

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

FOR NPS USE ONLY  
RECEIVED APR 26 1978  
DATE ENTERED MAR 12 1979

**NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM**

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS  
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

**1 NAME**

HISTORIC Embudo Historic District

AND/OR COMMON

**2 LOCATION**

STREET & NUMBER 20 miles north of Española on State Highway #68

CITY, TOWN Embudo VICINITY OF #1 CONGRESSIONAL DISTRICT

STATE New Mexico CODE 35 COUNTY Rio Arriba CODE 039

**3 CLASSIFICATION**

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input checked="" type="checkbox"/> DISTRICT	<input type="checkbox"/> PUBLIC	<input checked="" type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE <input type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input checked="" type="checkbox"/> PRIVATE	<input type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> PARK
<input type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL <input checked="" type="checkbox"/> PRIVATE RESIDENCE
<input type="checkbox"/> SITE	<b>PUBLIC ACQUISITION</b>	<b>ACCESSIBLE</b>	<input type="checkbox"/> ENTERTAINMENT <input type="checkbox"/> RELIGIOUS
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input checked="" type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT <input checked="" type="checkbox"/> SCIENTIFIC
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER:

**4 OWNER OF PROPERTY**

NAME Roland Neidermayer / William G. Barnhouse / Bureau of Land Management  
Gas Company of New Mexico

STREET & NUMBER 17572 Newark Circle Box #3308 Box #1409

Irvine, Calif. 92714 Albuquerque, N.M. 87110 Santa Fe, N.M. 87501

**5 LOCATION OF LEGAL DESCRIPTION**

COURTHOUSE, REGISTRY OF DEEDS, ETC. Rio Arriba County Clerk's Office

STREET & NUMBER

CITY, TOWN Tierra Amarilla STATE New Mexico

**6 REPRESENTATION IN EXISTING SURVEYS**

TITLE State Register of Cultural Properties

DATE January 28, 1977  FEDERAL  STATE  COUNTY  LOCAL

DEPOSITORY FOR SURVEY RECORDS New Mexico State Planning Office, 505 Don Gaspar

CITY, TOWN Santa Fe STATE New Mexico 87503

# 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED      DATE _____
<input checked="" type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

## DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Located approximately mid-way between the northern New Mexico towns of Española and Taos, the Embudo Historic District lies in the narrow cañon of the Rio Grande on the river's west bank. "Embudo" (funnel), the name given by Spanish settlers in the 17th century, well describes this part of the cañon where its rocky hillsides, covered with cactus and juniper trees, rise steeply from the banks of the swiftly flowing river. Situated on a small plain where the valley suddenly widens, the historic district embraces a complex of structures erected circa 1880 by the Denver and Rio Grande Railroad, familiarly known in New Mexico as the "Chili Line." Also within the district, at its south end where the cañon again narrows sharply, is the U.S. Geological Survey Embudo Stream Gaging Station. Established in 1888 by order of Major John Wesley Powell, famous western explorer and pioneer hydrographer, the gaging station is the first unit of its kind to be built anywhere.

Access to the district is provided by a bridge over the Rio Grande extending from State Highway #68 which follows a narrow bluff between the hillside and the shoreline. The third structure built at Embudo to span the river, the present bridge is made entirely of wood except for rods and cables which brace the high trusses on each side. It was originally constructed at Española but was transported 20 miles upstream to Embudo in three sections after it had been swept from its previous location by a disastrous flood in 1920. The bridge is supported by two piers, one at midstream composed of log cribbing filled with rock, and one on the west bank made entirely of stone and masonry. Although the bridge has provided over 50 years of service at Embudo and has been recently rehabilitated, there is now a distinct sag in the east span which is disconcerting to travelers.

On the west side of the district next to the original D&RG right of way is the Embudo depot, a pitch roofed, 25'x30' frame structure. Some time soon after 1912 the building was covered with a veneer of indigenous river rock applied by station agent Henry W. Wallace. A consumptive who came to New Mexico in that year, Wallace recovered his health in the salubrious climate of the Southwest and lived on to enclose every nearby structure with stone. Even the interior walls of the ticket office in the depot are embellished with a wainscoting of quartz-like rock. The ticket window is composed of locomotive fire-door chains hanging from a piece of narrow gauge rail. Decorated with elaborate brackets under the eaves, the roof is covered with red composition material and is surmounted by two stone chimneys. Recently the roof has deteriorated sufficiently to permit water damage to a portion of the plaster ceiling in the ticket office. The original double doors into the baggage room in the north half of the building have been replaced by a window made from the original transom. The engineer's order board, mounted on an iron rod at right angles to the station wall, now droops forlornly to the ground.

Approximately fifty feet north of the station, and standing at right angles to it, is the freight depot. Of similar construction, it is

(See Continuation Sheet Page 1)

# 8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input checked="" type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

Within the boundaries of northern New Mexico's Embudo Historic District two elements are combined to make the area worthy of historic recognition. These include the cluster of original structures erected circa 1880 to service an important stop on the Denver and Rio Grande Railroad and the site of the first stream gaging station established by the U.S. Geological Survey in 1888, a significant advance in the science of hydrology. Seventeenth century Spanish documents indicate that the first settlement in the region to bear the name "Embudo" was at the present village of Dixon, two and one-half miles north where Embudo Creek flows into the Rio Grande. Because of its location on a main route between Taos and Santa Fe, Embudo was often mentioned in the accounts of New Mexico travelers, from 18th century Hispanic churchmen to 19th century U.S. military observers and contemporary railroad enthusiasts who were fascinated by the line's narrow gauge construction and the atmosphere of northern New Mexico.

In 1760 Pedro Tamarón, Bishop of Durango, passed through Embudo during a rare episcopal visitation of New Mexico and was followed six years later by Fray Francisco Atanásio Domínguez, official inspector for the Franciscan Order, who commented on the beauty of the location. After U.S. occupation of New Mexico Embudo was the scene of a skirmish in January, 1847 between U.S. troops under Colonel Sterling Price and Mexican and Taos Pueblo Indian insurrectos retreating to Taos after the battle of Santa Cruz de la Cañada, east of present Española. In 1854 Secretary of War Jefferson Davis allocated \$20,000 from a Congressional appropriation for improvement of the Santa Fe-Taos road through the village.

The present location of the historic district assumed importance in 1880 when the site was chosen to be a station on the D&RG, then building south from Alamosa, Colorado to Española. The name "Embudo" was taken from the older village. Originally conceived by entrepreneur "General" William Jackson Palmer as a trunk line connecting Denver with El Paso and eventually Mexico City, the line began construction from Denver along the front range of the Rockies in 1871. Defeated by its arch-rival, the Atchison, Topeka and Santa Fe, in the famous race for Raton Pass, the most desirable route for right of way into New Mexico, D&RG officials changed their point of approach to the west side of the Sangre de Cristos. Using an existing branch over La Veta Pass into Colorado's San Luis Valley, the executives proposed to build south from Alamosa.

After the necessary surveys were made, construction began from Antonito, Colorado towards Santa Fe in the spring of 1880. The territorial capital's aspirations were temporarily dashed, however, when D&RG officers drew up a ten year compact with the Santa Fe railroad in which the former agreed not

(See Continuation Sheet Page 2)

## 9 MAJOR BIBLIOGRAPHICAL REFERENCES

- Bloom, Lansing B. ed., "Bourke on the Southwest," New Mexico Historical Review. Vol. XII, No. 4, October, 1937.
- Chappell, Gordon, "To Santa Fe by Narrow Gauge: the D&RG's "Chili Line," Colorado Rail Annual. Issue No. 7, Golden, 1969.
- Frazier, Arthur H. and Wilbur Heckler, "Embudo, New Mexico, Birthplace of Systematic Stream Gaging," Geological Survey Professional Paper 778, Washington, 1972. (See Continuation Sheet Page 3)

## 10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY Approximately 18 acres.

UTM REFERENCES

A	1,3	41,3	76,0	4,0	0,7	4,2,0	B	1,3	41,3	7,0,0	4,0	0,7	0,6,0	
	ZONE	EASTING	NORTHING		ZONE	EASTING		ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
C	1,3	41,3	3,9,0	4,0	0,6	9,2,0	D	1,3	41,3	3,4,0	4,0	0,6	9,6,0	

VERBAL BOUNDARY DESCRIPTION (See Continuation Sheet #4)

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

## 11 FORM PREPARED BY

NAME / TITLE

John O. Baxter, Archivist

ORGANIZATION

State Records Center and Archives

DATE

February 7, 1978

STREET & NUMBER

404 Montezuma

TELEPHONE

827-2321

CITY OR TOWN

Santa Fe,

STATE

New Mexico 87503

## 12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL

STATE

LOCAL

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

*Russell W. Montan*

TITLE

State Historic Preservation Officer

DATE

4-10-78

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I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

*[Signature]*

DATE

3/12/79

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

KEEPER OF THE NATIONAL REGISTER

ATTEST: *Bill Labovch*  
KEEPER OF THE NATIONAL REGISTER

DATE *March 5, 1979*

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DATE ENTERED	MAR 12 1979

CONTINUATION SHEET

ITEM NUMBER 7 PAGE #1

reinforced on its east end with massive stone buttresses, also the work of Mr. Wallace. It is topped by the same composition roofing described above. The two structures are joined by a newer building which was used as a dining hall during the late 1960s when the complex was used briefly by Jémez House, a privately supported school and foster home. Towards the river to the east there are a meat house and root cellar, also encrusted in stone, which were used in conjunction with a dining room, no longer extant. When in operation it provided passengers with meals while the steam engines took on water and coal. Nearby stand three pitched roof log buildings erected in the 1940s after the railroad had sold the property to an eastern buyer who planned, unsuccessfully, to develop a riverside resort. An owner's residence and six-unit motel are south of the root cellar while the third, now used as a caretaker's house, is west of the depot across the abandoned right of way.

Rising approximately thirty-five feet above the old road bed across a small arroyo north of the other railroad structures is the tall water tower. Its cylindrical tank rests on a hexagonal base made of extremely heavy bridge ties braced and cross-braced with wood timbers and iron rods. Surmounted by a conical "tin" roof, the tank is made of double thicknesses of wood encircled by rods and turnbuckles. Although the outer layer has deteriorated somewhat on the tank's north side, it is otherwise in excellent condition. During the years when it regularly replenished the D&RG engines it was filled by a steam powered pump set among the cottonwoods along the river bank. Prior to 1940, one year before the tracks were taken up and the line abandoned, the north side of the arroyo was also the site of a fifty foot turntable used by auxilliary engines to help the mixed freight and passenger trains up the formidable 4% grade of the Barranca Hill to the north.

Separated by a barbed wire fence from the railroad buildings, the stream gaging station is one thousand feet southeast of the depot. During its 90-year history the station has been located in various places including a small row boat and at the base of one of the bridge pilings. Since 1914 its instruments for stream measurement have been installed at the present location, a small 6' square building standing on a concrete shaft with a ladder inside which reaches down to the water level. The upper portion is covered with the ubiquitous veneer of river rock and is topped by a red tile shed roof. Beside this structure, a one-man ferry runs across the river on a steel cable supported by steel tripods on each bank. When the Rio Grande is too deep to wade, this device permits the record keeper to propel himself over the water to gather necessary scientific data as to depth, width and velocity of the stream. Still used regularly by U.S.G.S. technicians, this portion of the district is in an excellent state of repair.

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RECEIVED	APR 12 1978
DATE ENTERED	MAR 12 1979

CONTINUATION SHEET

ITEM NUMBER 8

PAGE #2

to lay more than ninety miles of track into New Mexico in return for a monopoly of the lucrative traffic from central Colorado's Leadville area. Using somewhat shoddy construction methods, the D&RG was completed into Española, the ninety mile limit, on December 31, 1880 but another six years elapsed before a subsidiary, the Texas, Santa Fe and Northern, closed the thirty-four mile gap to Santa Fe.

Nine months after the line was opened a U.S. military observer, Lieutenant John G. Bourke, described part of his rail journey north from Española as follows:

At Embudo begins a cañon of great severity and much majesty. Here the train twists around the sharpest of curves, pushes up the steepest of grades where engineering skill of the highest order has been called into service to fight the obstacles interposed by nature...

Extra engines were required to propel the little trains over these "obstacles;" thus, the turntable was installed at Embudo to take care of the necessary "pushers." The "Chili Line" soon became the lifeline joining the Hispanic plazas and ranchos of the upper Rio Grande Valley to the larger world of commerce and trade. For many years the line's combination freight and passenger trains brought all kinds of L.C.L. (less than carload) merchandise into the area and was the prime carrier for its exports - lumber, livestock, apples and piñon nuts.

Embudo was selected for the stream gaging station because of its location in an arid region on a southwestern river unlikely to freeze in winter. Its proximity to the railroad which provided easy access into a remote area was also an important consideration. Established in 1888 under the direction of Frederick Haynes Newell, the station was part of a comprehensive program for resource management proposed by Major John Wesley Powell. Following his epic explorations of the Colorado River in 1869 and 1871, Powell realized the necessity for a Federal survey of western water resources, a need put forth in his controversial "Report on the Lands of the Arid Regions of the United States" published by Congress in 1878. His plan included several innovations in the development of hydrology as a science for optimum use of the nation's western land and water reserves. A full ten years elapsed, however, before Powell had the opportunity as director of the Interior Department's Geological Survey to put his theories into practise.

The gaging station at Embudo was established not only to collect data on  
(See Continuation Sheet Page 3)

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APR 26 1978

DATE ENTERED

979

CONTINUATION SHEET

ITEM NUMBER 8, 9, 10 PAGE #3

#8

the flow of the Rio Grande but also to serve as a training ground for a select group of young engineers, who after studying there, would go on to assume positions of responsibility in Powell's Irrigation Survey program throughout the West. In December, 1888 a tent "campus" was erected to accommodate fourteen students most of whom had been educated at eastern colleges. During the next five months, the trainees endured the rigors of Embudo's 5,800 feet elevation making regular temperature readings, soundings and velocity measurements from a makeshift raft moored above the camp. Evaporation was determined in a bread pan commandeered from the commissary until more sophisticated equipment became available. The classes were terminated in April, 1889 but the gaging station continued to function with various D&RG station agents making the necessary readings. In 1915 the State of New Mexico took over the station, but on July 1, 1931 responsibility for its management reverted to the Geological Survey which has maintained it ever since.

Although the stream gaging station is a replacement of the original, it has been in its present location for over sixty years and has importance as the first of its kind to be built anywhere. While not unique, the wooden bridge is of a type becoming increasingly rare in both material and design. The railroad buildings are among the last remaining to mark the sixty year era of the "Chili Line." Together, the elements of the Embudo Historic District combine to memorialize an important period in the history of New Mexico and the Southwest.

#9

Gjevre, John A. Chili Line, The Narrow Rail Trail to Santa Fe. Española, 1969.

Myrick, David F. New Mexico's Railroads. . . An Historical Survey. Cincinnati, 1970.

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RECEIVED	JAN 8 1979
DATE ENTERED	MAR 12 1979

CONTINUATION SHEET

ITEM NUMBER 10

PAGE 4

Verbal Boundary Description:

Beginning at the southwest corner of the intersection of US 64 and Embudo Road; proceed north approximately for 1095 feet; from this point proceed southwest for 1870 feet; from this point proceed southeast to the east bank of the river; proceed northeast along the east bank of the river to the starting point.

Boundary Justification:

The boundary of the historic district is drawn to include the pertinent structures. The gaging station is at the southwest corner, the building complex and water tank at the northeast corner, and the bridge at the east corner.

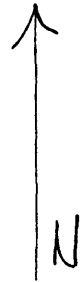


# EMBUDO HISTORIC DISTRICT SKETCH MAP NOT TO SCALE

JAN 8 1979

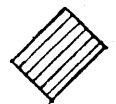
NATIONAL  
REGISTER

DARG RIGHT-OF-WAY

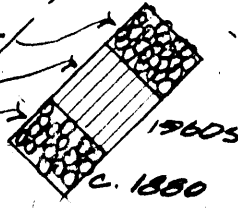


WATER STORAGE TANK  
c. 1880

CARETAKER'S HOUSE  
c. 1940



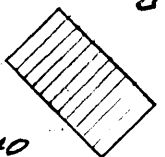
FREIGHT DEPOT  
DINING HALL  
PASSENGER  
DEPOT



GARAGE  
c. 1940

ROOT CELLAR & MEAT HOUSE  
c. 1880

MOTEL  
c. 1940

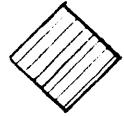


AGENT'S HOUSE  
c. 1880



STORAGE  
n.d.

OWNER'S HOUSE  
c. 1940



RIO GRANDE

BRIDGE

N.M. STATE ROAD 68

1000'

STREAM GAGING  
STATION &  
PULLEY CAR  
1889

