sturdy rock walls on the outer edge still manage to keep the roadbed intact. Even rare remains of wood cribbing are still visible. Years of use by hikers, horses, bicycles, even motorbikes, have further eroded the roadbed. Still, its original contours are clearly evident.

At a presentation sponsored by the Los Alamos Historical Society in 1982, one of Manuel Lujan's grandsons shared Lujan family stories and mentioned the roads, as follows:

“They continued farming every year until 1926. During that time, they planted mostly beans and corn. They didn't irrigate because in those days the rain was plentiful. I remember my grandfather talking about many difficult times that they had in those days. There were no machines to help them plant or weed or harvest. It was all done by hand or with the help of horses. They were so far up in the mountains that it was difficult to get any type of machinery to harvest whatsoever. When harvest was done, they would bring the sacks of beans and corn down on horses and wagons. The road was extremely treacherous and was very steep.

“He would tell us that one time they were coming up the mountain when the wagon was full of food for the family and seed to do the year's planting. The horses were pulling with all that they had and they just couldn't pull any more. My grandmother and my aunt were in the wagon and he had to get them down and sit them down on the side of the road and unload the wagon so the horses could make it up the steep hill. After he finished unloading, he led the horses and wagon out and then took my grandmother and

her daughter and picked them up. Then he began to haul what he had emptied and loaded upon the wagon once again.”

“I am telling you this to again illustrate that times were difficult. They farmed up here for a number of years until my grandfather moved to Santa Fe in 1926. The farm continued to be farmed by others and on a leased basis until 1939 or 1940....⁵⁹

Beginning with the 1915 Forest map, references show a road accessing North Mesa from the west, approximating the route of North Mesa Road. From the intersection of Diamond Drive and San Ildefonso Road, the road turned down Bayo Canyon. Not until 1937 do they show the Lujan switchback up the side of the mesa to the family compound in the present stables area.

In his 1938 survey of the subdivision lines of T19N, R6E, Charles Devendorf finds a road on Kwage Mesa, an eastern projection of North Mesa. As he hops west along the section lines and passes through the Lujan complex, he comments, "enter formerly cultivated field..." then comes upon, "Log cabin, vacant...", then another, "Log cabin, vacant...", and crosses a three-wire fence. He finds the Lujan Road in Bayo Canyon, but does not mention a road on the north side of the canyon floor, which is at a section corner.

5.3 Pueblo Canyon

Pueblo Canyon is one of the largest canyons cutting the Pajarito Plateau. It originates high on the Sierra de los Valles behind Los Alamos. Two branches merge into a single canyon 120 feet deep at the base of the sierra near the present Diamond Drive fill. For approximately one mile downstream, the canyon has an inner gorge with sheer cliffs carved into bedrock. The gorge contains a near-permanent stream that disappears only during the driest years. Shrubs and deciduous trees, mostly willow, cottonwood, and box elder, grow in the gorge, rendering it brushy as well as narrow and rocky. Below the inner gorge, the canyon deepens and widens and becomes truly massive, with cliff-like walls exceeding 400 feet high.

There is little record of roads in lower Pueblo Canyon, even though the floor is broad and fairly level. Even in 1938, Surveyor Charles Devendorf recorded neither a road nor an abandoned road. He does note the Forest Service telephone line at the confluence of Pueblo and Walnut canyons.

On the upper reaches of Pueblo Canyon on the slopes of the Sierra de los Valles, Devendorf crosses "Dim old road and blazed trail," "woods road," and "Abandoned logging road" along the Quemazon Trail. He crosses a probable progenitor to Pipeline Road near the north branch of Pueblo Canyon. In North Community, he finds only one "Old logging road" and nothing on the surrounding slopes.

5.3.1 North Road

The old maps and the 1935 Soil Conservation Service aerial photographs of the Los Alamos area show two roads crossing Pueblo Canyon. The 1915 Forest map shows a road in Section 8, a precursor to North Road. It approximated the route of the present North Road/Arkansas Avenue and passed through the fields of Francisco Gonzales, now the Urban Park area of North Community. The 1935 aerial photos imply that the North Road route was the more heavily traveled. Post-Manhattan Project settlers in Los Alamos say that North Road was the only road to

the northern part of the settlement until the Diamond Drive fill was constructed in the early 1950s. The Army had closed Pueblo Canyon for security reasons; residents didn't realize that an old homestead road lower in the canyon existed.

The 1915 map also shows a trail from the Lujan compound on North Mesa into Walnut Canyon and up Acid Canyon toward the Brooks Ranch. This trail never became a road.

In his 1938 survey of section lines, Charles Devendorf mentions a "Road bears N. and S. This serves to connect the various mesas that project E. between the canyons." He was near the High School library. On the south rim of Pueblo Canyon, he crosses a road very near the present Diamond Drive fill, probably the precursor to North Road that crossed the canyon west of this point.

5.3.2 Homestead Crossing

In 1923, the Forest Service issued a contour map of parts of the plateau. This map shows a trail across Pueblo Canyon with a bridge crossing the drainage. This route remained a trail until a 1937 map showed it as a primitive road. The road still exists as a recreation trail, which Janie O'Rourke named Homestead Crossing. It begins at the back gate of Ridgeway Playlot in the Denver Steel residential area. The old road, LA 135430, angles down from the rim in three steep switchbacks to the cliffs of the inner gorge. This is the shallowest point in Pueblo Canyon as it cuts across the plateau. The present trail crosses on a pedestrian bridge at the same location as the old bridge. The old road continues up the side of a small side canyon to the mesa top. The ascent up the little canyon required a long bank cut up to 15 feet deep in order to carve a passage wide enough for the road. On one tree, now dead, near the bank cut is a typical Forest Service blaze, one of few left in the county. The road makes a sharp bend at the head of the little wash, where the builders constructed a dry-laid rock wall almost five feet high. Other outer masonry walls were necessary to maintain adequate width along the road. After the short, steep ascent out of the little canyon, the road ends ignominiously at the back fence of a homeowner on 34th Street. The 1937 map shows that the road went north up across the mesa toward Conoco Hill, and then proceeded over to Dot Grant's place at the cemetery. Only this short section of the road directly crossing Pueblo Canyon is still intact. The rest was destroyed during extensive road and housing development in the 1950s.

5.4 Los Alamos Canyon

On his 1857 survey of the section lines across the mesas in the southern half of T19N, R6E, Reuben Clements records reaching the south rim of a large canyon [Los Alamos Canyon] in which lies a trail that "passes up to the valley west of the mountain [the Valle Grande]."

Surveyor Daniel Merry's elaborate 1890 sketch map of T19N, R6E names Los Alamos Canyon and shows a house, cultivated fields, and fenced land on its northern border at Western Area. In 1893, Benigno Quintana filed for homestead entry there. Merry finds a road in the lower canyon along the northern border of Section 24, ending in midsection 23 (north of the TA-53 Los Alamos Neutron Science Center). He does not indicate any means of access to the adjacent mesas. By the time the Forest Service issued maps, both the Los Alamos and South mesas were well populated (Table 6). Not until the 1914 Fire Map of the Jemez National Forest are two

vague and unlikely routes shown out of Los Alamos Canyon to Los Alamos Mesa. The 1915 Forest map shows a road that crosses the canyon much like the present West Road.

In his 1938 survey along the eastern boundary of T19N, R6E, Charles Devendorf notes Merry's road in Los Alamos Canyon as being north of the wash. Moving westward along the Section 13/24 boundary, he finds an "Abandoned road, bears NE and SW, possibly used to ascend mesa." He was at the confluence with DP Canyon, crossing the Mattie Brook road. As he hops across the section lines, Devendorf consistently crosses a road in the canyon until he reaches the western boundary, where he finds the dam under construction for the Ranch School reservoir. He describes the road as *dim* in mid-canyon west of TA-41, but merely *road* near Omega Bridge crossing.

Table 6. Homesteads Accessed through Los Alamos Canyon

Entryman	Entry Date	Acres	Section	Location	Owner in 1943
Quintana, Benigno	11/23/1892	160	17	Los Alamos Mesa	Los Alamos Ranch School
Duran, Efredn Gonzales de	10/24/1898	160	17	TA-3	Ramon Duran
White, William Carpenter	03/18/1899	160	8, 9	Los Alamos Mesa	Los Alamos Ranch School
Brook, Harold H.	08/01/1908	150	15	Los Alamos Mesa	Los Alamos Ranch School
Hopper, William M.	08/05/1908	130	10, 15	Los Alamos Mesa	Los Alamos Ranch School
Montoya, Jose Albino	01/05/1911	90	22	Sigma Mesa	Montoya Brothers
Vigil, Miguel	03/25/1913	63	15	Royal Crest Trailer Park	Enriquez Montoya
Brook, Martha	08/11/1913	150	14	Los Alamos Mesa	Los Alamos Ranch School
Connell, A.J.	01/21/1921	40	15, 16	Los Alamos Mesa	Los Alamos Ranch School

5.4.1 Los Alamos Mesa

Daniel Merry's 1890 survey crew crossed the wire fences of B. Quintana at the present Western Area. Merry noted a road in lower Los Alamos Canyon, but not in mid canyon near the Quintana homestead. Neither early maps nor survey notes describe a route north out of Los Alamos Canyon that Benigno Quintana could have used to get his barbed wire up to his homestead at Western Area.

Chapman's 1900 archaeological map depicts "passable wagon roads" and trails. His map does not show either category accessing Los Alamos Mesa. Hewett's 1904 *Archaeological Map of Pajarito Park* shows a trail accessing an *important ruin* between Los Alamos and Pueblo canyons that he labeled *Otowi*. Taking into account placement and scaling inaccuracies in this map, it also implies there were no routes up onto Los Alamos Mesa itself. H.H. Brook's purchases of large farming equipment imply that he developed or improved roads onto Los Alamos Mesa. Even the Forest map of 1913 shows Los Alamos Mesa devoid of road (or trail) access. However, the 1914 Forest Service Fire Map shows two roads ascending the mesa from Los Alamos Canyon, one directly accessing *Brook's R*. Field inspection locates two roads that ascended Los Alamos Mesa from the canyon—West Road and Mattie Brook's road up DP Canyon. Development obliterated any remnants of a precursor to West Road, but Mattie's road has classic characteristics of a homestead road.

The 1915 Forest map shows section lines and a more accurate placement of roads. West Road is correctly shown in Section 17 and a mesa-top road approximates Trinity/502 to the east end of Section 14 (near the east end of the present air strip). The 1916 map accompanying the proclamation establishing Bandelier National Monument shows a road off the mesa, as does the Forest map of 1918. Both maps show the road connecting with the road in Los Alamos Canyon in the southwestern part of Section 13, strongly implicating the location of the Mattie Brook Road.

In his 1938 Dependent Resurvey of section lines of Los Alamos Mesa, Charles Devendorf finds a well-developed area. Starting at the eastern boundary of the township, he repeatedly crosses "State Highway from Otowi P. O. to Otowi Station" on Los Alamos Mesa, precursor to State Road 502. Moving west along the section lines, he crossed the extensive developments of the Ranch School; he surveyed across a corral, wood shed, polo grounds, telephone lines, and the east edge of Ashley Pond, which he described as a "swimming pool."

5.4.2 South Mesa

In 1898, Juan Ignacio Duran filed for homestead in present-day TA-3. No early maps or surveyors' notes explain how the family originally accessed his mesa-top claim, nor does Surveyor Merry mention any human-made features there in 1890. The Durans may have followed the Soldiers' Road to Cañon de Valle, and then turned north along the present route of State Road 501. Kenneth Chapman's 1900 archaeological map shows a most unlikely road coming out of Los Alamos Canyon near its intersection with the Range 6/7 line and extending as a trail between Los Alamos and Sandia canyons to the head of Sandia Canyon.

The 1913 Jemez Preserve map shows a road branching south out the Los Alamos Canyon in Section 16 where Duran's homestead road, LA 135429, still climbs the 200-foot south wall to TA-3. For the most part, the roadbed is approximately nine feet wide, implying only one-way travel. The builders carved bank cuts along most of the route. Continuously along the route, crude rock embankments shore up the outer edge of the road. There is no indication that the rock was shaped and no sign of stabilization such as chinking with concrete. A few rutted areas appear in the roadbed, but none of the well-defined ruts noted elsewhere in the Los Alamos area occur along this road. The roadbed is moderately worn below the grade established by the outer embankments.

A horse trail with homestead characteristics ascends the canyon south wall from TA-41 to Miguel Vigil's homestead, now Royal Crest Trailer Park. Vigil filed for entry in 1913, but later sold to the family of Enriquez Montoya. No map shows an incipient East Jemez Road along the south rim of Los Alamos Canyon to access Montoya's place until 1937, but the 1935 aerial photographs show a narrow road connecting the Montoya and Duran fields.

The 1915 Forest map shows a reasonable depiction of the West Road route out of Los Alamos Canyon onto South Mesa. In his 1938 survey of section lines, Charles Devendorf noted a log and wire fence junction, a road, and a telephone line on the eastern boundary of the Duran homestead.

5.5 Sandia Canyon

[Note: The author has no access to Department of Energy property that is closed to the public. The following sections are based on references only, without field inspection.]

In 1912, William B. Douglass conducted a restorative survey of the boundaries of the Ramón Vigil Grant. His elaborate sketch map and notes provide the best evidence of roads in this time period during which the basic transportation infrastructure was established. Douglass' map does not show a road in Sandia Canyon; a road instead climbs to the mesa through Mortandad Canyon, which he names.

In 1916, Forest Surveyor C.A. Long surveyed Homestead Entry Survey No. 393. Applicant for listing was Manuel Archuleta, dated 1913 for Homestead Entry 023882 of Lociado Archuleta in 1915. The land, totaling 52.70 acres, is located in Section 24, T19N, R6E and Section 19 in R7E in Sandia Canyon. As he surveys the township boundary, Long encounters a barbed wire fence, a road, and a log house. North of the claim are extensive cliff dwellings. The claimant requests that the line be run at the base of the 300-foot cliff rather than its true line at the top.

The 1915 Forest map shows a road in Sandia Canyon, ending at a structure in Section 21. In Section 22, a road branched south out of the canyon, then west along the mesa to the broad area of TA-3. Later maps don't show any roads in Sandia Canyon until 1937, even though Lociada Archuleta occupied the lower canyon near Tsankawi since 1915.

Interestingly, a 1929 Forest map shows Wheeler's *Agua Pa* at the head of Sandia Canyon.

In his 1938 survey of section lines, Charles Devendorf did not encounter any road in Sandia Canyon. His route along the Section 15/22 line took him into the ravine where East Jemez Road now climbs out of the canyon. Even Laboratory maps as late as 1947 do not show the present route of East Jemez Road into the Sandia Canyon narrows below TA-53. Devendorf did find roads on Sigma Mesa between Mortandad and Sandia canyons, implying that travelers accessed the mesa from the west. Along the section line, he crossed a three-wire fence, and observes cultivated land and a cabin on the Montoya place, the present location of Royal Crest Trailer Court.

5.6 Mortandad Canyon

The 1915 Forest map shows a road in Mortandad Canyon, with a branch splitting off to climb out of the canyon in Section 22 near the McDougall place. Subsequent maps do not show a road in Mortandad Canyon, but do depict one on the mesa to the south.

In 1916, Forest Surveyor C.A. Long surveyed Homestead Entry Survey No. 395. Applicant for listing was Francisco Sanchez, dated 1913 for Homestead Entry 023589 of Fermin Vigil in 1915. The land, totaling 60.31 acres, is located in Section 24, T19N, R6E. The eastern boundary was the township line between Section 24, R6E and Section 19, R7E, in Mortandad Canyon. As he surveys the boundary, Long encounters a road two chains from Cor. No. 1, two and three chains on either side of Cor. No. 2. He mentions a log house and fence, and extensive cliff dwellings north of the claim. Water is hauled from a spring three miles distant. "About 15 acres are

cultivated, producing good crops of beans, corn, and vegetables.” Buckman is about seven miles away by a good wagon road. (Unfortunately, three pages are missing on the microfiche.)

In 1923, Forest Surveyor Thomas Meyers surveyed Homestead Entry Survey No. 499. Applicant for listing was Masimiano Gomez, dated 1913 for Homestead Entry 028835 of Anastacio Vigil in 1916. The land was located in sections 19 and 30, T19N, R7E directly north of the Ramón Vigil boundary in Mortandad Canyon. Meyers noted roads and a pole corral on the Section 19/24 line in the canyon; he found a fence and plowed ground along the grant boundary. This homestead abuts that of Fermin Vigil in Section 24, T19N, R6E. In his summary, Meyers notes a log house and pole corral on the claim; total area is 33.70 acres.

In his 1938 survey of section lines, Charles Devendorf found a road in Mortandad Canyon at the section corner for 24/25, R6E; 19/30, R7E. He found a road farther west on the 23/24 section line, now up on the mesa south of the canyon. He called it, "Old road." However, as he moved west along the section lines, he did not find any roads higher in the canyon.

5.7 Pajarito Canyon System

Controversy surrounding the 1876 Sawyer-McElroy boundaries of the Ramón Vigil Grant began with Padre Hayes and a Smith and Sheldon independent survey. Problems continued with charges against the Ramón Land and Lumber Company for cutting on the national forest, the company claiming that the boundaries were unclear. In 1911, Surveyor General John W. March appointed William B. Douglass as special agent to examine the surveys of the grant. The original call of the boundaries of the Pedro Sánchez Grant stated, "...on the north by the lands of the Indians of the Pueblo of San Ildefonso...." U.S. surveyors interpreted the north boundary of the Vigil Grant as the westward extension of the south boundary of the San Ildefonso Pueblo Grant. Douglass began his examination by retracing the southern boundary of the pueblo grant, set by the Spanish Crown to be one Spanish league south of the pueblo's church. He found this task complicated in that the exterior dimensions of the church had been remodeled since the original U.S. survey in 1856 and the original surveyor miscalculated the length in chains of a Spanish league. Douglass' instructions bid him use the *established* south boundary of the pueblo grant, but he could find no evidence that parts of that boundary had ever been surveyed; he finds no mile markers beyond the first three eastern markers. His problems were further compounded by the very rough topography where the boundaries meet at the Rio Grande, where no surveyor ever found the alleged corner marker set by the Spanish governor for the Sánchez Grant.

After several days of futile search for corner markers at the east end of the Ramón Vigil Grant, Douglass shifts to the west end of the alleged northern boundary to a newly found stone supposed to be the northwest corner of the grant. From this stone, he runs east through a logged area. Near the one-mile marker he notes:

“This line runs over an old logging camp with a mill site and many deserted cabins to the north of the line. A pile of saw dust 10 or 15 ft. high covering an acre or more of land about 8 chs. N. of the 50 chs. point marks the mill site of extensive logging operations. All valuable timber has been cut leaving only scattering small pine.

Soil, sandy loam: 2nd to 3rd class

Part has been under cultivation.
Land, rolling”

Douglass appears to be at the old Buckman Set, now S Site, one mile south of the present grant boundary.

Douglass found marked stones at four of the mile corners along his examination of the supposed (sic) line. He notes that the marks seem to be quite old and he could find no accessories – witness or bearing trees. At the fifth mile, he writes, “A very long and careful search was made for this corner stone without success. Victor Romero of the San Ildefonso pueblo (or near it) told me that he knew where this corner was. He was formerly employed at the saw mill 1/4 mile east of here. I was unable to secure his services to point it out. Forest Ranger Leese does not believe that Romero knows the location of this corner.” In 25 chains (1,650 feet) at the bottom of a cliff, Douglass finds “commissary and principal buildings of a large logging camp, now deserted, around which are grouped a dozen or more cabins. A saw mill bears 6 or 8 chs. south.” He is at the confluence of Pajarito and Threemile canyons, site of TA-18, one mile south of the present grant boundary, soon to become Ashley Pond’s guest ranch. In another 20 chains (1,320 feet), he ascends out of the canyon and crosses a road on Mesita del Buey. At the seven-mile corner, Douglass notes, “Faustin Lopez resigns as flagman and axman at noon of this day. July 7, 1911.” On July 9, he writes, “...Party became separated and failed to reach the 8th mile point in time for field work. Made topographical sketches.” Proceeding east, Douglass encounters Navawi ruin, one-half mile south of the present boundary. In his long trek he finds no mile markers beyond the first four miles.

In the summary of his Examination of Surveys, Douglass doubts that the line he followed is true; he expresses confidence that the line Daniel Merry set in 1890 is correct, allowing for the miscalculation of the San Ildefonso Spanish League.

Given the frustrations and confusion Douglass encountered, Surveyor General March instructed Douglass to resurvey the boundaries of the Ramón Vigil Grant and part of the San Ildefonso Pueblo Grant. The northern boundary of the Ramón Vigil Grant cuts across Pajarito Canyon and its tributary, Twomile Canyon. When Douglass resurveyed the boundaries (but no section lines) of the Ramón Vigil Grant in 1912, he included a sketchy depiction of Pajarito Canyon on the map accompanying his boundary survey.

Douglass’ map shows a road from the broad White Rock mesa extending up Pajarito Canyon (north of the wash) to a *Sawmill (Old site)* at present-day TA-18. There, the road branches, with the north arm extending up Pajarito Canyon to Section 23. The second branch extends up Threemile Canyon, where it ascends the south wall onto the *Llano Largo*. This should be the location of the *Devil’s Slide*. Then Douglass becomes confused, implying that the confluence of Pajarito and Twomile canyons in Sections 22/27 is in Threemile Canyon. He shows a detached section of road in the canyon and a road on a broad mesa between Pajarito Canyon and Threemile Canyon.

Neither Douglass’ nor other maps show a road out of Pajarito Canyon connecting with the homesteads along the grant boundary. Interestingly, the 1927 Forest map shows a road north out of the canyon to Tschirege Ruins. All maps show a road down the mesa between Mortandad and

Pajarito/Two-mile canyons that came off the east end of the mesa somewhere near the present White Rock Visitor Center. The upper part of this road was the precursor to Pajarito Road.

Ten homesteaders received patent along the boundary of the Ramón Vigil Grant south of Sandia Canyon (Table 7).

Table 7. Homesteads Accessed from Pajarito Canyon and Mesas

Entryman	Entry Date	Acres	Section	Location	Owner in 1943
Romero, David	02/28/1893	160	21, 22	TA-55	Francisquita Romero, et al.
Gomez, Donaciano	03/04/1899	160	20	Two-mile Mesa	Donaciano Gomez
Sanchez, Miguel	03/08/1899	160	20, 21	TA-6	J.E. & J.P. Montoya
Loomis, James S.	04/11/1899	164	19, 30	TA-8	A.C. Ross Estate (Anchor Ranch)
Gonzales, Severo	06/06/1899	79	19, 29, 30	TA-8	A.C. Ross Estate (Anchor Ranch)
Moses, William	06/01/1900	40	19	TA-8	Walter Grottenthaler
McDougall, Robert G.	01/05/1911	108	22	TA-50, TA-52	Ramon Roybal
Montoya, Jose Albino	01/05/1911	90	22	Sigma Mesa	Montoya Brothers
Romero, Victor	02/25/1913	15	21	TA-55	Victor Romero
Duran, Ramon	03/02/1917	10	21	TA-3	Ramon Duran

5.7.1 Pajarito Canyon

In 1912, Surveyor William Douglass found a road in Pajarito Canyon up to the confluence of Pajarito and Threemile canyons, site of the ill-fated Ramón Land and Lumber sawmill, later Ashley Pond's Pajarito Club, now TA-18. Beginning in 1915, Forest maps showed a road to this site; the road turned south out of the canyon in Section 27 near the confluence with Two-mile Canyon. Not until 1936 does the Forest map show a road north onto the mesa; the south road disappeared by 1927.

In his 1938 survey along the west boundary of the township near Pajarito Canyon, Charles Devendorf followed a fence line and noted the house of A.M. Ross at Anchor Ranch, plus a reservoir with metal flumes. As he moves east across the section lines, Devendorf notes the "Highway from Otowi Post Office to Bandelier National Park and also to the Jemez Mountains..." surrounded by the fences, cultivated land, and a road of Anchor Ranch. He passed *Don Gomez house*, field, and fences.

Along the portions of the north boundary of the Ramón Vigil Grant, Devendorf notes a five-wire fence. No homestead lies along the line at this point, so one presumes that the grant owner, the Soil Conservation Service, installed the fence. During his survey of the section lines, Devendorf repeatedly crosses the main road serving the homesteads north of Pajarito Canyon, now Pajarito Road. Unfortunately, he cannot verify how this road came up onto the mesa; that point is on the Ramón Vigil Grant. He notes the Romero house, fences, and fields. He finds a road near the junction of Diamond Drive and Pajarito Road, and more roads, as well as a telephone line, on broad mesas to the west.

5.7.2 Twomile Mesa

The northern boundary of the Ramón Vigil Grant defined the southern limit of the plateau that was open to homesteading. Daniel Merry's 1890 survey shows a fenced area on Donaciano Gomez' place on Twomile Mesa. In his survey notes, Merry calls it *Old Sheep Corral*. Beginning in 1899, five homesteaders filed for entry around Twomile Mesa adjacent to the grant boundary, possibly because Henry Buckman's road offered them easier access.

In his 1938 survey of both the boundary and the subdivision lines of T19N, R6E along the northern boundary of the Ramón Vigil Grant, Charles Devendorf finds a road he calls "Highway from Los Alamos to Anchor Ranch." He crosses the Montoya fields, though not by name, and a well in the small tributary north of the field. At the heads of both branches of Twomile Canyon, he notes a *Dim road*. (Devendorf was confused—he erroneously called these Mortandad and Sandia canyons.)

5.8 Ramón Vigil Grant

Because the Ramón Vigil Grant was private land, the Forest Service did not collect topographic or cultural data for their cartographers. Forest maps show only vague features on the grant. After 1860, the Surveyor General could only authorize boundary surveys. Only a few specialty maps give details on the grant with any accuracy.

Before 1900, all maps show that access to the grant from the Rio Grande approximated the route of State Road 502 to the confluence of Los Alamos and Pueblo canyons, then turned south through the passes below Tsankawi and Navawi, now the route of State Road 4. All old maps show the Soldiers' Road/Jemez Trail /Buckman Road/Otero Road along the mesa south of Pajarito Canyon as denoted by Surveyor Reuben Clements in 1857. Part of this area is often referred to as the *Llano Largo*. The maps do not delineate the complex topography caused by Twomile, Threemile, Potrillo, and Fence canyons.

5.8.1 Pajarito Canyon

Early maps are unclear and contradictory; none blatantly show a road in Pajarito Canyon itself, but imply that the road crossed Pajarito Wash, climbed the mesa to the south, and then proceeded west. Even today, a large complex of wagon ruts remain along the south rim at the eastern end of the mesa.

The 1915 Forest map shows a road to the *Pond Ranch*, which was located in Pajarito Canyon at present TA-18. This road proceeds up Pajarito Canyon west of Pond's Ranch, and then climbed out to the south in Section 27 to rejoin the Llano Largo road. The 1915 Forest map does not show any roads leading from the Ramón Vigil Grant to the homesteads situated on its northern border. However, during Surveyor William B. Douglass resurvey of the Ramón Vigil Grant boundaries in 1913, he follows the wire fence of James Loomis along the north boundary of the grant. Douglass crosses a road leading to Loomis' house and soon comes within one chain of a log cabin. Farther along, Douglass notes *McDougall's house and barn* 20 chains (1,320 feet) north of the boundary. He crosses the confluence of Twomile and Pajarito canyons, and then proceeds "Over level mesa, through McDougall's ranch." He soon crosses two roads only two chains apart on the narrow neck between Pajarito and Mortandad canyons, precursors to Pajarito

Road at TA-46. He finds an old road where he crosses the head of Cañada del Buey. Continuing east to Mortandad Canyon, Douglas mentions a cliff containing important cliff dwellings 10 chains north of his line where he crosses a road and an "ancient trail over pass and ancient game pit, cut in the rock north about 3 chains (198 feet) distant."

On the map accompanying his 1913 survey notes, Douglass shows a number of continuous roads in the area. He also shows a road into Pajarito Canyon leading up to a sawmill site (precursor to Pond's Ranch/TA-18). The road proceeds approximately 1.5 miles up Threemile Canyon, then ascends south up onto the mesa to join the main road on the Llano Largo, presumably at the Devil's Slide.

The National Park Service issued the most detailed map of the Ramón Vigil Grant in 1932 as part of a topographical map of Bandelier National Monument. The map extends to the Tsankawi and Otowi detached section, thereby encompassing the grant. This map shows a primitive road approximately three miles up Canyon (sic) del Buey from its junction with the main road that approximates present State Road 4. A separate road proceeds up Pajarito Canyon. This road branches in a mile or so. One branch goes south up on to the mesa and west to the Llano Largo. The second branch goes up Pajarito Canyon to the grant boundary, becoming more primitive as it proceeds west. There is no indication of a Devil's Slide ascending to the south or a road out to the homesteads north of the grant.

5.8.2 Water Canyon

Beginning in 1900, maps show a road along the west boundary of the Ramón Vigil Grant at the foot of the mountains. It leads to Water Canyon near the Buckman Set. Most maps show an extension, either as a road or trail, down Frijoles Mesa. Kenneth Chapman's 1900 archaeological map, one of the earliest to reasonably depict the terrain, shows a trail on the mesa between Water Canyon and Cañon de Valle. After 1913, many maps show a road variously swishing across the eastern Ramón Vigil Grant in a most unlikely fashion considering the terrain; it does not approximate the hairpin turns of State Road 4 as it climbs the scarp. Not until 1924 do the interior roads on the grant become more realistic.

The interior of the Ramón Vigil Grant is void of detail on most early maps. The maps rarely depict even its most prominent natural feature, the confluence of Water Canyon and Cañon de Valle. Surveyor Reuben Clements found little to note during his 1857 survey of section lines. Archaeologist Edgar Hewett, who had interests in the rich archaeological resources of the area, named the stream in Water Canyon the *Rito del Bravo*. Chapman's 1900 archaeological map shows a trail from the *Saw Mill* to the large ruin [Nake'muu'] on the point above the confluence. Chapman shows two large confluences in the area, possibly an exaggerated depiction of Twomile Mesa, with a trail between them. In a later map in 1904, drafted by John Tarbert, Hewett also shows the area around the confluence. In his bid for a national park, it was not in Hewett's interest to show any infrastructure or hint of homesteaders. The roads he depicted are few and improbable.

In his 1912 resurvey of the grant boundaries, William Douglass, too, has a large void for the interior of the Ramón Vigil Grant. He found a road from Pajarito Canyon to Water Canyon along the presumed route of State Road 4. He shows a detached road leading to the Frijoles Canyon rim above Abbott's Ranch, and a stub pointing down into the canyon.

Beginning in 1914, Forest maps show an east/west road in the southern part of the grant. This road split into two branches that proceeded southeast on either side of Ancho Canyon. By 1915 an idealized route from the Buckman Road to the rim of Frijoles Canyon cliff dwellings appears, anticipating the route of State Road 4. By 1921, a twisting road appears near the R6/7E range line between Water and Frijoles canyons. A branch of that road goes west along the north rim of Water Canyon and, in a most unlikely fashion, crosses south at the Cañon de Valle confluence.

By 1933, the Forest map becomes more specific. The Buckman Road stays north of Potrillo Canyon and crosses the grant boundary to the homesteads in Sections 29 and 30. The Water Canyon road moves to the south rim and joins the Frijoles Mesa road at TA-49 above the Ancho badlands. The old Buckman Crossing down Mortandad Canyon to the river is gone from the *Llano Pajarito*, now White Rock.

The 1932 National Park Service topographic map shows the grant in detail. Near the little pass between Fence and Water canyons, the precursor to State Road 4 branches. One branch proceeds south to Frijoles Canyon. The second branch proceeds west up Water Canyon. Approximately one-half mile below the Water/Valle confluence, it climbs up to TA-49 site, where it joins the Frijoles Mesa road. This map names some interesting places, including a *saw dust pasture* and three *pictograph sites*.

In 1937, the Soil Conservation Service issued a detailed forage map of the Ramón Vigil Grant. The map shows range types and a good description of the topography. It shows a road in Water Canyon ascending as a trail to the south rim downstream from the Cañon de Valle confluence, resuming on the mesa as a road westward to [unnamed] State Road 4. Later maps downplay roads across the Ramón Vigil Grant except for State Roads 4 and 501 around its periphery.

Epilogue

The Pajarito Plateau is now less well served by much better roads. Wheeler's road up Culebra Hill is now five lanes with an elaborate overpass. The Ranch School Road up Otowi Hill is the main access to Los Alamos. A road up Sandia Canyon and the narrow track from Montoya's trailer court to Duran's TA-3 pasture, barely mentioned on maps or in surveyors' notes, became the much-used truck route. Pajarito Road past McDougall's and the Romero place was rerouted off the mesa and into Pajarito Canyon at the old Ramón Land and Lumber site at present-day TA-18. The old road off the east end of the Llano Largo is abandoned. Rendija and Los Alamos canyons have dirt roads serving well fields, marginally useful as evacuation routes. The Bayo Canyon and Cañon de Valle roads are recreation trails; only sections of the Soldiers'/Buckman/Otero Road, sequestered within the explosives testing area of Los Alamos National Laboratory, survive as passable. The State of New Mexico designated the CCC's State Road 4 as a scenic route; only a handful of people know the original stock route still exists.

ENDNOTES

¹Surveyors' notes tally the number of chains from a starting corner to a feature of interest. (A chain is 66 feet; 80 chains equals 1 mile.) Quality check for surveys used in this report involved measuring the distance between the starting points, usually section corners, and topographic features encountered along the section lines. Section corners shown on U.S. Geological Survey (USGS) topographic maps align well with surveyors' notes. Section lines of the early surveys do not correspond to present section lines; however, the surveyor notes his direction of travel in every case. Survey analyses and maps were generated on commercial software MapTech® Terrain Navigator Pro.

This report uses survey notes of the east boundary of the Baca Location No. 1 to verify assumptions concerning routes over the Sierra de los Valles. In a 1918 court case, the original 1876 survey and the 1912 dependent resurvey were judged invalid. Only the 1920 Independent Resurvey lines are shown on USGS maps. Features quoted from the original surveys were back-calculated from the 1920 notes.

²Powers, Robert, ed., *The Peopling of Bandelier: New Insights from the Archaeology of the Pajarito Plateau*, School of American Research, 2005, pp. 4–7.

Kohler, Timothy A., ed., 2004, *Archaeology of Bandelier National Monument, Village Formation on the Pajarito Plateau*, University of New Mexico Press, Albuquerque, p. 118.

³Snead, James, *Pajarito Trails Project Final Report of the 1999 Season*, undated (received 2000), Department of Sociology and Anthropology, George Mason University, Fairfax, VA, Summary: pp. 14–16. See also Powers, op. cit. 2005 pp. 79–85.

⁴The presence of grant claims on the plateau at the end of the 19th century influenced which lands would be opened to homesteading. The confirmed grants are Pueblo of Santa Clara, Pueblo of San Ildefonso, and Ramón Vigil Grant. The Rito de los Frijoles and Ojo de Borrego grant petitions were rejected by the U.S. Supreme Court in 1895. The fourth grant, Ojo del Oso, was never brought for confirmation (*Santa Fe Daily New Mexican*, April 5, 1894). The boundary survey put the Cañada de Cochiti Grant mostly off the plateau. According to tract books at the Bureau of Land Management in Santa Fe, Santa Clara Pueblo received deed to Santa Clara Canyon by Executive Order in 1905.

⁵United States General Accounting Office, *Treaty of Guadalupe-Hidalgo, Findings and Possible Options Regarding Longstanding Community Land Grants Claims in New Mexico*, GAO-04-59, 2004, Washington D.C., pp. 14–19.

⁶Kessell, John, *Kiva, Cross, and Crown*, National Park Service, 1979, p. 91. Illustration of Enrique Martinez map, c 1602. Kessell credits the map to the Archivo General de Indias, Sevilla, Spain. Copy in Chavez History Library, Palace of the Governors, Museum of New Mexico, Santa Fe, NM.

⁷Miera y Pacheco, Bernardo de, 1779. In Kessell, John, *Kiva, Cross, and Crown*, National Park Service, U.S. Department of Interior, Washington DC, pp. 507–512. Copy in Chavez History Library, Palace of the Governors, Museum of New Mexico, Santa Fe, NM.

⁸Ebright, Malcolm, 1994. *Land Grants and Lawsuits in Northern New Mexico*, University of New Mexico Press, Albuquerque, NM, pp. 225–234.

Chambers, Marjorie Bell, 1974. "Technically Sweet Los Alamos: Development of a Federally Sponsored Scientific Community," Ph.D. Thesis, University of New Mexico, Albuquerque pp. 15–28.

⁹Nesbitt, Robert and Hiram R. Parker, Letter to Co. Monroe, Abiquiu, New Mexico, July 17, 1851. In his book *Valle Grande: A History of the Baca Location #1* (2003, All Seasons Publishing, Los Alamos, pp. 18–20), Craig Martin gives a good description of this incident and other conflicts in the Baca Location #1. Frank McNitt summarizes the incident in *Navajo Wars, Military Campaigns, Slave Raids and Reprisals*, 1972, University of New Mexico Press, pp. 184–185.

Anschuetz, Kurt F. and Thomas Merlan, "More than a Scenic Mountain Landscape: Valles Caldera National Preserve Land-Use History," USDA Forest Service Joint Venture Agreement Number: 02-JV-11221601-265, 2004, pp. 5.8–5.9.

¹⁰Hone, E. Wade, *Land & Property Research in the United States*, Ancestry, Inc., Salt Lake City, 1997, pp. 102–108.

¹¹The New Mexico Surveyor General Legislation (1854 Act), the first of two statutes implementing property protection provisions of the Treaty of Guadalupe-Hidalgo. Discussed in United States General Accounting Office, *Treaty of Guadalupe-Hidalgo, Findings and Possible Options Regarding Longstanding Community Land Grants Claims in New Mexico*. op. cit. pp. 41–43.

¹²Cadastral surveys are those delineating legal land boundaries used to establish land ownership.

¹³Reuben C. Clements, Township 19N Range 6E and part of R7E, Surveyor's notes notarized November 27, 1857. Available on microfiche at the Bureau of Land Management records division, Santa Fe, NM, filed by township.

¹⁴McElroy, Stephen, "Survey of Ramón Vigil Grant (No. 38)," April 2–6. 1877. The boundaries specified in Vigil's forged grant were "...from the river to the mountains, from the lands of Captain Montoya (Frijoles Canyon) to the lands of San Ildefonso Pueblo. Survey notes are on microfiche at the Bureau of Land Management Office, Santa Fe, NM, filed by township.

¹⁵Merry, Daniel, Field Notes of the Survey of Subdivision Lines of the Frac. Township No. 19. North Range No. 6 East of the Principal Base and Meridian in the Territory of New Mexico, July 18–24, 1890. Survey notes are on microfiche at the Bureau of Land Management Office, Santa Fe, NM, filed by township.

¹⁶Martin, Craig, *Valle Grande: A History of the Baca Location #1*, All Seasons Publishing, Los Alamos, 2003, pp. 49–50.

Anschuetz, Kurt F. and Thomas Merlan, "More than a Scenic Mountain Landscape: Valles Caldera National Preserve Land-Use History," USDA Forest Service Joint Venture Agreement Number: 02-JV-11221601-265, 2004, pp. 4.7–4.8.

¹⁷Martin, Craig, op. cit. pp. 34–40 has a good summary of the circumstances of the lawsuit.

¹⁸The Wheeler Expedition map of the Santa Fe Region is entitled Atlas Sheet No. 69(D). Notebooks from the Wheeler Expedition are located in the Southwest Research Library, University of New Mexico, Albuquerque. None of the collection notebooks describe an expedition across the high-mountain valleys or the Pajarito Plateau. The notebooks imply that Wheeler's cartographers obtained their topographic data by triangulation from high peaks of the Sangre de Cristo Mountains, Placer Peak in the Ortiz Mountains, and Tetilla Peak on the Caja del Rio.

¹⁹Harrington, John P., *Ethnogeography of the Tewa Indians*, In Twenty-Ninth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1907–1908, W.H. Holmes, ed., U.S. Government Printing Office, Washington, D.C., pp. 280.

²⁰Harrington op. cit. p. 107.

²¹Tract Book T20N, R6E, Bureau of Land Management, Santa Fe, NM. Rothman, Hal, *Bandelier National Monument, An Administrative History*, 1988. Southwest Cultural Resources Center, Professional Papers No. 14, Santa Fe, NM, p. 3.

²²Lange, Charles and Carroll Riley. *Southwestern Journals of Adolph Bandelier*, Vol. II, 1885–1888, July 9, 1886, pp. 157, 161, 162, July 13, 1886, p. 270, July 17–18, 1888. Vol. IV, 1888–1892, p. 157 Sept 10, 1891.

Bandelier, Adolph, *Investigations among the Indians of the Southwestern United States, Carried on Mainly in the Years from 1880 to 1885*. Part II. Papers of the Archaeological Institute of America, American Series. Reprinted from the Edition of 1892, Cambridge. AMS Press, Inc., New York, 1976. p. 201.

²³*Santa Fe Daily New Mexican*, July 2, 1887. Available on microfilm at the New Mexico State Archives, Santa Fe, NM.

²⁴Homestead patents are listed on the Bureau of Land Management website, www.gloreports.blm.gov/patentsearch. Records can be searched by state and county. The Archive of the Los Alamos Historical Society has a set of homestead entry and patent applications for Los Alamos County.

²⁵Tony Borrego and Appolonia Garcia Trujillo. November 17, 1982, Presentation to the Historical Society, Record M1982-693-1-1, tape transcribed, Los Alamos Historical Society Archives.

²⁶Harrington, op. cit. p. 265.

²⁷Tract Book T19N, R6E, Bureau of Land Management, Santa Fe, NM, p. 216.

²⁸Until the Cerro Grande Fire of 2000, a dipping apparatus remained at the upper end of a pothole in Twomile Canyon below the Montoya Homestead on Twomile Mesa, now on Los Alamos National Laboratory land. The homesteaders cut a road through the tuff of the mesa edge to reach their water hole.

²⁹Grace Spradling Ireland, entry of September 14, 1917. Diary of a trip from Los Angeles to Muncie, Indiana, August 9 to September 25, 1917. Donated to the National Park Service by her son Eugene F. Ireland of Holbrook, AZ. Reprinted in the Los Alamos Historical Society Newsletter, 2004.

³⁰Foxx, Teralene and Gail D. Tierney, *Historical Botany of the Romero Cabin, A Family Homestead on the Pajarito Plateau*, November 1999, pp. 3, LA-13644-H, Los Alamos National Laboratory.

³¹Ebright, op. cit. pp. 242–245. Chambers, op. cit. pp. 19–29.

³²Timber Contract between F.P. Scmitt of Chicago, Illinois, Nathaniel Waldo Emerson and Brookee Garney, both of Boston, Massachusetts (11/20), George N. Fletcher of Detroit, Michigan (8/20), and Catherine S. Sewall of Watertown, New York (1/20). Exhibit A of *Sánchez vs. Fletcher*.

³³Letter from H.S. Buckman to Hon. L. Bradford Prince, September 3, 1900. L. Bradford Prince, Personal Papers, Land Grant Claims, Ramón Vigil #38 SG, Folder 7, Folder 9, 13989, New Mexico State Records Center and Archives, Santa Fe.

³⁴*Santa Fe New Mexican* December 24, 1902. Available on microfilm at the New Mexico State Records Center and Archives, Santa Fe, NM.

³⁵H.S. Buckman to Hon. L. Bradford Prince, February 17, 1900, L. Bradford Prince, Personal Papers, Land Grant Claims, Ramón Vigil #38 SG, op. cit., New Mexico State Records Center and Archives, Santa Fe. Letter mentions Smith's son, Winfield R. Smith, of Seattle.

Church, Peggy, Notes entitled *Filling in the Gaps*, no date. Peggy also mentions Winfield R. Smith of Seattle. However, *Cartwright vs. U.S. Bank and Trust* states that Smith is from Chicago.

³⁶*Manuel Sánchez et al., Plaintiffs, vs. George W. Fletcher et al., Defendants* No. 4168, January 26, 1904 et seq., L. Bradford Prince, Personal Papers, Land Grant Claims, Ramón Vigil #38 SG, op. cit.

³⁷*Santa Fe New Mexican*, June 21, June 23, and August 6, 1902. Available on microfilm at the New Mexico State Records Center and Archives, Santa Fe, NM.

³⁸Rothman, Hal, *Bandelier National Monument, An Administrative History*, 1988. Southwest Cultural Resources Center, Professional Papers No. 14, Santa Fe, NM, pp. 1–19.

³⁹*Santa Fe New Mexican*, April 15, 1904.

Tract Book T20N, R6E, Bureau of Land Management, Santa Fe, NM.

⁴⁰The Bureau of Land Management website, www.glorerecords.blm.gov, also lists Pedro Sánchez, Pedro Gomez, Hipolita Archuleta. Issue dates listed on the website do not all agree with the dates on the final patent certificates. The website also lists Los Alamos Ski Club, Los Alamos County, and USA as receiving patents.

⁴¹Rothman, Hal, 1992, *On Rims and Ridges, The Los Alamos Area Since 1880*, 1992, University of Nebraska Press, Lincoln, NB, pp. 96–97. Rothman summarizes Brook's homestead efforts on the Pajarito Plateau and the bureaucratic contentions involved with Edgar Lee Hewett's efforts to establish a national park on the Pajarito Plateau.

In re Homestead Entry No. 019452, made August 11, 1913, by Martha A. Brook. In the United States Land Office at Santa Fe, New Mexico. Homestead entry and patent applications on file at the Los Alamos Historical Society archives.

Rothman, *On Rims and Ridges*, op. cit. pp. 10–11.

Wirth, John D. and Linda H. Aldrich, 2003, *Los Alamos, the Ranch School Years 1917–1943*, University of New Mexico Press, Albuquerque, NM, pp. 17–18. Aldrich summarizes Brook's dealings with Ashley Pond.

Probate Warranty Deeds, Sandoval County, 1907–1922, New Mexico State Archives, Santa Fe, NM.

⁴²Grantee-Grantor and Grantor-Grantee record books, Sandoval County Courthouse, Bernalillo, NM.

⁴³Douglass, William B. and Hugh M. Neighbor: Restorative Survey of the Boundaries of the Baca Location No. 1, 1912. Available on microfiche at the Bureau of Land Management records division, Santa Fe, NM, filed by township.

Martin, Craig, op. cit. pp. 48–50.

Osterhoudt, L.A., Wendell V. Hall, Charles W. Devendorf, Independent Resurvey of the Boundaries of Baca Location No. 1 Grant, 1920–1921. Available on microfiche at the Bureau of Land Management records division, Santa Fe, NM, filed by township.

⁴⁴Most homestead entry and patent applications are on file at the Los Alamos Historical Society archives. Connell traded 40 acres in T17N, R10E east of Santa Fe to allow consolidation of that land into the Santa Fe National Forest.

⁴⁵Church, Peggy Pond, circa 1973, Notes of conversations with Fermor Church concerning his early days at the Los Alamos Ranch School. Note to Dorothy Hoard, Los Alamos, undated, on file at the Los Alamos Historical Society archives.

⁴⁶Hitchcock, Laurence, undated, hand-drawn map and notes to Peggy Pond Church, Peggy Pond Church Collection, Los Alamos Historical Society Archive.

⁴⁷*Santa Fe New Mexican*, June 3, 1921. “Diplomas Awarded under Pine Trees at Los Alamos; Governor in Car Climbs Precipice to Make Speech.

⁴⁸Hall, Wendell V., Resurvey of a Part of the West Boundary of T19N, R6E, Retracement of a Part of the West Boundary of the Ramón Vigil Grant and Survey of Part of the Subdivision of T19N, R5E, August 5–12, 1924, p. 349.

⁴⁹Gjevre, John A., *Chili Line, the Narrow Rail Trail to Santa Fe*, 1969, Rio Grande Sun Press, Española, New Mexico, p. 37.

⁵⁰Pickens, Homer, November 12, 1979, "Interview with Peggy Pond Church and Dorothy Hoard," Record M1987-1007-1-16, tape transcribed, Los Alamos Historical Society Archives, p. 9.

Douglass, William B., Restorative survey of the Ramón Vigil Grant, U.S. Surveyor General's Office, Santa Fe, NM, April 9, 1915. Surveyor notes and map. Survey notes are on microfiche at the Bureau of Land Management Office, Santa Fe, NM, filed by township.

⁵¹Devendorf, Charles W., Dependent Resurvey of T19N, R6E, 1938.

⁵²New Mexico Highway Journal, Vol. 2, No. 8, August 1924, p. 27.

⁵³Letter from Richard Boyd to Homer Pickens. Albuquerque, NM, November 16, 1964. A U.S. Geological Survey map from surveys in 1888 implies such a route up the side of White Rock Canyon; however, this map was issued in 1892 and reprinted in 1910 and 1940, after construction of the Buckman Road.

In a draft for a talk on roads in the 1970s, Peggy Pond Church commented that she received a letter from the Military Archives in Washington D.C. which stated that they had no record of such a road being built by the Army at Fort Marcy.

⁵⁴New Mexico Highway Journal, Vol. 2, No. 8, August 1924, p. 9.

⁵⁵Survey notes are on microfiche at the Bureau of Land Management Office, Santa Fe, NM, filed by township. See Appendix III of this report for a list of surveys cited.

⁵⁶Homestead Patents 514423, 773942, on file at the Los Alamos Historical Society Archives.

Interview with Miguel Duran, grandson of Estanislado Gonzales, on June 15, 2004, by Dorothy Hoard and Georgia Strickfaden. Miguel's wife is Noberto Roybal's granddaughter.

⁵⁷Department of the Interior, National Park Service, Bandelier National Monument. Map Showing those Portions of Lands Comprising the Monument, Office of the Chief Engineer, San Francisco, California, Dec. 1932. Obtained from the USGS Collections: Bandelier National Monument.

⁵⁸Interview with Miguel Duran, grandson of Estanislado Gonzales, on June 15, 2004, by Dorothy Hoard and Georgia Strickfaden.

⁵⁹Marchi, Michael. Presentation to the Los Alamos Historical Society, November 17, 1982. Record M1982-693-1-1, tape transcribed, Los Alamos Historical Society Archives.

APPENDIX I: Chronology

- 1742 Governor Mendoza approves Pedro Sánchez Land Grant petition
- 1758 Don Bernardo de Miera begins a series of maps of New Mexico
- 1779 Route on Miera map across plateau from Rio Grande to *Valle de los Bacas*
- 1821 Mexican Government awards Cabeza de Baca grant on Gallinas River
- 1848 Treaty of Guadalupe-Hidalgo ends U.S.-Mexican War
- 1851 Ramón Vigil purchases Pedro Sánchez Grant
- 1851 Parker & Nesbit contract with U.S. Army to cut hay on Valle Grande
- 1857 Reuben Clements surveys southern half of T19N, R6E
- 1860 U.S. Congress authorizes Baca/Town of Las Vegas land grant trade
- 1860 Baca heirs select Baca Float #1 in Jemez Mountains
- 1862 U.S. Congress enacts U.S. Homestead Act of 1862
- 1863 Navajo Long March curtails Navajo raiding in Jemez Mountains
- 1876 Wheeler Expedition issues Map 69 of Santa Fe region
- 1876 Sawyer & McBroom survey boundary of Baca Location No. 1
- 1876 Sawyer & McElroy survey boundary of Ramón Vigil Grant
- 1877 Plat of Ramón Vigil Grant approved June 5, 1877
- 1879 Ramón Vigil sells grant to Father Thomas of Aquinas Hayes
- 1882 Padre Hayes protests Sawyer & McElroy survey
- 1884 Hayes sells grant to eastern investors Winfield Smith and Edward Sheldon
- 1885 Smith and Sheldon protest Sawyer & McElroy survey of Ramón Vigil Grant
- 1885 Sheldon sells his interest in grant to George Fletcher of Detroit
- 1887 Juan L. Garcia files first homestead entry on Pajarito Plateau to go to patent
- 1890 Daniel B. Merry surveys northern half of T19N, R6E

- 1892 Benigno Quintana files for homestead entry on Los Alamos Mesa
- 1893 Three families file for Homestead Entry
- 1896 Edgar Lee Hewett “discovers” the Pajarito Plateau
- 1898 Henry S. Buckman contracts with Smith & Fletcher to log Ramón Vigil Grant
- 1898 Seven families file for Homestead Entry
- 1899 Mariano Otero buys Baca Location #1 under Valles Land Company
- 1899 Winfield Smith dies
- 1900 Smith estate and Fletcher sell grant to Ramón Land & Lumber Company
- 1900 Edgar Hewett proposes Pajarito National Park
- 1900 Secretary withdraws part of township for Pajarito National Park, July 26
- 1902 Mariano Otero completes road from Santa Fe/Buckman to Sulphur Springs
- 1902 H.S. Buckman sells logging assets and leaves New Mexico
- 1903 George Fletcher dies
- 1903 Pedro Sánchez heirs sue Smith and Fletcher estates for share of Buckman lease
- 1903 Land withdrawn to establish Jemez Forest Reserve
- 1904 Mariano Otero dies
- 1905 *Sánchez vs. Fletcher* settled in favor of defendants (Smith and Fletcher estates)
- 1905 Santa Clara Canyon tract transfer to Pueblo by Executive Order
- 1905 Reserved Forest Proclamation, October 12, 1905
- 1906 U.S. Congress enacts Forest (Homestead) Act
- 1906 U.S. Forest Service begins installation of Jemez Preserve telephone line
- 1908 Harold H. Brook applies for homestead entry on Los Alamos Mesa
- 1909 Frederico Otero sells Baca Location #1 to Redondo Development Corporation
- 1910 Ramón Land & Lumber Company contracts to purchase Ramón Vigil Grant
- 1911 Ramón Land & Lumber forfeits title to Ramón Vigil Grant

- 1912 T.J. Sawyer cutting timber on Pajarito Plateau
- 1912 William B. Douglass examines and resurveys Ramón Vigil Grant boundaries
- 1912 William B. Douglass resurveys Baca location boundaries
- 1912 U.S. Forest Service appropriates road money for Santa Fe National Forest
- 1912 General Land Office sues Redondo Development Corporation for breach of boundary
- 1913 Forest Service issues first map of Jemez District
- 1914 Pajarito Land Corporation (Ashley Pond) purchases Ramón Vigil Grant
- 1915 Jemez and Pecos national forests merged to become Santa Fe National Forest
- 1916 Brook and Ashley Pond incorporate a school for boys
- 1917 Pond purchases Brook's holdings on Pajarito Plateau
- 1918 Los Alamos Ranch School enrolls first student
- 1918 Frank Bond purchases Ramón Vigil Grant
- 1918 Alexander Ross, MD, establishes Anchor Ranch on Pajarito Mesa
- 1918 Judge rules on Baca survey lines in favor of Redondo Development Corporation
- 1920 Hall and Devendorf conduct Independent Resurvey Baca location boundaries
- 1921 McCurdy cutting timber on Pajarito Plateau
- 1921 Construction complete on Culebra and Otowi hill roads
- 1921 Adolfo Garcia files last application for homestead entry on Pajarito Plateau
- 1921 A.J. Connell trades 40 homestead acres in Santa Fe County for Pajarito land
- 1925 Supervisor of Surveys replaces Office of Surveyor General
- 1926 George and Frank Bond purchase Baca Location #1 from Redondo Development
- 1928 State Highway Department designates State Road 4
- 1934 Frank Bond sells Ramón Vigil Grant to the U.S. Soil Conservation Service
- 1935 CCC camp for construction work on State Road 4 located at S Site
- 1935 U.S. Soil Conservation Service contracts for aerial photographs of plateau

- 1939 Secretary of Agriculture transfers Ramón Vigil Grant to U.S. Forest Service
- 1941 World War II begins
- 1943 U.S. Government files condemnation suit against 9,040 acres of land on plateau
- 1945 Frank Bond dies in Pasadena, California
- 1945 World War II ends

APPENDIX II: Characteristics of Historic and Homestead Roads

Photographer: Laurence Campbell

In developed areas of the Pajarito Plateau, surviving historic and homestead roads are located in canyons and on slopes unsuitable for other uses. In Los Alamos National Laboratory, some mesa-top roads are well-preserved in buffer areas. The roads were utilitarian structures showing mere leveling in areas of moderate terrain. However, where the terrain becomes more challenging, road building required substantial development work; structural details remain and are clearly visible. Associated features, such as fence lines and small dams for stock ponds, occasionally occur beside the roads.

Historic roads were constructed to accommodate wagons pulled by draft animals, primarily horses. Construction details are similar throughout the Pajarito Plateau. For the most part, the roads were narrow, one-lane, utilitarian routes. Roads were approximately three meters wide with few turnouts for passing on steep slopes. The roads tightly followed the contours of the land. No cut-and-fill stretches were found. Road grades could be steep—up to 18 percent in short sections. The inside wall was excavated with no shoring or erosion control; excavations could reach as much as three meters in height. The builders primarily used soil and rock; if they used wood, few remains have survived. Rarely, the builders installed wooden cribbing, indicating that they were aware of the technique. Cribbing is not common on area homestead roads. We never found cement used on a historic road.

Because most of these remaining roads are on steep slopes, the roadbeds have eroded, often up to a meter below the original surface. Subsequent horse, foot, bicycle, and occasional wheeled traffic contributed to the erosion.

Numerous logging roads dating from 1900–1930 exist on the Pajarito Plateau. Many have features characteristic of historic roads. Some are substantially built but neither appear on maps nor access historic structures or sites. These logging roads are not addressed in this appendix.

This appendix also shows characteristics of Los Alamo Ranch School trail work. The Ranch School employed professional road construction companies to build their roads. Their roads do not conform to the features described above and are not addressed in this appendix.



Roads built along sections of bedrock retain ruts worn by numerous wagon trips. Most ruts have been widened by subsequent horse, foot, and bicycle traffic. Note the step-like feature to the left of the ruts, a common characteristic of homestead roads. Note the outer embankment of the road to the right of the ruts that shows the original level of the roadbed. This road is narrow along a one-mile route, with no place wide enough for two wagons (or even a horse) to pass, implying use by a single family. The road served the Lujan compound on North Mesa.



Homesteaders built crude rock embankments on the outside edges of the roads along canyon sides. This feature is found on most roads on the plateau, even if only a few courses high. Rocks used for embankment work were not shaped and of various sizes, but they supported the roadbeds for nearly a century.



When large boulders or bedrock had to be removed to accommodate the roads, builders used metal picks, creating a characteristic fluting pattern formed by parallel pick marks. Pick marks are a common feature of homestead roads, sometimes creating edges only a few inches high.



Some roads required extensive rock cutting to gain the width necessary to accommodate wagons. The builders of this road north of Rendija Canyon never received homestead patent.



The narrow rut is the width (three inches) of the metal rim of a wagon wheel. However, there is no corresponding rut remaining along the outer edge of the road, casting doubt on its origin. Embankment work indicates that this bedrock surface was the original level of the road. This road descended into Bayo Canyon; anecdotal stories claim that wagons carried products from McCurdy's Mill (1910s–1920s) on the golf course mesa down this road.



Characteristic step feature to the left of the ruts shows pick marks cut in the bedrock above, creating a low wall. The step is at the level of the original roadbed. This is the Grant Road leading from the head of Bayo Canyon to Guaje Pines Cemetery in Rendija Canyon.



Crude rock embankments are common along historic roads. Although the rocks were primarily cleared from the roadbed or cut from the upper bank, most show some deliberate placement. This is the Grant Road leading from the intersection of Diamond Drive and San Ildefonso Road to Guaje Pines Cemetery.



Cut rock work is common along steep slopes of the Pajarito Plateau. This road provides access to a beanfield that never went to homestead patent, although homesteaders cultivated the mesa well into the 1930s.

In addition to homesteaders, the Los Alamos Ranch School contributed to developing the area's transportation system. The curriculum included public works to improve the community's infrastructure. The students became skilled at masonry work and the trails still retain fine masonry embankments. The Ranch School trails are distinctive and unmistakable.

Ranch School trails were built as horse trails. They were never upgraded to roads.

Ranch School trails traverse inaccessible terrain, often steep cliffs. Moderate grades were maintained by numerous switchbacks.

Construction often involved creating level ledges to accommodate the trails so they were suitable for horses.

The finest masonry rockwork is on Ranch School trails. Courses are uniform, even, and well banked for stability.



This fine rock embankment in Acid Canyon illustrates Ranch School masonry techniques.



Ranch School students incorporated features of the terrain into their embankment work along the Camp Hamilton Trail.



Ranch School students constructed this passage through solid rock on the Camp Hamilton Trail to accommodate horses. Note the uniform pick marks on the sides of the trench. The trench is over six feet deep.

Appendix III: Maps and Surveyors Notes

Maps Cited

(Note: Many U.S. Government maps are available for copying and digital reproduction at the United States Federal Archives, Denver, Colorado. Surveyors' maps are available on microfiche in the reading room, Bureau of Land Management, Santa Fe, NM.)

- c1602 Map, Enrique Martinez. *Collection:* Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM. Discussed in John Kessell, *Kiva, Cross, and Crown*, National Park Service, 1979, p. 91. Kessell credits the map to the Archivo General de Indias, Sevilla, Spain.
- 1758 Don Bernardo de Miera y Pacheco, Map which don Francisco Antonio Marín del Valle, governor and Captain General of this Kingdom of New Mexico, ordered drawn in conjunction with the tour of inspection he made of his jurisdiction..., in John Kessell, *Kiva, Cross, and Crown*, National Park Service, 1979, p. 510–511.
- 1779 Don Bernardo de Miera y Pacheco, *Plano de la Provincia del Nuevo Mexico*. *Collection:* Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1890 U.S. Deputy Surveyor Daniel B. Merry. Frac Township No. 19 North Range No. 6 East New Mexico Prin Meridian. *Collection:* microfiche, Bureau of Land Management, Santa Fe, NM.
- 1898 Walter G. Marmon, Sketch Map of Baca Location No. 1, Exhibit No. 2, *Whitney vs Otero*, Case No. 3632, New Mexico District Court, 1893–1898 *Collection:* Federal Archives, Denver. Courtesy of Thomas Merlan, Santa Fe.
- 1876 1st Lieut Geo. M. Wheeler, Map 69, Issued April 26, 1876. *Collection:* Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM. G4322, N6, 1876, W4
- 1900 Edgar L. Hewett. Archaeological Map of Pajarito Plateau Territory of New Mexico, New Mexico Normal University, Expedition of 1900, K.M. Chapman Draftsman, *Collection:* Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1904 Edgar Lee Hewett; John B. Tarbert, Cartographer, Archaeological Map of Pajarito Park, New Mexico, Pajarito Park Sheet, *Collection:* Bureau of American Ethnology, *Collection:* Archives of USGS Station, Bandelier National Monument.
- 1910 U.S. Geological Survey. Edition of April 1892, reprinted April 1910. Original given to Janie O'Rourke by Bandelier National Monument.

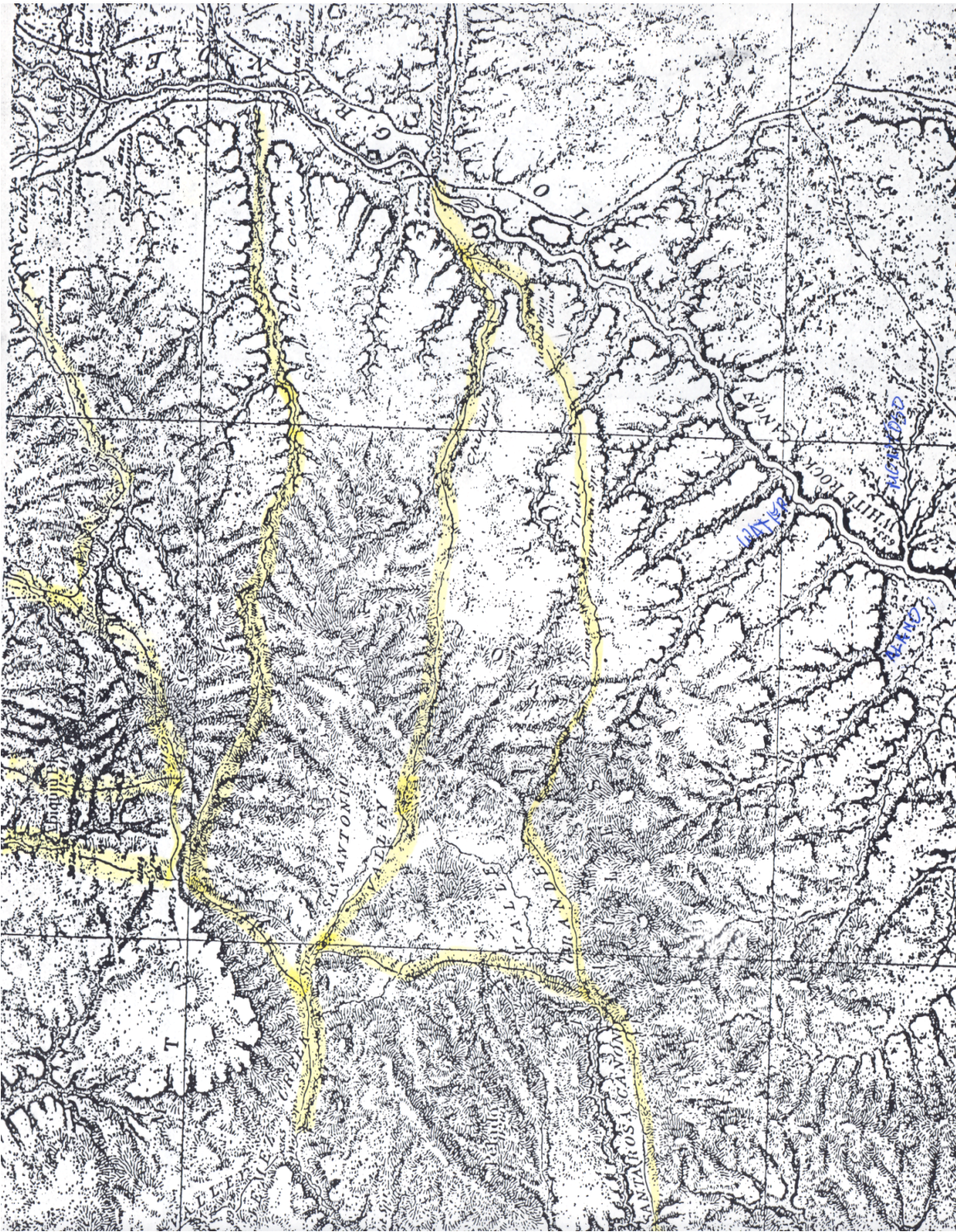
- 1912 John D. Harrington. Map 16, San Ildefonso Northwest Region and Map 17, San Ildefonso Southwest Region, *Ethnogeography of the Tewa Indians*, In Twenty-Ninth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1907–1908, W.H. Holmes, ed., U.S. Government Printing Office, Washington, D.C., pp. 260, 278.
- 1912 William B. Douglass, Map for Restorative Survey of the N., S., E., and W. Bds of the Ramón Vigil Grant, *Collection*: microfiche, Bureau of Land Management, Santa Fe, NM.
- 1913 Jemez National Forest, New Mexico, New Mexico Principal Meridian, U.S. Department of Agriculture, Forest Service, 1913, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1914 Fire Map, Jemez Nat'l Forest, 1914, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1915 Santa Fe National Forest, Jemez Division [Temporary Base Map], 1915, Forest Service, District 3, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1916 Bandelier National Monument within the Santa Fe National Forest New Mexico, New Mexico Principal Meridian, U.S. Department of Agriculture, Forest Service, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1918 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1918, U.S. Department of Agriculture, Forest Service, Henry S. Graves, Forester, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1921 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1921, U.S. Department of Agriculture, Forest Service, W.B. Greeley, Forester, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1923 Santa Fe, New Mexico Principal Meridian, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM, 78.95 K 1923, Sheet 15.
- 1924 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1924, U.S. Department of Agriculture, Forest Service, W.B. Greeley, Forester, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1925 Fire Map, 1925, West Half, Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, U.S. Department of Agriculture, Forest Service, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.

- 1925 Santa Fe Map to Accompany: L. Boundaries–Santa Fe; National Park of the Cliff Cities, D. F. Letter of June 1, 1925, Supervisor’s Letter of June 8, 1925, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1925 Santa Fe Map to Accompany: L. Boundaries–Santa Fe (National Parks) letter of September 30, 1925, F. E. A., *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1927 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1927, U.S. Department of Agriculture, Forest Service, W.B. Greeley, Forester, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1928 Road Map, State of New Mexico, issued by State Highway Department, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1929 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1929, U.S. Department of Agriculture, Forest Service, R.Y. Stuart, Forester, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1932 Bandelier National Monument, Map Showing Those Portions of Lands Comprising the Monument, Office of the Chief Engineer, San Francisco, Calif., Dec. 1932, U.S. Department of the Interior, National Park Service. *Collection*: Bandelier National Monument.
- 1932 Map of New Mexico Showing State of Construction, State and Federal Highways, Compiled by New Mexico State Highway Commission, May 1932, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1933 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1933, U.S. Department of Agriculture, Forest Service, R.Y. Stuart, Forester, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1936 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1936, U.S. Department of Agriculture, Forest Service, 1936, West Half, F.S. Silox, Chief, *Collection*: Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.
- 1937 Ramón Vigil Grant, Forage Map, Rio Grande District, Albuquerque, New Mexico, Department of Agriculture, Soil Conservation Service, *Collection*: Archives of USGS Station, Bandelier National Monument.

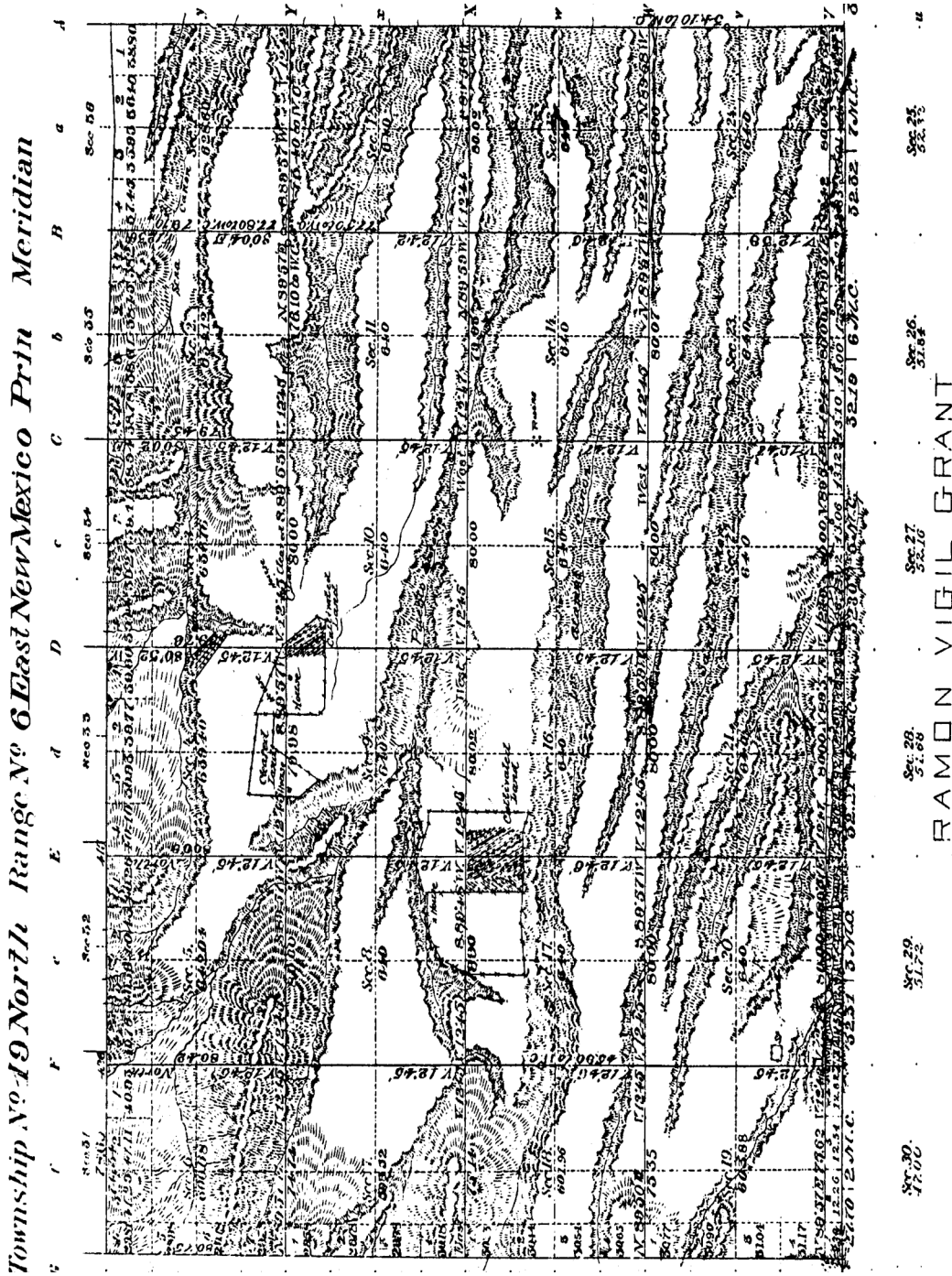
- 1938 U.S. Cadastral Engineer Charles W. Devendorf, Dependent Resurvey of T19N, R6E.
Collection: microfiche, Bureau of Land Management, Santa Fe, NM.
- 1943 Los Alamos Ranch School & vicinity including portions of Santa Fe & Sandoval Counties, Louis Hesch, Cartographer, courtesy Georgia Strickfadden, Los Alamos.
- 1947 Zia Company, Real Estate, Los Alamos Demolition Range, Los Alamos, New Mexico, Atomic Energy Commission, War Department, O.G.E. Construction Division.
Collection: Los Alamos Historical Museum, M1989-79-1-19.
- 1950 Santa Fe National Forest, New Mexico, New Mexico Principal Meridian, 1950, U.S. Department of Agriculture, Forest Service, 1936, Lyle F. Watts, Chief, *Collection:* Museum of New Mexico Fra Angelico Chavez History Library, Palace of the Governors, Santa Fe, NM.



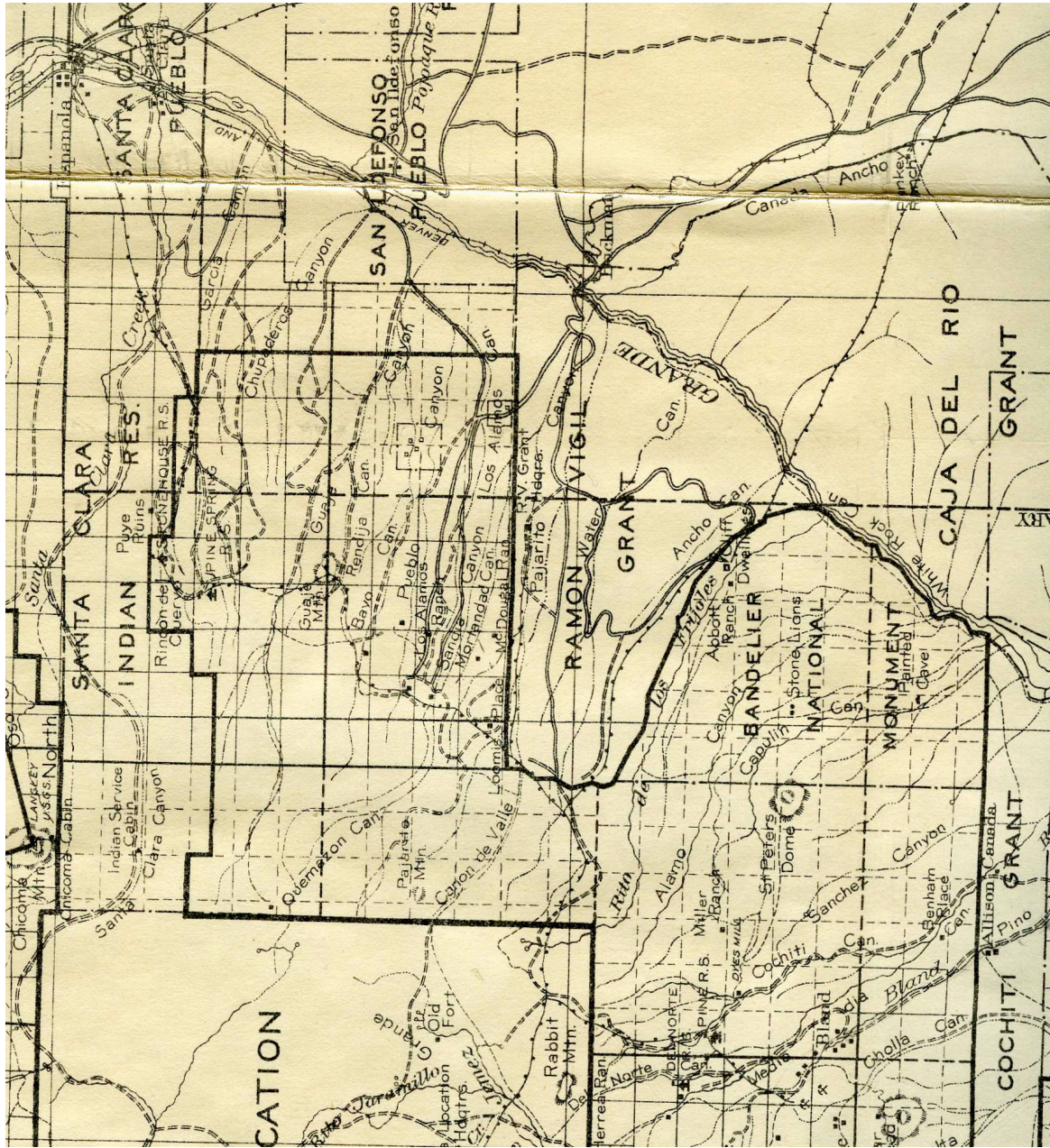
1779. Don Bernardo de Miera y Pacheco: *Plano de la Provincia del Nuevo Mexico*, showing a large *Valle de los Bacas* west of San Ildefonso. Because Miera's map predates the Baca Location #1 by a century, the name implies that Hispanic settlers grazed cattle in the valles of the Jemez Mountains. The Pajarito Plateau lies between the *Valle* and the population centers along the Rio del Norte.



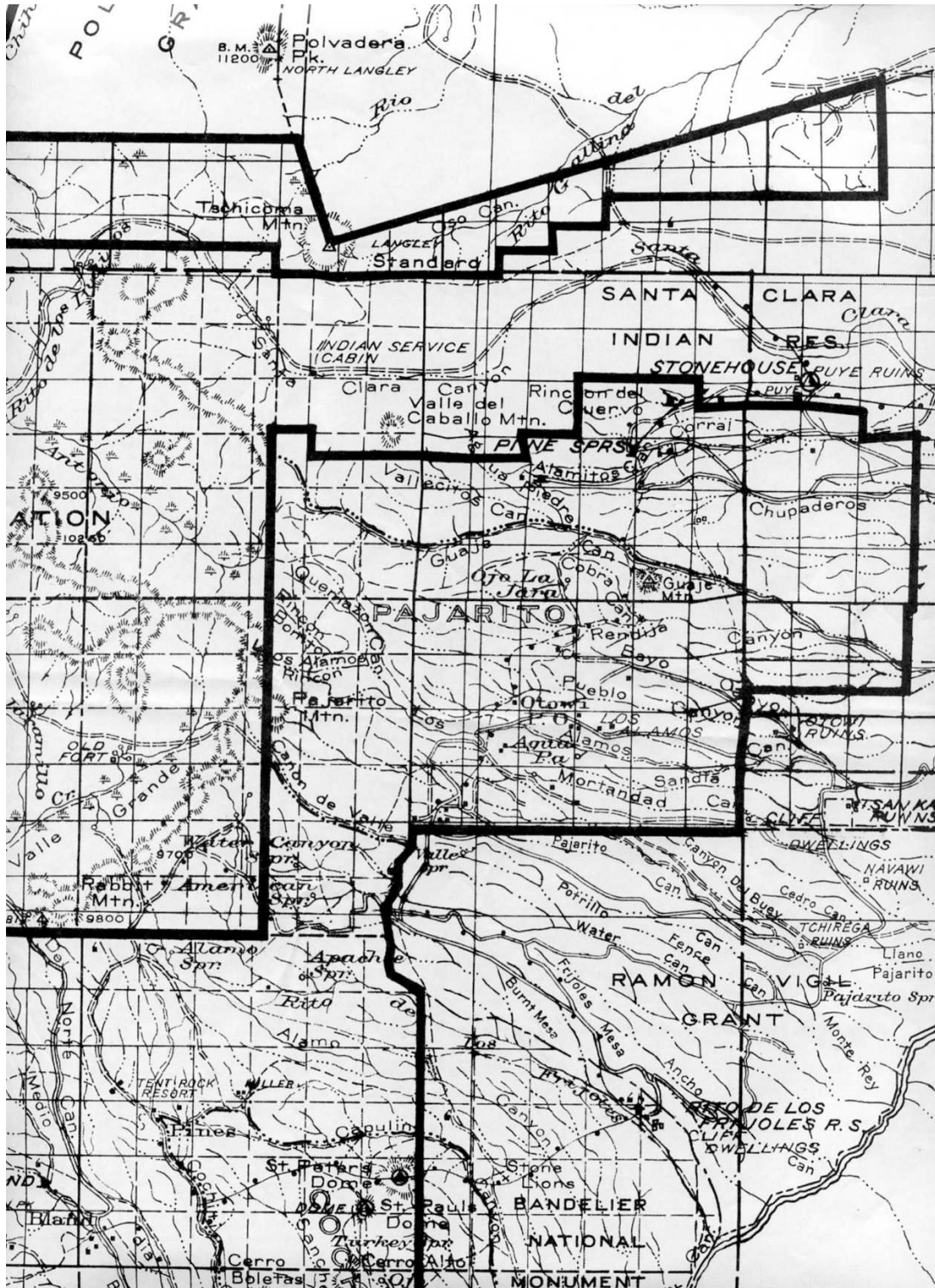
1876. Map 69 of the *Geographical Surveys West of the 100th Meridian* (Wheeler Report). The Los Alamos area lies between *Chiquito* (Guaje Canyon) and the *Jemez Trail*. Rendija, Bayo, Pueblo, and Los Alamos canyons are not depicted on this map. Wheeler's surveyors gathered topographic data by triangulating from high peaks in the Sangre de Cristo Mountains.



1890. Daniel Merry, U.S. Deputy Surveyor. *Map of Fractional Township No. 19 North Range No. 6 East New Mexico Principal Meridian*. Note fenced and cultivated areas on the present golf course (Section 9, upper center) and Los Alamos Mesa (Section 16/17, left of center). Homestead entry was not filed on these parcels until 1892. Merry shows one road in *Los Alamos Canon*, lower right.



1923: U.S. Forest Service. By 1923, the map shows the well-developed Ranch School Road up the east tip of Los Alamos Mesa and second road from Water Canyon on the route of present-day State Road 4. This road is not on the 1923 Department of Agriculture map.



1936. U.S. Forest Service. By 1936, the Buckman Road is a secondary route and the road up Los Alamos Canyon becomes a trail; the Rendija Canyon Road is gone. The Ranch School and Llano Largo roads are the main routes across the Pajarito Plateau. The switchback up the scarp at the Back Gate is in place.

Surveyors' Notes Cited

- 1857/11 Clements, Reuben E.: Field Notes of the Survey of the Lines between Ranges 5 & 6 East, Townships 17, 19 North Ranges 6 & 7 East. Townships 18 & 19 North. Boundary line between Townships 17 & 18 North, Range 6 East; Townships 18 & 19 North, Range 6 & 7 East
- 1857/10 Clements, Reuben E.: Township 19 N. Range 6E.
- 1857/09 Garretson, John W.: Township 19N. Range 5 East (Baca Location)
- 1876/06 Sawyer, Daniel; McBroom, William: Baca Location No. One Grant (No. 20)
- 1877/04 Sawyer, Daniel; McElroy, Stephen C.: Survey of Ramón Vigil Grant (No. 38)
- 1882/08 Jones, Robert M.: EB. T19N R6E N.M.M.
- 1890/07 Merry, Daniel B.: Exterior Boundaries of T.19N, R.6E.
- 1890/07 Merry, Daniel B.: Subdivision Lines of Frac. Township No. 19 North and Range No. 6 East of the Principal Base and Meridian in the Territory of New Mexico
- 1890/07 Merry, Daniel B.: Retracement of the North Boundary of the Ramón Vigil Grant (No. 38)
- 1911/6-7 Douglass, William B.: Examination of Surveys of the Ramón Vigil Grant
- 1912/7-10 Douglass, William B.; Neighbor, Hugh M.: Restorative Survey of the Boundaries of the Baca Location No. 1
- 1912/11-1913/9 Douglass, William B.: Restorative Survey of the N., S., E., and W. Bdys of the Ramón Vigil Grant
- 1913/8 Douglass, William B.: Restorative Survey of the N., S., E., and W. Bdys of the Ramón Vigil Grant
- 1916/9 Long, C.A.: Homestead Entry Survey No. 395, Santa Fe National Forest, State of New Mexico (Fermin Vigil)
- 1916/9-10 Long, C.A.: Homestead Entry Survey No. 393 Santa Fe National Forest, State of New Mexico (Locadio Archuleta)
- 1916/10 Long, C.A.: Homestead Entry Survey No. 394 Santa Fe National Forest, State of New Mexico (Andres Martinez)

- 1920/6-1921/8 Osterhoudt, L.A.; Hall, Wendell V.; Devendorf, Charles W.: Independent Resurvey of the Boundaries of Baca Location No. 1 Grant
- 1923/9 Meyers, Thomas F.: Homestead Entry Survey No. 499, Santa Fe National Forest, State of New Mexico (Anastacio Vigil)
- 1924/8 Hall, Wendell V.: Resurvey of a Part of the West boundary of T.19N, R.6E.; Retracement of a Part of the West boundary of the Ramón Vigil Grant; and Survey of a Part of the Subdivision of Fractional T.19N., R.5E.
- 1925/9 Meyers, Thomas F.: Homestead Entry Survey No. 499, Santa Fe National Forest, State of New Mexico
- 1927/6-8 Hall, Wendell V.: Independent Resurvey of North Bdy., Dependent Resurvey of West Bdy., and Subdivision of Fractional T19N, R7E and Dependent Resurvey of Part of North Bdy of Ramón Vigil Grant & W Boundary
- 1927/ Hall, Wendell V.: Independent Resurvey of Fractional T20N, R6E
- 1938/7-8 Devendorf, Charles W.: Dependent Resurvey of T19N, R6E

APPENDIX IV: Photographs of Historic and Homestead Roads

Collection: Los Alamos Historical Museum, Fuller Lodge, Los Alamos, NM

Aerial Photographs, Soil Conservation Service, 1935. Negatives on file.

Photo files R24L: nd. Road into Pueblo Canyon, looking west. Confluence of Pueblo and Los Alamos drainages off photo to lower left.

Photo files HS42M, HS 59566, 88.1118, nd. Two horse-drawn carriages and a mounted rider at bend on Otowi Hill Road, looking southeast.

Photo files R24H4: P1987-1040-1-2544, nd. Otowi Hill Road with mounted troop, looking west/northwest. Note rock embankments lower left and middle right. Note rock embankments and wood cribbing on upper switch.

Photo files R23D: nd. P1970-45-1-5057. Otowi Hill Road, looking northwest, showing road when upper switchback was abandoned and roadcut built at end of mesa. Note rock embankments and retaining fence with apparent slide at right end. Four vehicles on road.

Photo files R23D: P1989-13-1-3265, nd. Automobile on dirt road at base of Otowi Hill, looking west.

Photo files R24L, R3362(1), 77.323, nd. Aerial view of Los Alamos Mesa, looking northwest, showing Ranch School fields. North Mesa middle right. Los Alamos Canyon diagonal center. Note Mattie Brook Road, lower mid right at confluence of Los Alamos and DP Canyons. White lines are artifacts on negative.

Photo files R24L, P1985-883-1-995, nd. Aerial view of Los Alamos Mesa, looking north, showing Ranch School buildings. Golf Course homesteads middle right. Francisco Gonzales (Urban Park) homestead middle left. Pueblo Canyon left-right center. Homestead Crossing Road may be visible (with lens) center, lower mid right at confluence of Los Alamos and DP canyons.

Photo files R4197, 80.532, nd. Ranch School troop on Camp Hamilton Trail, looking northeast. Pueblo Canyon beyond.

Photo files R24H4: P1977-325-1-3586, nd. Ranch School troop at top of Breakneck Trail, looking east. Los Alamos Canyon below; Rio Grande Valley and Sangre de Cristo Mountains beyond.

Photo files R24L: R34581/77323, nd. Buckman Bridge in flood, looking southeast.

HS42M 2000.043.1.5936, nd. Rio Grande Bridge at Otowi Crossing, looking 1) southeast, 2) east, with notation Notice / Aviso. Two views.

Photo files HS42M: HS811-1990.077, nd. Road with horse and carriage. Location unknown. (Not Mattie Brook Road, not Bayo Canyon road)

Photo Archives, Museum of New Mexico, Chavez Library, Palace of the Governors.

#44207, nd. *Road on Pajarito Plateau New Mex.* Location Unknown (possibly Bayo Canyon).

#154780, nd. Field with shrubs; line of cliffs beyond. Caption reads: On road from Buckman's to Pond's residence after leaving the road to Judge Abbott's on the left. Tsirege site, New Mexico. Pajarito Canyon.

#53641, nd. Road, looking east toward Otowi Crossing and Buckman Mesa. Caption reads: Otowi Canyon Road to Rito de los Frijoles. This is the route of State Road 502.

#53642, nd. Road, looking northeast down Los Alamos Canyon toward San Ildefonso, Black Mesa at upper left-center. Caption reads: Otowi Canyon Road to Rito de los Frijoles.

#53643, nd. Road, looking west up Culebra Hill. Caption reads: Otowi Canyon Road to Rito de los Frijoles.

#53644, nd. Road, looking south at mid-wash, approximate site of San Ildefonso gas station & convenience store. Caption reads: Otowi Canyon Road to Rito de los Frijoles.

#53648, nd. Caption reads: Water Canyon Hill Road to Rito de los Frijoles. This looks like the road in Ancho Canyon, present route of State Road 4, looking southeast.

#53649, nd. Caption reads: Water Canyon Hill Road to Rito de los Frijoles. This looks like the road in Ancho Canyon, present route of State Road 4, looking northwest.

Library of Congress (www.loc.org, American Memory Search: Bandelier)

Photos copyright 1995–2005, Denver Public Library, Colorado Historical Society, and Denver Art Museum.

Call Number GB-7672. George Lytle Beam (1868–1935), *Road to Frijoles Canyon*, created between 1910 and 1925. Horse-drawn wagon with driver, in canyon with ponderosa pine trees. May be Ancho Canyon.

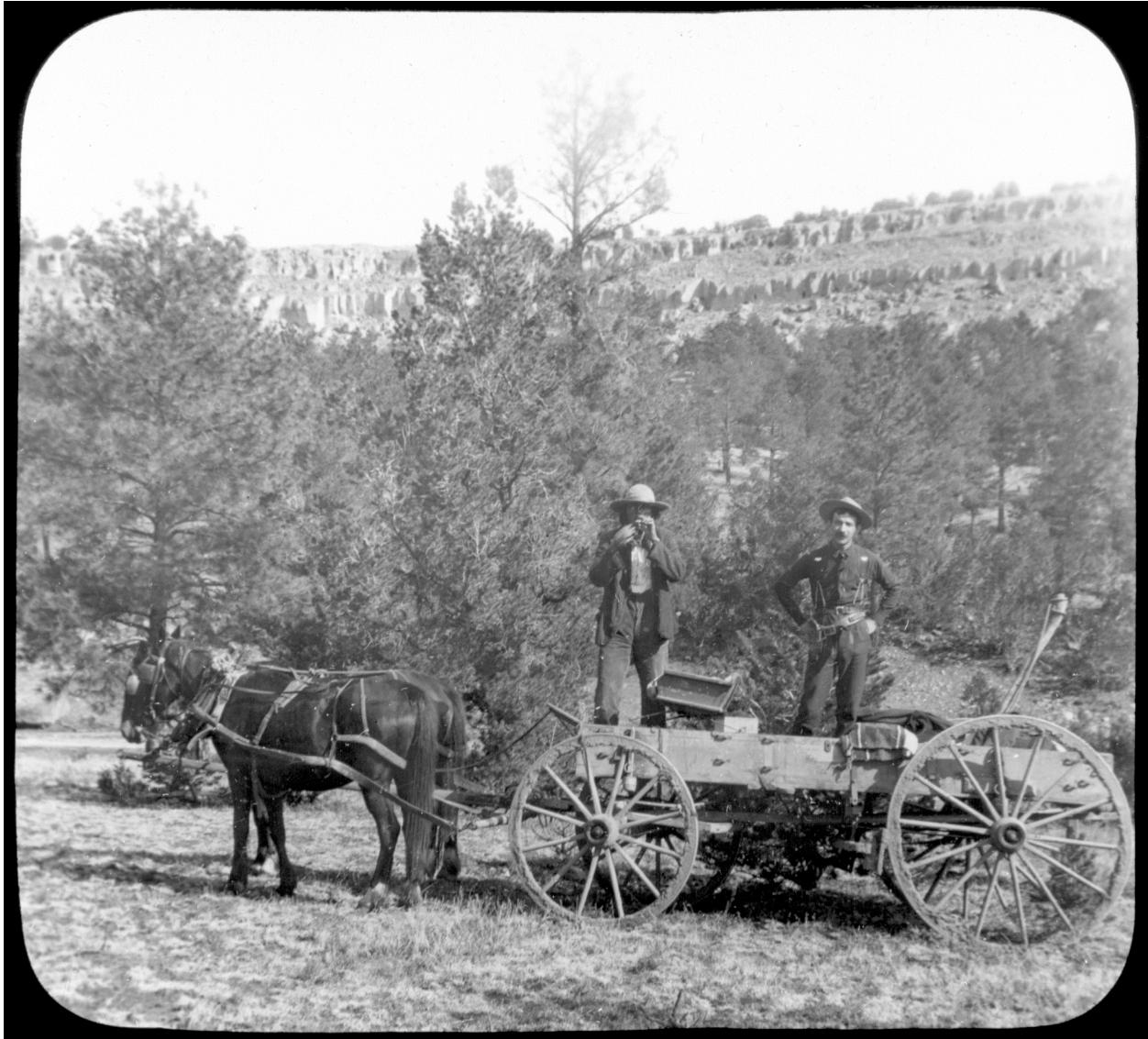
Call Number P-545. Horace Swartley Paley, *Pajarito Park*, created between 1905 and 1915. Wash in lower Los Alamos/Guaje Canyon, looking northeast. Road on right side of wash. Two buckboards center.

Call Number P-1234. Horace Swartley Paley, *Pajarito Park Ruins James (sic) Plateau: Roadway to Tyuonyi in Rito de los Frijoles Canyon*, 1915. Comment: "A team of two horses pull an automobile up a sandy road...." Riderless horse, three men plus driver. Location unknown.

Call Number P-1598. Horace Swartley Paley, *Pajarito Park Roadway*, 1909 or 1910. road or trail near top of mesa. May be top of Otowi Hill, looking west.

Call Number P-1619. Horace Swartley Paley, *Pajarito Park: road to cliff & mesa wall*, Created/Published 1915. Los Alamos Canyon, looking north; taken approximately from Tsankawi parking lot.

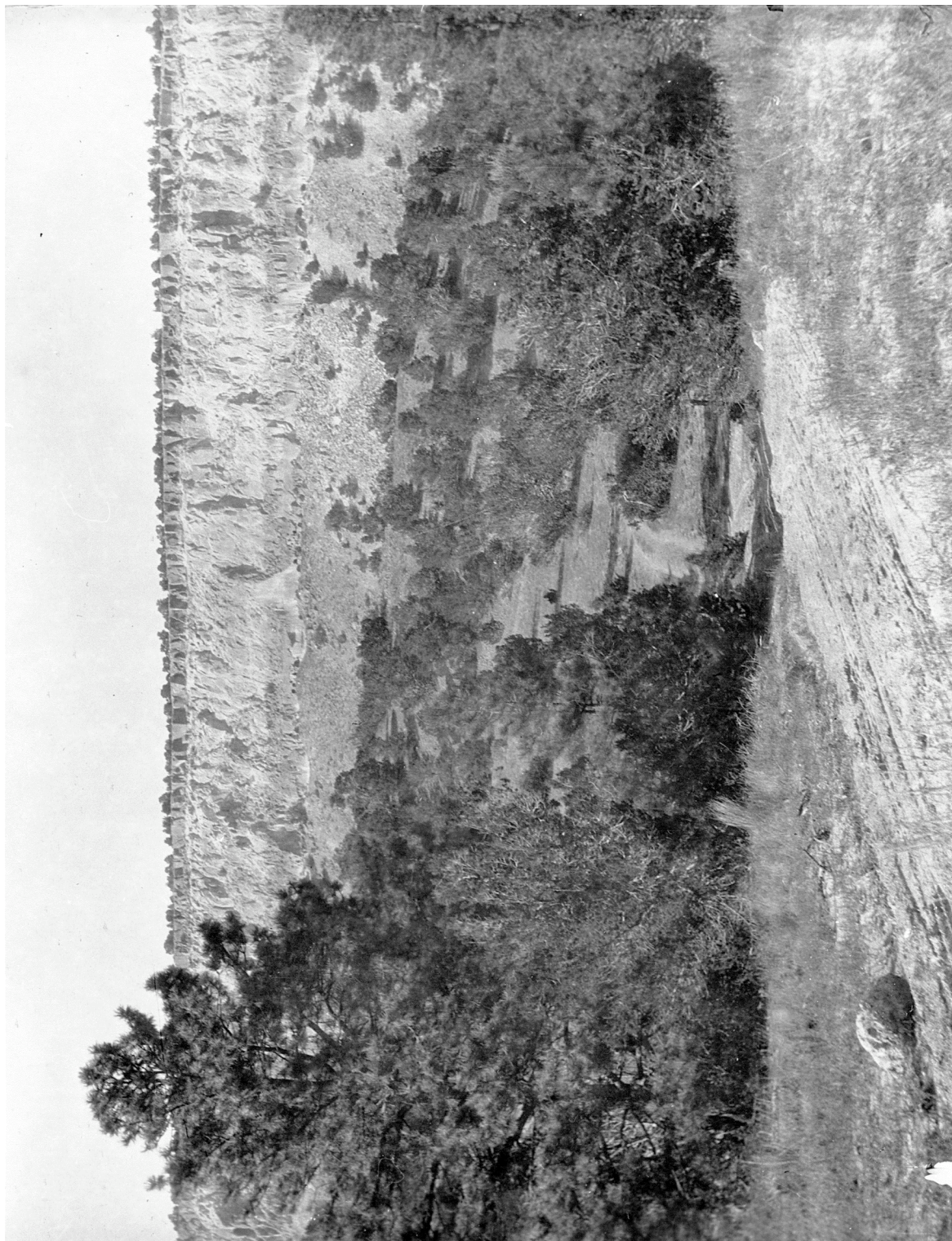
Call Number P-1621. Horace Swartley Paley, *Pajarito Park: Roadway to Cliff – trees and sagebrush in foreground*, 1915. Location unknown.



Estimated between 1921–1927. Jean Allard Jeancon, *Puye, NM*. Denver Public Library, Western History Collection, 101 vol. 3, 44.



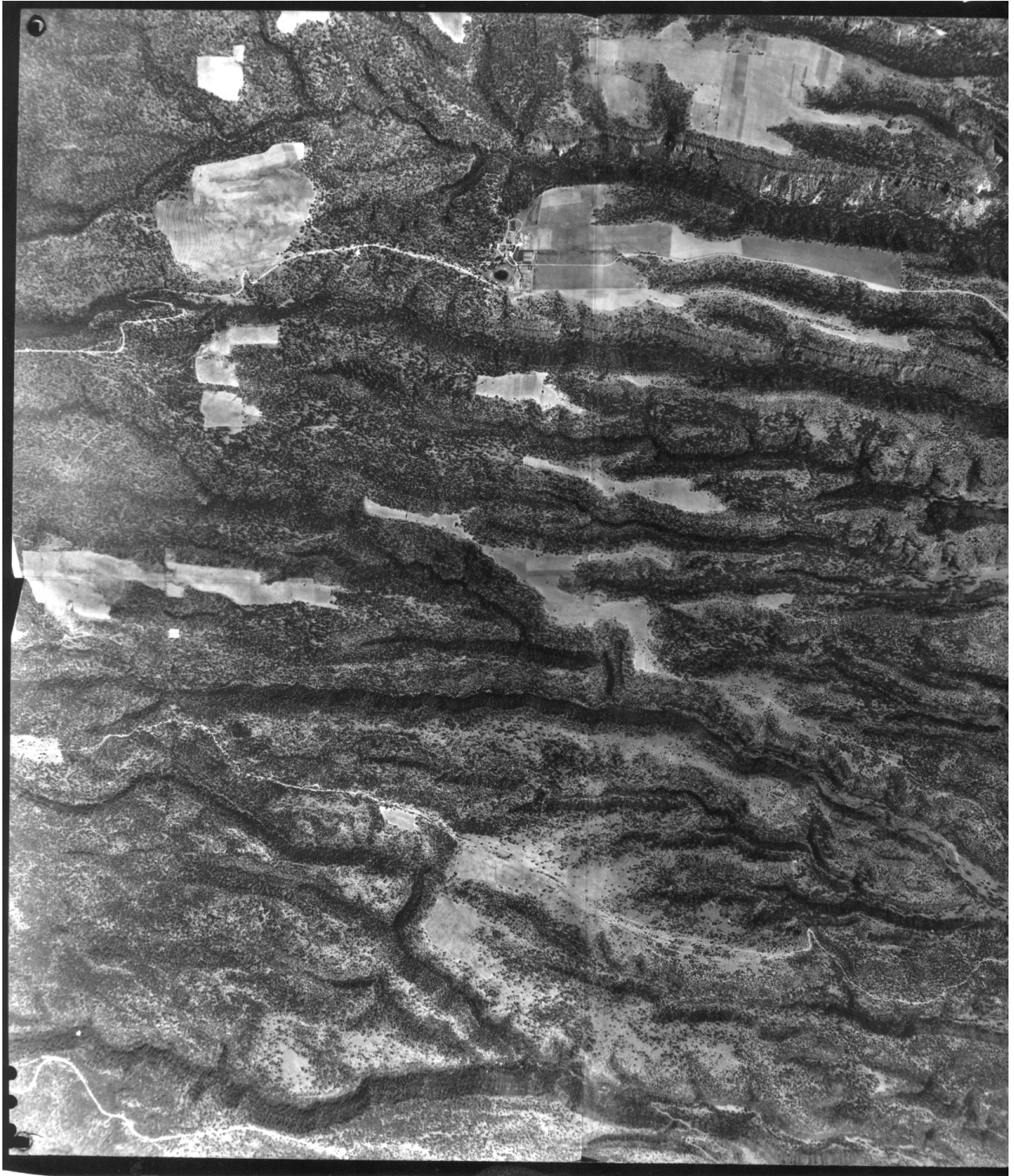
Estimated between 1910–1925. Road to *Frijoles Canyon*. George Lytle Beam, Denver Public Library, Western History Collection, GB-7672.



1915. Horace Swartley Paley, *Pajarito Park: road to cliff & mesa wall*. Los Alamos Canyon, looking north, from the approximate location of the Tsankawi parking lot. This is the road from Buckman Crossing to Los Alamos Mesa. Denver Public Library, Western History Collection, P-1619.



1915. Horace Swartley Paley, *Pajarito Park Ruins James (sic) Plateau: Roadway to Tyuonyi in Rito de los Frijoles Canyon*; comment: "A team of two horses pull an automobile up a sandy road...." Denver Public Library, Western History Collection, P-1619.



1935. Soil Conservation Service aerial survey, image 1478. North Mesa at top of photo. Los Alamos Mesa with Ashley Pond and Ranch School roads; West Road crossing Los Alamos Canyon at left. Pajarito Canyon across lower third; Llano Largo Road at bottom.



Photo files R24L, PI985-883-1-995, nd. Aerial view of Los Alamos Mesa, looking north, showing Ranch School buildings. Golf Course homesteads middle right. Francisco Gonzales (Urban Park) homestead middle left. Pueblo Canyon from left to right center. Homestead Crossing Road may be visible (with lens) center, lower mid right at confluence of Los Alamos and DP canyons. Los Alamos Historical Society.

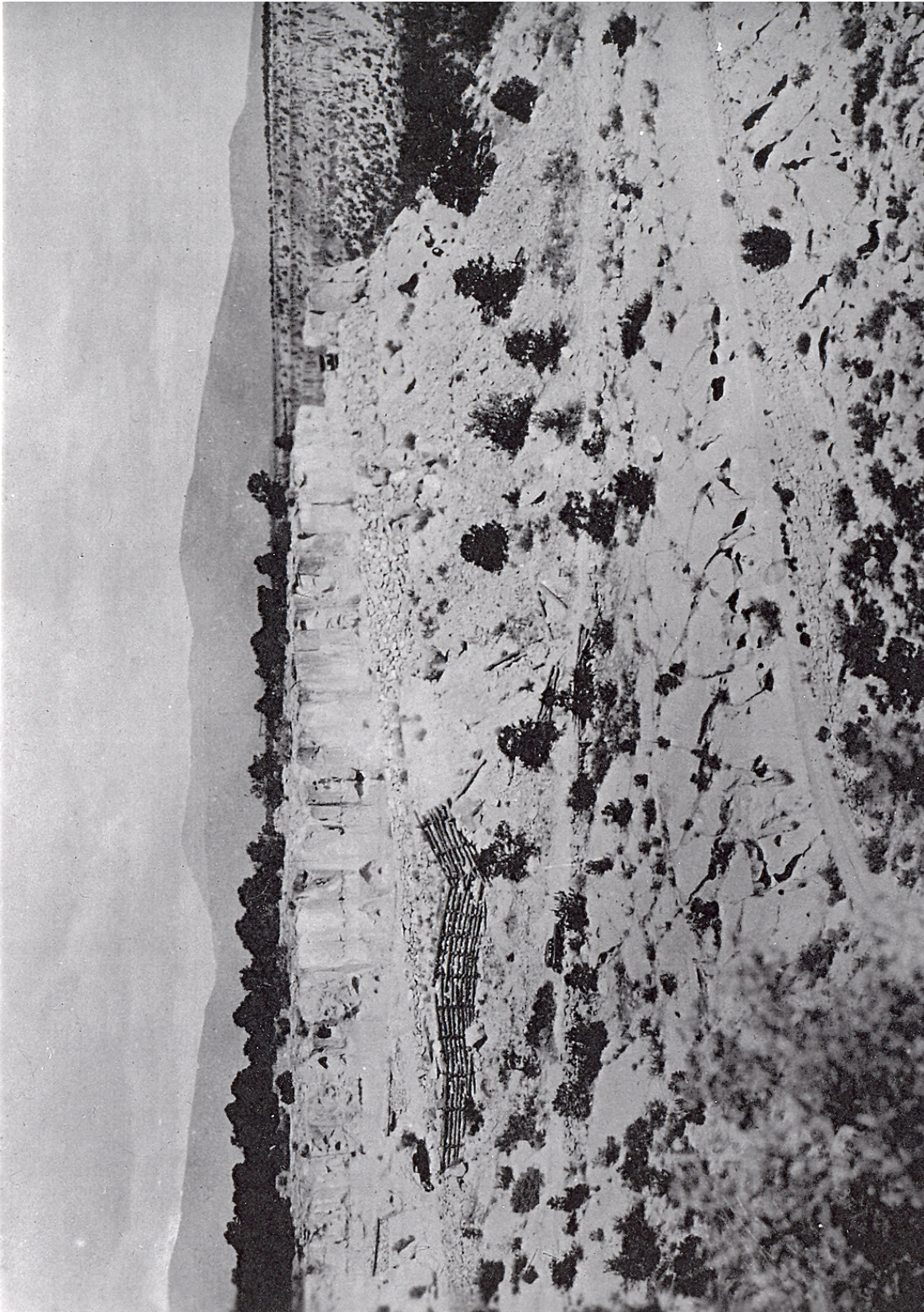


Photo files R23D: nd. PI970-45-1-5057. Otowi Hill Road, looking northwest, showing road after upper switchback was abandoned and road cut built at end of mesa. Note rock embankments and retaining fence with apparent slide at right end. Four vehicles on road. Los Alamos Historical Society.

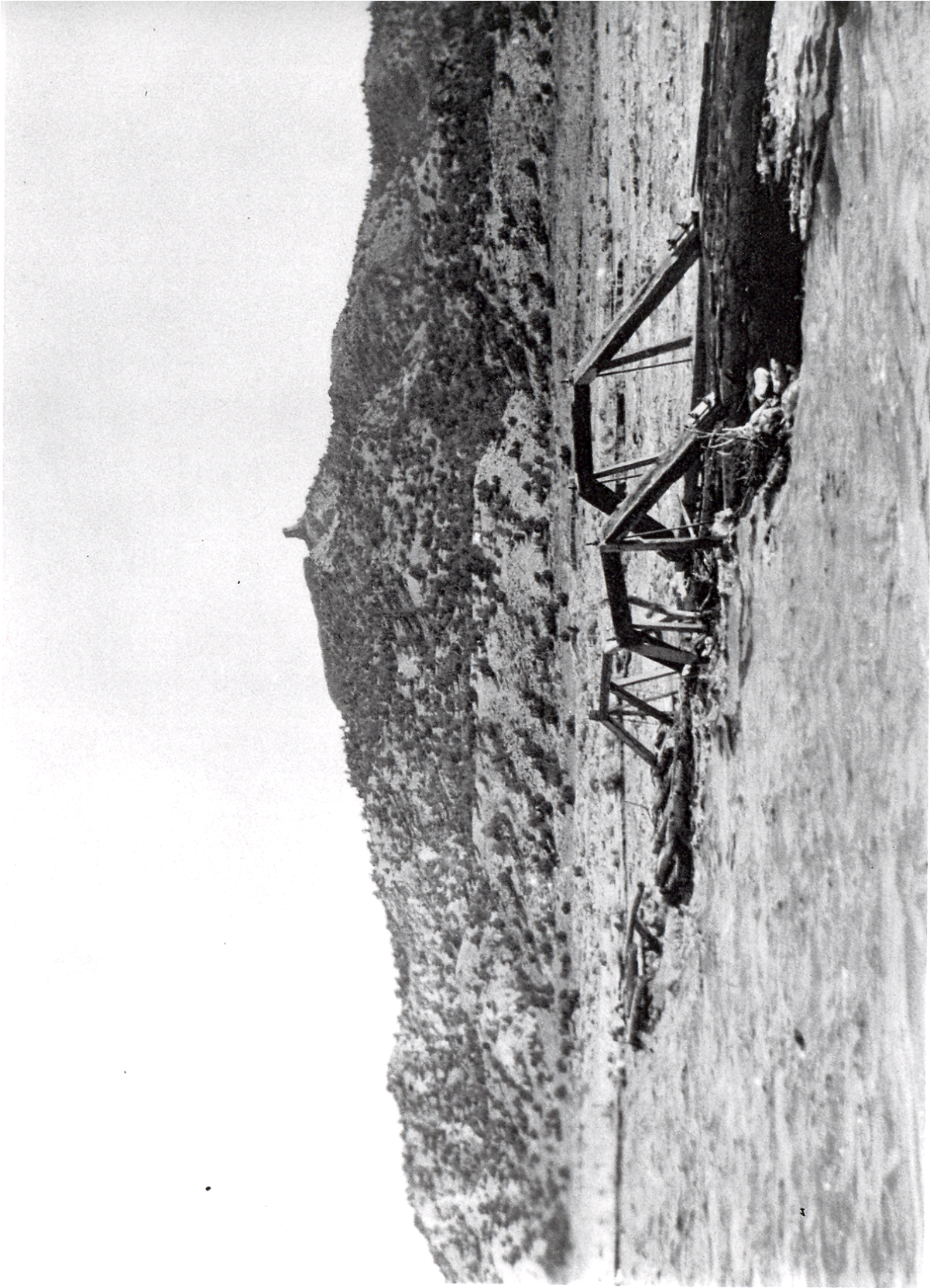


Photo files R24L: R34581/77323, nd. Buckman Bridge in flood, looking southeast. Los Alamos Historical Society.



Photo files R24L, R3362(1), 77.323, nd. Aerial view of Los Alamos Mesa, looking northwest, showing Ranch School fields. North Mesa middle right. Los Alamos Canyon diagonal center. Mattie Brook Road, lower mid right at confluence of Los Alamos and DP Canyons. White lines are artifacts on negative. Los Alamos Historical Society.

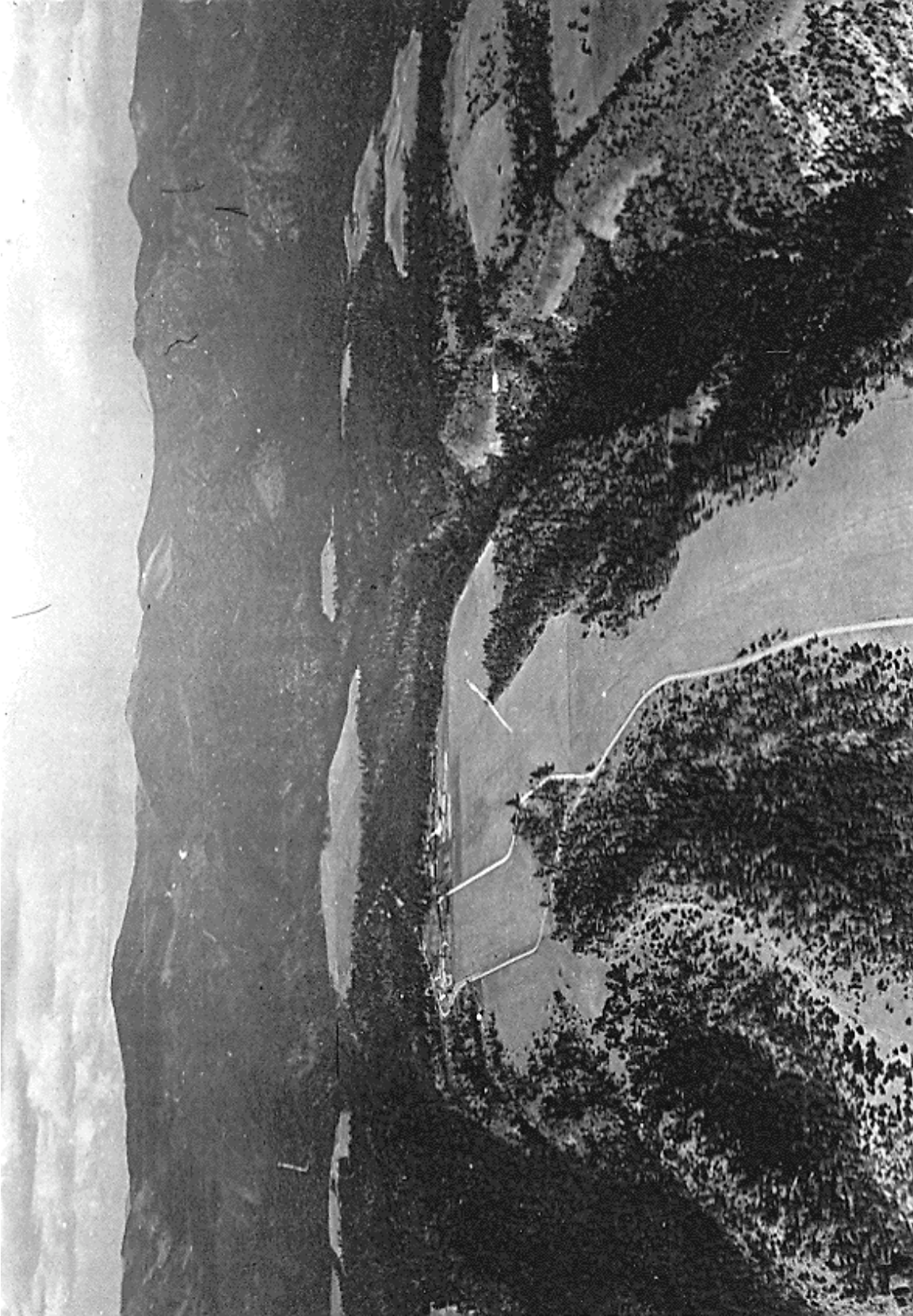


Photo Files R24L, R3154c, 77.373. Ranch School roads, looking west. Note Ranch School upper fields above school grounds, location of the first homestead in the Los Alamos area. Los Alamos Canyon on left. Los Alamos Historical Society.

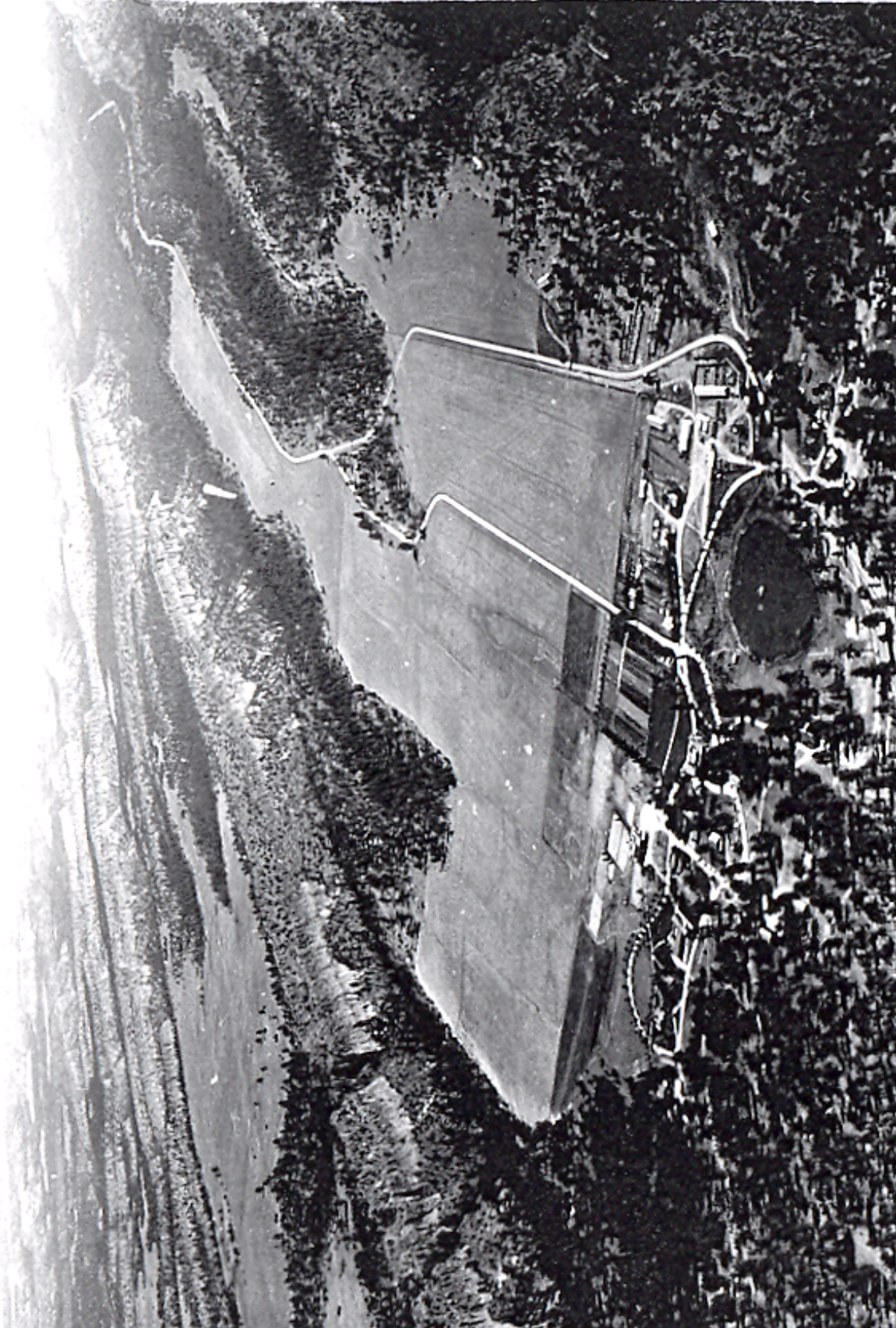


Photo Files R24L, R3154a, 77.373. Ranch School roads, looking east. Lujan homesteads on North Mesa, upper left. Mattie Brook Mesa upper right. Los Alamos Historical Society.



Los Alamos, New Mexico 87545