NPS Form 10-900
(Oct. 1990)

OMB No. 10024-0018

822

JUN 26 1997

NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Elephant Butte Irrigation District
other names/site number Rio Grande Project

2. Location

street & number Bureau of Reclamation facilities between Caballo Dam, NM and El Paso, TX ☐ not for publication
city or town Las Cruces ☒ vicinity
state New Mexico code NM county Doña Ana code 013 zip code 88001 (Las Cruces)

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this ☑ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☑ meets ☐ does not meet the National Register Criteria. I recommend that this property be considered significant ☐ nationally ☑ statewide ☐ locally. (☐ See continuation sheet for additional comments.)

Curtis Tunnell SHPO, Tx. 4-14-97
Signature of certifying official/Title Date

Edward Friedman FPO-BOR 6/12/97
State or Federal agency and bureau

In my opinion, the property ☑ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional comments.)

Lynn Sebastian / State Historic Preservation Officer 3/17/97
Signature of certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:
☑ entered in the National Register. ☐ See continuation sheet.
☐ determined eligible for the National Register. ☐ See continuation sheet.
☐ determined not eligible for the National Register.
☐ removed from the National Register.
☐ other, (explain:)_____

Signature of the Keeper — Date of Action

Beth Boland — 8/8/97

Elephant Butte Irrigation District
Name of Property

Doña Ana, NM; Sierra, NM; El Paso, TX
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ☐ private
- ☐ public-local
- ☐ public-State
- ☒ public-Federal

Category of Property
(Check only one box)

- ☐ building(s)
- ☒ district
- ☐ site
- ☐ structure
- ☐ object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
3	1	buildings
0	0	sites
214	8	structures
0	0	objects
217	9	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

1

6. Function or Use

Historic Functions
(Enter categories from instructions)

AGRICULTURE/irrigation facility

Current Functions
(Enter categories from instructions)

AGRICULTURE/irrigation facility

7. Description

Architectural Classification
(Enter categories from instructions)

Other: irrigation system

Materials
(Enter categories from instructions)

foundation N/A

walls N/A

roof N/A

other EARTH, CONCRETE, METAL

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

Elephant Butte Irrigation District
Name of Property

Doña Ana, NM; Sierra, NM; El Paso, TX
County and State

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- ☒ A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ B Property is associated with the lives of persons significant in our past.
- ☒ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations
(Mark "x" in the boxes that apply.)

Property is:
- ☐ A owned by a religious institution or used for religious purposes.
- ☐ B removed from its original location.
- ☐ C a birthplace or grave.
- ☐ D a cemetery.
- ☐ E a reconstructed building, object, or structure.
- ☐ F a commemorative property.
- ☐ G less than 50 years of achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

AGRICULTURE, ENGINEERING

Period of Significance

1906-1942

Significant Dates

N/A

Significant Person
(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

Euro-American

Architect/Builder

U.S. Bureau of Reclamation

Narrative Statement of significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):
- ☐ preliminary determination of individual listing (36 CFR 67) has been requested.
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey Record #_____
- ☐ recorded by Historic American Engineering Record #_____

Primary location of additional data:
- ☒ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Name of repository:

Elephant Butte Irrigation District
Name of Property

Doña Ana, NM; Sierra, NM; El Paso, TX
County and State

10. Geographical Data

Acreage of Property 6,870

UTM References
(Place additional UTM references on a continuation sheet)

1. ||| ||||||| ||||||| Zone Easting Northing
2. ||| ||||||| |||||||
3. ||| ||||||| ||||||| Zone Easting Northing
4. ||| ||||||| |||||||

☒ See continuation sheet.

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title David A. Phillips, Jr.
oganization SWCA, Inc. Environmental Consultants date February 24, 1997
street & number 8100 Mountain Road, N.E., Suite 109 telephone (505) 254-1115
city or town Albuquerque state NM zip code 87110

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic district and properties having large acreage or numerous resources.

Photographs

Representative **black and white** photographs of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name USDI, Bureau of Reclamation, Albuquerque Area Office
street & number 505 Marquette, N.W., Suite 1313 telephone (505) 248-5357
city or town Albuquerque state NM zip code 87102-2162

2. Location

state: New Mexico	county: Doña Ana	code: 013	zip code: 88003 (Las Cruces) 88004 (Las Cruces) 88005 (Las Cruces) 88006 (Las Cruces) 88011 (Las Cruces) 88012 (Las Cruces) 87936 (Garfield) 87937 (Hatch) 87940 (Rincon) 87941 (Salem) 88008 (Santa Teresa) 88021 (Anthony) 88027 (Chamberino) 88033 (Fairacres) 88044 (La Mesa) 88046 (Mesilla) 88047 (Mesilla Park) 88048 (Mesquite) 88054 (Radium Springs) 88058 (San Miguel) 88063 (Sunland Park) 88072 (Vado)
state: New Mexico	county: Sierra	code: 051	zip code: 87933 (Derry) 88022 (Arrey)
state: Texas	county: El Paso	code: 141	zip code: 79821 (Anthony) 79835 (Canutillo) 79910 (El Paso) 79922 (El Paso) 79932 (El Paso)

7. Description

Summary Paragraph

The Elephant Butte Irrigation District (EBID) serves 16,200 acres in the Rincon Valley (at Hatch) and 85,250 acres in the Mesilla Valley (at Las Cruces), or a total of 101,450 acres. The EBID draws its water from the Rio Grande and is located almost entirely in New Mexico, with a small extension into Texas; the district contains three diversion dams and over 200 irrigation and drainage ditches. The entire system is gravity fed and almost all of the ditches are unlined. The district also includes thousands of individual engineering features such as checks, drops, and gates, but most of the individual engineering features have been modified or replaced within the past 50 years; the surviving historic fabric consists primarily of the diversion dams and systems of irrigation and drainage ditches.

Preliminary Remarks

Unless otherwise cited, the following narrative is based on Ackerly et al. (1992), WPRS (1981), and records at the Rio Grande Project Office of the Bureau of Reclamation (BOR), in El Paso. The 1912-1988 annual reports of the Rio Grande Project are also available on microfilm at the Center for Southwestern Research, University of New Mexico (Brown 1992).

Because of the complexity of the system, the following synopsis of its principal features is provided:

The EBID is located along the Rio Grande of south-central New Mexico and westernmost Texas, in two local valleys known as the Rincon and Mesilla Valleys. The Rincon Valley extends south and east from Caballo Dam past Hatch and Rincon to the upper end of Selden Canyon. The canal system in the Rincon Valley is a consolidation of earlier, smaller systems, and twice crosses the Rio Grande in order to serve all portions of the valley. The system begins just below Caballo Dam (a storage dam), where the *Percha Diversion Dam* diverts water into the *Arrey Canal* on the west side of the Rio Grande. This canal feeds through the *Garfield Siphon* to the *Garfield Canal* on the east side of the river, which feeds through the *Hatch Siphon* to the *Hatch Canal* on the west side of the river, which feeds through the *Rincon Siphon* to the *Rincon Canal* on the east side of the river. The principal town in the Rincon Valley is Hatch. The canals just listed are sometimes known collectively as the Rincon Valley Main Canal.

Downstream from the Rincon Valley is Selden Canyon, a section of narrow valley where agriculture is not practicable. The Mesilla Valley extends south and east from Radium Springs, at the lower end of Selden Canyon, to the narrows at El Paso, Texas. At Radium Springs, the *Leasburg Diversion Dam* diverts water into the *Leasburg Canal* on the east side of the Rio Grande. Part of this flow is diverted back across to the west side of the river by the *Picacho Flume.* Farther down the valley, the *Mesilla Diversion Dam* provides a second diversion point in the Mesilla Valley and feeds the *East Side Canal* and *West Side Canal,* on their respective sides of the river. On the West Side Canal system, the *Montoya Siphon* diverts water back across to the east side of the river. Near the base of the Mesilla Valley, the *Montoya Drain Siphon* is the final principal feature of the system, and carries drain water from the west to the east side of the river. The principal town of the Mesilla Valley is Las Cruces.

A portion of the lower part of the Mesilla Valley, including some 12,190 acres of irrigated land, is located in Texas. A 1930 U.S. Supreme Court decision fixed the local border between Texas and New Mexico border as running west to a historic channel of the Rio Grande, then down the channel to Chihuahua, with the historic east bank of the lower Mesilla Valley being in Texas. (The river has long since shifted to a new channel and no longer serves as a boundary between the states.) The Texas portion of the Mesilla Valley irrigated lands is administered by El Paso County Water Improvement District No. 1, but is physically part of the EBID system and is treated as such in this nomination.

7. Description, continued

Except for a residential complex at Leasburg Dam, all of the elements of the EBID mentioned in this nomination are engineering features. For purposes of clarity, we will make a conceptual distinction between *linear features* (canals, laterals, and drains) and *localized features* (non-linear features, such as diversion dams, flumes, checks, and drops). Within an irrigation system, the most important features are generally the linear features, since those define the extent and nature of the system as a whole. Most localized features (e.g., checks) are incorporated into the linear features and can be treated as being of secondary importance, but a few localized features (e.g., diversion dams) are substantial engineering features in their own right.

In rebuilding the irrigation system in the Rincon and Mesilla Valleys, the Reclamation Service sometimes followed existing alignments and sometimes established entirely new ones. Even in the former case, though, the alignment was completely rebuilt. As a consequence, in no instance does the fabric of the current alignment predate Reclamation Service activity, and the year of that activity (e.g., 1924 for the Gonzalez lateral) should be used to determine the age of the alignment.

In the data tables for the linear engineering features, dimensions given in meters represent measurements from Ackerly et al. (1992). Other dimensions are from archival sources. Capacity of canals is given in cubic feet per seconds or cfs (a measure of flow), based on records rather than field measurements.

The EBID historic district encompasses a huge but discontinuous area in New Mexico and west Texas. Contained within the district are countless historic properties and other cultural features, but this nomination is restricted to those federally owned properties actually listed as elements in the narrative and tables that follow. Because of the size of the district, the USGS 7.5 minute quadrangles for each feature are listed in Data Tables 1, 3, and 5 as a finding aid.

Contributing Elements -- Linear Engineering Features

Contributing linear engineering features are listed in Data Tables 1 and 3; supplemental information is provided in Data Tables 2 and 4. In most cases, EBID linear engineering features adhere to the following terminology. A "canal" is a primary artery leading from diversion points along the Rio Grande. A "lateral" is a secondary or tertiary artery that heads at a canal or another lateral. A "drain" is a drainage ditch that empties into the Rio Grande. A "spur drain" is a drainage ditch that empties into another drainage ditch.

Most segments of EBID canals and laterals are unlined and have straight sloping sides. Smaller alignments are V-shaped, while larger ones have flat bottoms and a trapezoidal cross-section. Canals often run above the grade of the surrounding farmlands, in order to permit gravity flow to the adjacent fields. Berms of introduced fill or spoil are usually found on both sides of the channel. A maintenance access road usually runs along the tops of the berms. In contrast, drains (which are less often maintained) frequently have channels with irregular sides and bottoms, and the sides are often overgrown with tamarisk and other plants. Drains usually extend from the local grade downwards. Unlike canals and laterals, most drains are permanently muddy or flowing.

The EBID linear engineering features incorporate thousands of minor localized features, including checks, drops, check drops, gates, flumes, siphons, wasteways, and bridges. Checks hold back water in canals, in order to divert water into smaller canals or onto fields; drops drop the water level in a canal within a restricted space, preventing erosion by the resulting rapid movement of water. Check drops, which combine the two functions, were also built. Gates block or control the flow of water from canal to canal or, as turnouts, from canal to field. Flumes carry canal water over other canals or arroyos and other dips in the landscape. Siphons carry water under dips in the landscape. Wasteways lead from canals back to the river. Because almost all of the minor localized features along EBID canals have been rebuilt since World War II, and because these are elements within the linear features, they will not be considered in detail.

7. Description, continued

Data Table 1. Contributing Elements:
Linear Engineering Features in the Rincon Valley

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Angostura Drain	2.68	1926	Rincon
Angostura Lateral	4.89	1925	Hatch, Rincon
Arrey Canal	4.75	1916-1918, 1925	Garfield
Bennett Lateral	1.42	1925	Garfield
Colorado Spur Drain	1.77	1923	Hatch
Derry Lateral	2.61	1921, 1925	Garfield
Garfield Canal	9.46	1917-1924	Garfield, Arroyo Cuervo, Hatch
Garfield Drain	12.15	1919-1924	Garfield, Arroyo Cuervo, Hatch
Garfield Lateral	3.32	1917, 1923	Garfield, Arroyo Cuervo
Gonzalez Lateral	2.92	1924	Garfield
H-1 Lateral	0.83	1924	Hatch
H-2 Lateral	1.71	1923-1924	Hatch
Hatch Canal	8.33	1917-1919	Hatch, Rincon
Hatch Drain	8.49	1923-1924	Hatch, Rincon
Hatch Siphon	n/a	1917	Hatch
McCall Lateral	1.37	1923, 1925-1926	Hatch
McClintock Lateral	0.75	1924	Hatch
Miller Lateral	0.33	1925	Garfield
Moore Lateral	0.54	1925	Garfield
Palmer Lateral	1.40	1920-1921, 1923	Garfield, Arroyo Cuervo
Placitas Spur Drain	1.00	1933-1934	Hatch

7. Description, continued

Data Table 1. Contributing Elements:
Linear Engineering Features in the Rincon Valley (continued)

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Rincon Canal	5.45	1918-1919, 1925	Rincon
Rincon Drain	10.53	1924-1925	Rincon, Sierra Alta
Rincon Lateral	5.31	1925-1926	Rincon, Sierra Alta, Selden Canyon
Rincon Lateral C	0.68	1926	Rincon
Rincon Lateral M	0.57	1925, 1928	Rincon
Rodey Lateral	4.66	1918, 1922	Hatch
S-1 Lateral	0.51	1924	Hatch
S-2 Lateral	0.64	1924	Hatch
Salem Lateral	3.18	1923-1924	Hatch
Silva Lateral	0.47	pre-1942	Hatch
Sykes Lateral	1.00	1925	Garfield
Tonuco Intercepting Drain	1.95	1927-1928	Sierra Alta, Selden Canyon
Torres Lateral	0.14	1924	Hatch
Trujillo Lateral	1.36	1924-1925	Garfield
Vega Lateral	0.66	1924	Garfield

7. Description, continued

**Data Table 2. Comments on Contributing Elements:
Linear Engineering Features in the Rincon Valley**

Feature Name	Comments
Angostura Lateral	Overlaps with an earlier ditch alignment. The canal is unlined and averages 6.6 m wide and 1.7 m deep. It feeds from the Hatch Canal.
Arrey Canal	Begins at Percha Dam and ends at the Garfield Siphon, where water is carried under the river to the Garfield Canal. As built in 1916-1918, the canal was 22 feet wide and had a water depth of 4.2 feet. The current canal is unlined and has an average width of 16.1 m and a depth of 2.2 m. A prior canal in this area, the Arrey Ditch or Arrey Canal, was built in 1909 (Wozniak 1987:118) but the alignment was changed in 1916-1918.
Bennett Lateral	A.k.a. Lateral No. 3.
Colorado Spur Drain	Feeds into the Hatch Drain.
Derry Lateral	This canal is unlined and averages 6.5 m wide and 2.0 m deep. It feeds from the Garfield Canal.
Garfield Canal	Starts at the Garfield Siphon, at the end of the Arrey Canal, and ends at the Hatch Siphon, at the head of the Hatch Canal. Capacity when built was 330 cfs. An early canal in this area, the Garfield Ditch, was built in 1895. In 1918, the Garfield Community Ditch supplied 3165 acres (Wozniak 1987:149). However, when the canal was rebuilt the old alignment was abandoned.
Garfield Lateral	Built along an earlier ditch alignment (the Garfield Community Ditch?) in 1921. The canal is unlined and averages 6.1 m wide and 1.6 m deep.
Gonzalez Lateral	Unlined; averages 5.1 m wide and 1.6 m deep. Feeds from the Derry Lateral.
H-1 Lateral	Feeds from the Hatch Canal.
H-2 Lateral	Feeds from the Hatch Canal.
Hatch Canal	Begins at the Hatch Siphon, at the end of the Garfield Canal, and ends at the Rincon Siphon, at the start of the Rincon Canal. A prior Hatch Canal was in place before 1915. The current alignment follows the older one, but the canal was rebuilt to a 16 foot bottom width, 5.4 water depth, side slopes of 2:1, and capacity of 200 cfs.
McCall Lateral	Feeds from the Hatch Canal.
McClintock Lateral	Feeds from the Garfield Canal.

7. Description, continued

Data Table 2. Comments on Contributing Elements:
Linear Engineering Features in the Rincon Valley (continued)

Feature Name	Comments
Miller Lateral	Feeds from the Arrey Canal.
Moore Lateral	Feeds from the Arrey Canal.
Palmer Lateral	Unlined; averages 5.4 m wide and 1.9 m deep. Feeds from the Garfield Canal.
Placitas Spur Drain	Built using National Industrial Recovery Act funds. Empties into Hatch Drain.
Rincon Canal	There was a prior ditch for only the first mile of this alignment; the old ditch served ca. 150 acres. The Rincon Canal begins at the Rincon Siphon, at the end of the Hatch Canal. As built, the Rincon Canal had an 8 foot bottom width and a capacity of 100 cfs; currently it is mostly unlined and averages 8.3 m wide by 2.0 m deep.
Rincon Drain	Empties into the Tonuco Intercepting Drain.
Rincon Lateral	Unlined; averages 6.8 m wide and 1.7 m deep. Feeds from the Rincon Canal.
Rincon Lateral C	Feeds from the Rincon Canal.
Rincon Lateral M	Feeds from the Rincon Canal.
Rodey Lateral	Overlaps with an earlier ditch alignment. The lateral is unlined and averages 6.1 m wide and 1.7 m deep. It feeds from the Hatch Canal.
S-1 Lateral	Feeds from the Salem Lateral.
S-2 Lateral	Feeds from the Salem Lateral.
Salem Lateral	Feeds from the Garfield Canal.
Silva Lateral	Feeds from the Hatch Canal.
Sykes Lateral	Feeds from the Garfield Canal.
Torres Lateral	Feeds from the Garfield Canal.
Trujillo Lateral	Feeds from the Arrey Canal.
Vega Lateral	Feeds from the Derry Lateral.

7. Description, continued

Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Alamo Intercepting Drain	2.90	pre-1942	Las Cruces, Black Mesa
Alamo Lateral	0.82	1923	Las Cruces
Alta Vista Lateral	0.70	1923	La Union
American Bend Lateral	2.19	u.c. 1919, ca. 1920	Leasburg, Doña Ana
Anderson Lateral	0.45	1924	Las Cruces
Anthony Lateral	6.83	by 1922	La Mesa, Anthony
Anthony Spur Drain	7.98	1918-1922	La Mesa, La Union, Canutillo
Apache Lateral	2.79	1923	San Miguel
Arguelles Lateral	0.55	1924	Leasburg
Arkansas Lateral	0.44	by 1923	San Miguel
Armijo Lateral	3.49	1919-1922	Las Cruces
Arrington Lateral	0.47	1924	Leasburg
Baca Lateral	0.59	1922	Leasburg
Baker Lateral	4.05	1921	La Union
Bannock Lateral	2.30	1923	San Miguel
Barrio Lateral	0.49	1919-1922	Doña Ana
Borderland Spur Drain	3.08	1932-1933	Canutillo, Smeltertown
Bosque Seco Spur Drain	0.41	by 1926	Black Mesa
Bosque Seco Spur Drain A	0.21	by 1926	Black Mesa
Bouggy Spur Drain	1.37	pre-1942	Las Cruces, Black Mesa
Brazito Lateral	1.50	1921-1922	San Miguel
Brazito River Lateral	1.74	1921-1922	San Miguel

7. Description, continued

Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Brazito Spur Drain	1.38	1931	San Miguel
Brown Lateral	1.45	by 1922, 1924	San Miguel
Bullock Lateral	1.20	1923	La Mesa
California Extension Lateral	1.18	pre-1942	Black Mesa
California Lateral	3.38	u.c. 1919, ca. 1920, 1922	Las Cruces, Black Mesa
Canutillo Lateral	4.32	1920-1921, 1925	Canutillo
Castillo Lateral	0.49	1923	San Miguel
Central Lateral	1.18	ca. 1920, 1922-1923	La Union
Central Spur Drain	2.48	1919	La Union
Chamberino East Lateral	6.27	1919-1921	La Mesa, San Miguel
Chamberino Main Lateral	9.28	by 1919, 1922	San Miguel, La Mesa
Chamberino Spur Drain	4.57	1919-1920	San Miguel, La Mesa
Clark Lateral	1.40	1920, 1923	Las Cruces
Combined La Union Lateral	0.95	pre-1942	La Union, Canutillo, Smeltertown
Cooney Lateral	0.33	1922	Las Cruces
Corpening Lateral	0.36	1924	La Mesa
Corralitos Lateral	0.31	1924	Las Cruces
Cozine Spur Drain	1.47	1926	La Mesa
Crapps Lateral	0.95	ca. 1921	Las Cruces
Crawford Spur Drain	0.84	1930-1931	Strauss
Crawford Lateral	1.61	ca. 1920, 1922	La Union, Strauss
Dairy Farms Lateral	0.28	pre-1942	La Mesa

7. Description, continued

**Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)**

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Deck Lateral	1.71	1923	La Mesa, La Union
Del Rio Drain	20.82	1920-1923, 1933-1935	Las Cruces, Black Mesa, San Miguel, La Mesa
Del Rio Lateral	4.67	1922	Black Mesa, San Miguel
Detention Farm Lateral	0.60	1932-1933	Canutillo
Doña Ana Drain	6.71	1920-1921	Doña Ana, Las Cruces
Doña Ana Lateral	6.26	u.c. 1919-1920	Doña Ana, Las Cruces
Duckett North Spur Drain	0.38	1927	Smeltertown
East Drain	11.52	1918, 1922	La Mesa, Anthony, Canutillo
East Side Canal	11.23	1914-1915, 1920, 1922	Black Mesa, San Miguel
Ellis Lateral	1.13	1924	Canutillo, Smeltertown
Elwood Lateral	1.03	1924	Las Cruces
Etajo Lateral	0.54	ca. 1920, 1924	Doña Ana
Fink Lateral	0.16	pre-1942	San Miguel
Fink Spur Drain	0.21	1926	San Miguel, La Mesa
Freudenthal Lateral	0.33	1924	San Miguel
Freudenthal Spur Drain	0.42	1926	San Miguel
Gardner Lateral	0.68	1923	Las Cruces
Gillem Lateral	1.39	1921	Las Cruces
Gish Lateral	0.61	1923	La Mesa, Anthony
Goering Lateral	0.51	1924	Black Mesa
Green Spur Drain	0.59	1927	La Mesa
Hare Lateral	0.40	1923	Leasburg

7. Description, continued

Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Hess Spur Drain	1.12	1922, 1930	San Miguel
Hill Intercepting Drain	0.80	1927-1928	Doña Ana
Hill Lateral	2.72	1920, 1922, 1924	Doña Ana
Houghton Lateral	1.65	u.c. 1919, ca. 1920	Tortugas Mountain, Las Cruces, Black Mesa, San Miguel
Jiminez Lateral	1.25	1923	La Mesa
Kelso Lateral	0.76	ca. 1920	Las Cruces
Kerr Lateral	0.60	1924	Leasburg
Kilgore Lateral	1.85	1923	La Mesa
La Mesa Drain	13.20	1919-1920, 1939	Black Mesa, San Miguel, La Mesa
La Union Main Canal	3.56	1920	La Mesa
La Union East Canal	5.56	1921-1922	La Mesa
La Union East Lateral	4.66	by 1920	La Mesa, La Union, Canutillo
La Union West Lateral	10.44	1920, 1922, 1924	La Mesa, La Union
Laguna Lateral	3.75	1919-1921	Las Cruces
Lake Lateral	1.14	1923	San Miguel
Lake Spur Drain	2.50	1930-1931, 1934	San Miguel
Langford Lateral	0.24	1923	La Mesa, Anthony
Las Cruces Lateral	13.72	1919-1921, 1924, 1925	Las Cruces, Tortugas Mountain, San Miguel
Lawrence Lateral	0.55	by 1923	San Miguel
Leasburg Canal	13.65	1906-1908, 1915-1916, 1920-1921, 1925	Leasburg, Doña Ana, Las Cruces
Leasburg Drain	7.93	1918-1921	Doña Ana, Las Cruces

7. Description, continued

Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Lester Lateral	0.34	1921, 1926	Black Mesa
Little La Union Lateral	4.26	ca. 1920, by 1922, 1935	La Union
Locke Lateral	0.28	1923	La Mesa
Longwell Lateral	0.33	ca. 1920, 1924	Las Cruces
Louisiana Lateral	2.86	by 1919, 1920-1921	Black Mesa, Las Cruces
Lower Chamberino Lateral	4.56	1926	La Mesa
Lucerne Lateral	0.25	1923	La Mesa
Marquez Lateral	0.52	1924	Las Cruces
Mayfield Lateral	0.99	1928	Las Cruces
McCrummen Lateral	0.48	by 1922	La Mesa
McKamy Lateral	0.32	1923	La Mesa, Anthony
Mesilla Dam Spur Drain	1.81	1925	Black Mesa
Mesilla Drain	10.22	by 1926, 1934	Las Cruces, Black Mesa
Mesilla Lateral	11.88	1919-1920	Las Cruces, Black Mesa, San Miguel
Mesquite Drain	11.12	1923-1924	San Miguel, La Mesa
Middle Lateral	2.01	u.c. 1919; 1920	San Miguel
Mitchell Lateral	1.34	by 1923	San Miguel
Montoya Drain	6.80	Pre-1942	Canutillo, Smeltertown
Montoya Intercepting Drain	3.49	1922-1923	Smeltertown
Montoya Lateral A	2.35	1923	Smeltertown
Montoya Lateral B	1.38	1922	Smeltertown
Montoya Lateral C	1.40	1922	Smeltertown

7. Description, continued

Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Montoya Lateral D	2.02	1923, 1928	Smeltertown
Montoya Main Canal	5.96	1918	Canutillo, Smeltertown
Mundy Spur Drain	0.34	1926	San Miguel
Nemexas Drain	18.79	by 1918, 1919-1920, 1926	La Mesa, La Union, Canutillo, Smeltertown
Newsome Lateral	0.47	1921	San Miguel
O'Shea Lateral	0.67	1923	La Union
Park Drain	10.01	1919-1920, 1935	Las Cruces, Black Mesa, San Miguel
Paxton Lateral	0.49	1923	La Union
Pence Lateral	0.60	1924	Canutillo
Picacho Canal	2.25	1916	Doña Ana
Picacho Drain	7.02	1922	Las Cruces, Black Mesa
Picacho Lateral A	1.90	1922	Las Cruces
Picacho Lateral C	2.35	1922	Las Cruces
Picacho Main Lateral	10.67	1923-1924	Las Cruces, Doña Ana
Porter Lateral	0.45	1934	Las Cruces
Prescott Spur Drain	0.41	1926	San Miguel
Propeck Lateral	0.37	1924	Doña Ana
Quesenberry Lateral	1.74	u.c. 1919, ca. 1920	Las Cruces
Redd Lateral	0.53	1924	Las Cruces
Reymond Lateral	0.61	1923	San Miguel
Rio Rancho Lateral	0.47	pre-1942	Doña Ana
Rodriguez Lateral	0.86	pre-1942	San Miguel

7. Description, continued

Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Rodriguez Spur Drain	0.97	by 1934; 1934	San Miguel
Rowley Lateral	1.23	by 1922	La Union
San Miguel Lateral	6.79	1918, 1922	San Miguel, La Mesa
San Miguel Spur Drain	0.97	1926	San Miguel
Santo Tomas Drain	6.07	by 1921, 1930-1931	Black Mesa, San Miguel
Santo Tomas Lateral	4.86	1920-1921	Black Mesa, San Miguel
Santo Tomas River Drain	5.52	pre-1942	Black Mesa, San Miguel
Santo Tomas River Lateral	2.82	1920	Black Mesa, San Miguel
Santo Tomas Spur Drain 1	0.28	1926	Black Mesa
Santo Tomas Spur Drain 2	0.36	1926	San Miguel
Schaeffer Lateral	1.03	1924	La Mesa
School Lateral	0.93	1924-1925	Las Cruces
Schutz Lateral	1.66	1923	Smeltertown
Selden Drain	4.05	1920-1923	Leasburg
Selden Lateral	0.37	pre-1942	Leasburg
Shalem Drain	2.41	1922	Doña Ana
Shalem Spur Drain	0.67	1922	Doña Ana
Stahmann Intercepting Drain	2.68	1930-1931	Black Mesa
Stevens Lateral	1.57	1922	Smeltertown, Canutillo
Strout Lateral	0.25	pre-1942	La Mesa
Talbot Lateral	3.00	1923	La Union
Taylor Lateral	2.38	1921-1922	Las Cruces
Texas Lateral	1.05	1923, 1927	Canutillo

7. Description, continued

Data Table 3. Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Three Saints Lateral	2.61	1915-1922	San Miguel, La Mesa, Anthony, Canutillo
Three Saints West Lateral	3.31	1915-1922	La Mesa
Tortugas Lateral	1.70	u.c. 1919, ca. 1920	Las Cruces
Turney Lateral	0.24	ca. 1920; 1924	Las Cruces
Utting Lateral	0.33	1924	San Miguel
Vinton Cutoff	2.52	by 1939	Canutillo
Vinton Drain	2.89	1918	La Union, Canutillo
Vinton Lateral	2.46	1921	La Union, Canutillo
Vinton River Drain	2.52	pre-1942	Canutillo
Walter Lateral	0.93	1924, 1927	La Mesa
Want Lateral	0.94	by 1926; 1927	La Mesa
Weeks Lateral	0.44	1923	San Miguel
West Drain	23.95	1917-1921	San Miguel, La Union, Strauss, Smeltertown
West La Mesa Spur Drain	1.48	pre-1942	La Mesa
West Side Canal	14.41	1914-1915, 1921	Black Mesa, San Miguel, La Mesa
Williams Lateral	0.67	1921	Black Mesa
Wood Lateral	1.21	ca. 1920; 1923	La Mesa
Zack Lateral	0.70	by 1922	La Union, Strauss

7. Description, continued

Data Table 4. Comments on Contributing Elements: Linear Engineering Features in the Mesilla Valley

Feature Name	Comments
Alamo Lateral	Feeds from the Mesilla Lateral.
Alta Vista Lateral	Date is per Ackerly et al. 1992:35-36, Table 2.8.
American Bend Lateral	Unlined; averages 5.0 m wide by 1.1 m deep. Feeds from the Leasburg Canal.
Anderson Lateral	Feeds from the Las Cruces Lateral.
Anthony Lateral	Unlined; averages 6.5 m wide and 1.9 m deep. Feeds from the Three Saints Lateral. Yeo (in Wozniak 1987:116) reported that an earlier canal in the area, the Anthony Ditch, supplied 500 acres in 1887, 1,000 acres in 1890, and 2320 acres in 1903. This ditch was still present at the Anthony Canal in 1915.
Anthony Spur Drain	A.k.a. Anthony Drain; feeds into the East Drain.
Apache Lateral	Unlined; averages 5.5 m wide and 1.4 m deep. Feeds from the Las Cruces Lateral.
Armijo Lateral	Feeds from the Las Cruces Lateral.
Arrington Lateral	A.k.a Arrington Canal; feeds from the American Bend Lateral.
Baker Lateral	Unlined; averages 5.4 m wide and 1.6 m deep. Feeds from the La Union West Lateral.
Bannock Lateral	Unlined; averages 5.3 m wide and 1.4 m deep. Feeds from the East Side Canal.
Barrio Lateral	Feeds from the Doña Ana Lateral.
Borderland Spur Drain	Built as a public relief project, with funding by the Reconstruction Finance Administration.
Bouggy Spur Drain	Empties into the Park Drain.
Brazito Lateral	Unlined; averages 5.5 m wide and 1.6 m deep. Feeds from the East Side Canal.
Brazito River Lateral	Unlined; averages 5.5 m wide and 1.6 m deep. Feeds from the East Side Canal.
Brown Lateral	Unlined; averages 4.9 m wide and 1.5 m deep. Feeds from the San Miguel Canal.
Bullock Lateral	Unlined; averages 6.0 m wide and 1.6 m deep. Feeds from the Three Saints East Canal.
California Lateral	Overlaps with an earlier ditch alignment. The California Lateral is unlined and averages 5.3 m wide and 1.8 m deep. It feeds from the Mesilla Lateral.

7. Description, continued

**Data Table 4. Comments on Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)**

Feature Name	Comments
Canutillo Lateral	Feeds from the La Union East Lateral.
Castillo Lateral	Feeds from the Upper Chamberino Lateral; overlaps the former Castillo Ditch, which supplied 285 acres in 1917 (Wozniak 1987:149).
Central Lateral	Unlined; averages 4.6 m wide and 1.9 m deep. Feeds from the La Union West Lateral.
Central Spur Drain	A.k.a. Central Drain; empties into the West Drain.
Chamberino Main Lateral	The Chamberino Community Ditch, which was still in use in 1915, had its own heading. Rebuilt by as the Chamberino Main Lateral (a.k.a. Chamberino Branch or Chamberino Feed Lateral), this canal had a 7 foot bottom width, a 3 foot water depth, and a capacity of 67 cfs. At present the lateral is unlined and averages 6.4 m wide by 0.9 m deep.
Chamberino East Lateral	Due to the need to build the Chamberino Drain, a second alignment was built to serve lands cut off by the new drain -- the Chamberino East Lateral, which as built in 1919 had an 8 foot bottom width. At present the lateral is unlined and averages 6.4 m wide and 1.0 m deep.
Chamberino Spur Drain	A.k.a. Chamberino Drain. See Chamberino East Lateral.
Clark Lateral	Unlined; averages 4.9 m wide by 1.5 m deep. Feeds from the Mesilla Lateral.
Cooney Lateral	Feeds from the Leasburg Canal.
Corpening Lateral	Feeds from the San Miguel Lateral.
Corralitos Lateral	Feeds from the Laguna Lateral.
Cozine Spur Drain	A.k.a. Cousine Spur Drain; empties into the West Drain.
Crapps Lateral	Unlined; averages 5.8 m wide and 1.6 m deep. Feeds from the Las Cruces Canal.
Crawford Spur Drain	Empties into the West Drain.
Crawford Lateral	Unlined; averages 6.0 m wide and 1.6 m deep. Feeds from the La Union West Canal.
Dairy Farms Lateral	Shown on a 1922 map as proposed construction.
Deck Lateral	Unlined; averages 5.9 m wide and 1.9 m deep. Feeds from the Lower Chamberino Lateral.

7. Description, continued

**Data Table 4. Comments on Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)**

Feature Name	Comments
Del Rio Lateral	Heads at the Mesilla Diversion Dam. The canal is unlined and averages 5.6 m deep and 1.7 m deep.
Del Rio Extension Drain	Empties into the Leasburg Drain.
Detention Farm Lateral	Formerly known as the Prison Farm Lateral; serves the federal prison.
Doña Ana Drain	Empties into the Mesilla Drain.
Doña Ana Lateral	Unlined; averages 7.2 m wide and 1.8 m deep. The Doña Ana Lateral feeds from the Leasburg Canal, and overlaps with an earlier ditch alignment, earlier Doña Ana Ditch. The earlier ditch supplied 7,000 acres in 1880, 4,600 acres in 1890, 3260 acres in 1903, and 7394 acres in 1917 (Yeo in Wozniak 1987:116; Wozniak 1987:149).
Duckett North Spur Drain	The "Duckett No. 1 and 2" spur drains are mentioned in a 1927 report.
East Side Canal	Overlaps with an earlier ditch alignment. The first 10.5 miles of the East Side canal were built between 1914 and 1915; it was expanded to its present length and capacity between 1918 and 1922. The current canal feeds from the Mesilla Diversion Dam, is unlined, and averages 12.1 m wide and 2.2 m deep. Capacity is 300 cfs.
Elwood Lateral	Unlined; averages 6.1 m wide and 1.8 m deep. Feeds from the Leasburg Canal.
Fink Spur Drain	Empties into the West La Mesa Spur Drain.
Freudenthal Lateral	Feeds from the Mesilla Lateral.
Freudenthal Spur Drain	Empties into the Del Rio Drain.
Gardner Lateral	Unlined; feeds from the Mesilla Lateral.
Garfield Siphon	Concrete structure; replaced Garfield Flume.
Gillem Lateral	Unlined; averages 4.4 m wide and 1.4 m deep. Feeds from the Laguna Lateral.
Goering Lateral	Feeds from the Louisiana Lateral.
Green Spur Drain	Empties into the La Mesa Drain.
Hare Lateral	Feeds from the American Bend Lateral.
Hess Spur Drain	Empties into the Del Rio Drain; drains the old bed of Mesquite Lake.
Hill Lateral	Unlined; averages 5.5 m wide and 1.9 m deep. Feeds from the Leasburg Canal.

7. Description, continued

Data Table 4. Comments on Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Comments
Houghton Lateral	Unlined; averages 5.2 m wide and 1.7 m deep. Feeds from the Las Cruces Lateral.
Jiminez Lateral	Unlined; averages 5.2 m wide and 1.7 m deep. Feeds from the Las Cruces Lateral.
Kelso Lateral	Unlined; averages 4.7 m wide and 1.3 m deep. Feeds from the Doña Ana Main Canal.
Kerr Lateral	A.k.a. Kelley Lateral.
La Mesa Drain	A "La Mesa Ditch" watered 2253 acres in 1913 and 1903 acres in 1914, and was still in existence (as a lateral of the San Miguel Ditch) as of 1915. The "Chamberino Feed Ditch" followed the La Mesa Ditch in part.
La Union Main Canal	Unlined; averages 14.4 m wide and 2.0 m deep. This feature feeds from the West Side Main Canal. The La Union Ditch or Old La Union Ditch, which served this area, was built in 1865 and 1866 (Wozniak 1987:118). Yeo (in Wozniak 1987:116-117) reported that the old ditch supplied 4,000 acres in 1880, 500 acres in 1890, and 100 acres in 1903. The loss in acreage was due to a shift in the river. In 1913 the ditch supplied 12,705 acres and in 1914 is supplied 11,538 acres. In 1915 it was mentioned as having its own heading. In 1917, the old ditch supplied 11,587 acres (Wozniak 1987:149).
La Union East Lateral	Unlined; averages 8.6 m wide and 2.0 m deep. Feeds from the La Union Main Canal.
La Union East Canal	Feeds from the La Union Main Canal.
La Union West Lateral	Unlined; averages 16.2 m wide and 1.9 m deep. Feeds from the La Union Main Canal.
Laguna Lateral	Overlaps with an earlier ditch alignment. The current canal is unlined and averages 6.5 m wide and 2.0 m deep. It feeds from the Mesilla Main Canal.
Lake Lateral	Feeds from the East Side Main Canal; 1,300 feet of concrete lining placed in 1924, in section over old bed of Mesquite Lake.
Langford Lateral	Feeds from the Three Saints Lateral.
Las Cruces Lateral	Replaced a much earlier ditch; Yeo (in Wozniak 1987:116) reported that the Las Cruces Ditch supplied 6,000 acres in 1880, 4,600 acres in 1890, and 5,000 acres in 1903. A map in a 1913 report labels the old ditch the "Las Cruces and Mesilla Canal." In 1917, the old ditch supplied 5,000 acres (Wozniak 1987:149).

7. Description, continued

Data Table 4. Comments on Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Comments
Leasburg Canal	The first 6 miles of the Leasburg Canal were built between 1906 and 1908 to provide a more reliable source of water to the Doña Ana, Las Cruces, and Mesilla Canals. In 1915 and 1916 the canal was extended to about 12 miles, when the Reclamation Service took over the joint feeder canal for the Las Cruces and Mesilla community ditches. Between 1915 and 1916 the canal was again expanded, to its present length and capacity. The current canal is unlined and averages 6.7 m wide and 1.9 m deep; capacity is 625 cfs.
Leasburg Drain	Empties into the Del Rio Drain.
Lester Lateral	Feeds from the Louisiana Lateral.
Little La Union Lateral	Unlined; averages 6.0 m wide and 1.8 m deep. Feeds from the La Union West Lateral.
Longwell Lateral	Unlined; averages 4.8 m wide and 1.2 m deep. Feeds from the Mesilla Main Canal.
Louisiana Lateral	Unlined; averages 5.6 m wide and 1.7 m deep. Feeds from the Mesilla Main Canal.
Lower Chamberino Lateral	Unlined; averages 6.3 m wide and 1.9 m deep. Feeds from the La Union Main Canal.
Lucerne Lateral	Feeds from the Three Saints Lateral.
Marquez Lateral	Feeds from the Armijo Lateral.
Mayfield Lateral	Former community ditch; feeds from the Armijo Lateral.
McCrummen Lateral	Feeds from the Chamberino East Lateral.
Mesilla Dam Spur Drain	A.k.a. Mesilla Dam Drain.
Mesilla Lateral	Overlaps with an earlier ditch alignment. The canal is unlined and averages 7.1 m wide and 2.0 m deep. Yeo (in Wozniak 1987:116) reported that the old La Mesilla Ditch supplied 4,000 acres in 1880, 4300 acres in 1890, and 5500 acres in 1903. In 1917, the "Mesilla Lateral" supplied 6880 acres (Wozniak 1987:149).
Mesquite Drain	Empties into the East Drain.
Middle Lateral	Feeds from the Mesilla Lateral.
Montoya Intercepting Drain	A "Montoya Drain" was built privately in 1916 but proved ineffective; rebuilt 1922-1923 by USRS.

7. Description, continued

Data Table 4. Comments on Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Comments
Montoya Main Canal	A.k.a. Montoya Main Lateral. Originally served by a temporary headgate (the Montoya Headgate, completed in 1918), which was replaced by a siphon in 1920. The canal is unlined.
Nemexas Drain	Originally emptied into the river; now empties into the Montoya Drain through the Montoya Drain Siphon and an extension east of the river, the changes being built in 1928-1929.
Park Drain	Built 1920 with outlet to river, rebuilt 1922, with outlet to Del Rio Drain.
Paxton Lateral	Feeds from the La Union West Lateral.
Picacho Canal	The "Picacho Branch Canal" was completed in 1916, in order to connect the existing Picacho irrigation system to the Leasburg Canal. Yeo (in Wozniak 1987:116-117) reported that the Picacho Ditch supplied 2500 acres in 1880; that ditch was abandoned soon afterwards, due to reduced flow in the Rio Grande. However, the Picacho Ditch supplied 650 acres in 1913 and 750 acres in 1914.
Picacho Lateral A	Feeds from the Picacho Lateral.
Picacho Lateral C	Feeds from the Picacho Lateral.
Picacho Main Lateral	Unlined; averages 7.1 m wide and 1.8 m deep. Feeds from the Leasburg Canal.
Prescott Spur Drain	Empties into the West Drain.
Quesenberry Lateral	Unlined; averages 5.4 m wide and 1.9 m deep. Feeds from the Las Cruces Lateral.
Rodriguez Spur Drain	Empties into the La Mesa Drain. The original construction date is unknown, but the drain was extended in 1934.
Rowley Lateral	Feeds from the La Union East Lateral.
San Miguel Lateral	Overlaps with an earlier ditch alignment. The canal is unlined and averages 6.2 m wide and 1.6 m deep; it feeds from the West Side Canal. Yeo (in Wozniak 1987:116) reported that the old San Miguel Ditch supplied 1500 acres in 1880 and 1890, and 1800 acres in 1903. In 1917, the ditch supplied 1780 acres (Wozniak 1987:149). Before the 1918 rebuilding the ditch had an 8 foot bottom width and ca. 2 foot water depth. After rebuilding the ditch had a 14 foot bottom width and a capacity of 115 cfs.
San Miguel Spur Drain	Empties into the West Drain.
Santo Tomas Drain	Empties into the La Mesa Drain.

7. Description, continued

Data Table 4. Comments on Contributing Elements: Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Comments
Santo Tomas Lateral	Unlined; averages 5.2 m wide and 1.7 m deep. The lateral feeds from the West Side Canal. Yeo (in Wozniak 1987:116-117) reported that a canal in this area, the Santo Tomas Ditch, supplied 1,200 acres in 1880, 5,000 acres in 1890, and 150 acres in 1903. The original ditch was destroyed in 1884, but was rebuilt in 1890 with a heading on the San Miguel Ditch. Based on BOR records, the same ditch supplied 1,000 acres in 1913 and 660 acres in 1914; in 1915 it had its own heading on the river.
Santo Tomas River Lateral	Unlined; averages 5.3 m wide and 1.8 m deep. Feeds from the Santo Tomas Lateral.
Shalem Drain	Empties into the Leasburg Drain.
Stahmann Intercepting Drain	A "Stahman Spur Drain" was in place by 1927.
Talbot Lateral	Unlined; averages 5.0 m wide and 1.5 m deep. Feeds from the La Union West Canal.
Taylor Lateral	A.k.a. Leasburg Canal Extension. Possibly additional construction on this alignment prior to 1942.
Three Saints Lateral	Also known in part as the Three Saints East Lateral. The Three Saints Main Canal (1915) replaced the old Three Saints Ditch. The old ditch supplied 4,674 acres in 1913 and 5,198 acres in 1914. In 1914, the ditch was also referred to as the Berino Community Ditch. In reports for 1914 and 1915, the ditch had its own heading on the river but also fed from the Leasburg system. The Three Saints Main Canal was later incorporated into the Three Saints Lateral. In 1917, the Three Saints Lateral supplied 5581 acres (Wozniak 1987:149). The Reclamation Service made improvements to this lateral in 1923. The lateral currently averages 7.2 m wide by 1.7 m deep.
Three Saints West Lateral	Overlaps with an earlier ditch alignment. The canal is unlined and averages 6.3 m wide and 2.0 m deep. It feeds from the Three Saints Main Canal.
Tortugas Lateral	Feeds from the Las Cruces Lateral.
Upper Chamberino Lateral	A.k.a. Chamberino Main Lateral, Upper Chamberino Main Lateral. Feeds from the West Side Canal. Yeo (in Wozniak 1987:116) reported that the old Chamberino Ditch supplied 3,000 acres in 1880, 2,250 acres in 1890, and 5,000 acres in 1903. Reports at the BOR indicate that the ditch supplied 4,103 acres in 1913 and 4,101 acres in 1914. In 1917, the ditch supplied 4,880 acres (Wozniak 1987:149).
Vinton Drain	Empties into the Nemexas Drain.

7. Description, continued

Data Table 4. Comments on Contributing Elements:
Linear Engineering Features in the Mesilla Valley (continued)

Feature Name	Comments
Vinton Lateral	Feeds from the La Union East Lateral.
West Side Canal	Overlaps with an earlier ditch alignment. The canal heads at the Mesilla Diversion Dam; the current canal is unlined and averages 15.9 m wide and 2.0 m deep, with a capacity of 650 cfs. The first section of the West Side Canal, built in 1914-1915, had a reported length of 16 miles, longer than the present length, so part of the canal may have been renamed.

Contributing Elements -- Localized Engineering Features

Leasburg Diversion Dam

The Leasburg Diversion Dam (LA 106783), at the head of the Mesilla Valley, is shown on the USGS Leasburg quad and is listed on the N.M. State Register of Cultural Properties (Cumiford 1977).

The Leasburg Diversion Dam was completed in 1908; in 1919 the crest was raised 1.25 feet. The dam is of a concrete ogee weir type with embankment wings. The structural height of the dam is 10 feet and the hydraulic height is seven feet. The total crest length, including weir, is 2,865 feet; the weir crest length is 600 feet. Weir crest elevation is 3922.25 feet. Dam volume (concrete) is 22,500 cubic yards.

The spillway is an overflow weir with three slide sluice gates each 5 by 8 feet. Flood discharge capacity is 17,000 cfs. The headworks for the Leasburg Canal include seven slide gates measuring 5 by 6.75 feet. Diversion capacity is 625 cfs (WPRS 1981).

Leasburg Dam Tender's Residence

Near the dam is a building complex, LA 106782, completed in 1908 (Poague et al. 1995). The principal structure, Feature 4, measures 14 by 10 m; the original dam tender's residence, it is now leased by the N.M. Parks and Recreation Division and used as the supervisor's residence for Leasburg State Park. The structure is in the Hipped Box style, which was common between 1900 and 1920 (UNM 1980). The foundation and walls are concrete. The roof is hipped, with eaves, and is sheathed with replacement material (Ludowici and mission tile). The concrete porch and stairs are centered on the west elevation. The windows are replacement aluminum models. A recent laundry room (wood frame construction, with a shed roof) is attached to the east elevation. Stone and concrete walls are present in the vicinity of the residence; concrete stairs with pipe railings lead to outbuildings and the dam. Historic artifacts were noted in the vicinity of the residence, including sun-turned-amethyst glass and white-glazed stoneware.

Feature 5, a water supply building, east of the main residence, is built of field stones set in cement mortar and has a flat roof that supports a replacement water tank. Rough concrete lintels are set above two doorways in the west elevation.

7. Description, continued

Feature 6, a second utility building, also east of the residence, includes a later addition. The original walls are concrete and the west, south, and east elevations have a slightly crenelated parapet. The roof is clad with asphalt shingles. The west elevation has two fixed windows with concrete lintels. The south elevation has a sliding door with a concrete lintel. The east elevation originally had a rounded arch but has been added on to. The addition is frame and plywood construction and has a low-pitched shed roof with asphalt shingles. The addition includes a casement window and dual swinging doors.

Sub-elements of interest in the residence area (but not counted separately from the residence) include a series of walkways, stairs, and walls in the vicinity of the residence and leading down to the level of the dam.

Mesilla Diversion Dam

The Mesilla Diversion Dam, which serves the lower Mesilla Valley, is six miles south of Las Cruces and is located within the USGS Black Mesa quad. The dam was built between 1914 and 1916; the crest was raised 1.66 feet in 1940. The dam is of a concrete weir, radial gate structure. The structural height of the dam is 22 feet and the hydraulic height is 10 feet. Weir crest length is 303 feet. Crest elevation is 3819.83 feet. Volume is 2,900 cubic yards.

The spillways consist of nine radial gates each measuring 21.58 by six feet and four radial gates each measuring 21.58 by 8.42 feet. Flood discharge capacity is 15,000 cfs. Canal headworks are present at each abutment; eight slide gates (each 4.33 by 3.75 feet) are present at the west abutment and six slide gates (of the same size) are present at the east end. Diversion capacity is 650 cfs at the west headworks (for the West Side Canal) and 300 cfs at the east headworks (for the East Side Canal)(WPRS 1981).

Percha Diversion Dam

Percha Dam is at the head of the Rincon Valley and is located within the USGS Garfield quad. Percha Dam is on the National Register of Historic Places (Cumiford 1978) and is included here for descriptive continuity. The dam is also on the State Register of Cultural Properties.

Construction of Percha Dam began on May 5, 1916, and was completed in January 1918. The dam is a concrete ogee weir structure with embankment wings. The structural height is 18.5 feet while the hydraulic height is eight feet. The weir crest length is 350 feet while total crest length is 2,720 feet. Crest elevation is 4103.0 feet. Volume is 43,200 cubic yards.

The spillway is an overflow weir structure with radial sluice gates each measuring 20 by eight feet. The headworks of the dam, for the Rincon Canal, are at the west abutment and consist of eight slide gates each measuring 4.3 by 3.75 feet. Total diversion capacity is 350 cfs (WPRS 1981).

Cross-River Siphons

Each of the siphons described below is a monolithic reinforced-concrete structure.

The Hatch Siphon (Rincon Valley) connects the lower end of the Garfield Canal to the upper end of the Hatch Canal. The siphon is 600 feet long and was built in 1918. The openings are square and measure 6 feet across; the siphon warps to a circular shaft with an interior diameter of 6 feet. Minimum thickness of the concrete is 12 inches. Capacity is 200 cfs.

The Rincon Siphon (Rincon Valley) connects the lower end of the Hatch Canal to the upper end of the Rincon Canal. The siphon was built in 1918 and 1919 and closely resembles the Hatch Siphon, but is shorter (565 feet) and has a smaller diameter (5 feet).

7. Description, continued

The Montoya Siphon (Mesilla Valley), built in 1920 and 1921, carries irrigation water from the west side of the lower Mesilla Valley to the east side of that valley. The siphon itself is 458 foot long tube measuring 3 feet, 9 inches in diameter; with the 39 foot intake and 65 foot outlet, total structure length is 662 feet. Capacity is 72.5 cfs.

The Montoya Drain Siphon (Mesilla Valley) was built in 1927 and 1928 and carries discharge from the West and the Nemexas drains under the Rio Grande to the Montoya Drain. The siphon is a 600 foot long tube measuring 6 feet in diameter, plus 25 foot warps to six-foot-square openings at each end, for a total structure length of 650 feet. Capacity is 125 cfs.

Non-Contributing Elements

Non-contributing elements (both linear and localized features) and the reasons for their exclusion are listed in Data Tables 5 and 6.

Data Table 5. Non-contributing Elements.

Feature Name	Length in Miles	Date Built	USGS 7.5 Minute Quadrangles
Del Rio Extension Drain	2.55	1946	Las Cruces
Garfield Siphon	n/a	1961	Garfield
LA 106782, Features 1-3	n/a	1908?	Leasburg
Picacho Arroyo	0.91	1953	Las Cruces
Picacho Flume	n/a	Post 1945	Doña Ana
Picacho North Dam	n/a	1953	Las Cruces
Picacho South Dam	n/a	1953-1954	Las Cruces

7. Description, continued

Data Table 6. Non-Contributing Elements: Comments

Feature Name	Comments
Del Rio Extension Drain	This drain was relocated when newly built in 1946 and the earlier alignment, dating to 1931, was abandoned.
Garfield Siphon	Concrete structure; replaced Garfield Flume.
LA 106782, Features 1-3	These are isolated features well to the north and west of the residence, and at a lower level than the residence. Feature 1 is an abandoned utility building that was probably built in 1908 to serve Leasburg Dam but has no obvious architecture or historical values and in any case has deteriorated badly. Features 2 and 3 are minimal features -- the former is a stone-walled diversion channel and the latter is a stone feeding trough.
Picacho Arroyo	A channelized intermittent waterway. The age of this element was not determined, but it is associated with construction of Picacho North Dam and Picacho South Dam in 1953 and 1954.
Picacho Flume	On the Picacho Main Lateral; carries water from the east to the west bank of the Rio Grande. This is the last cross-river flume in the EBID, but was rebuilt within the past 50 years. The current flume consists of a double full-round barrel flume on pilings; originally the flume consisted of a trestle structure supporting a double half-round flume.
Picacho North Dam	A zoned earth-fill structure that traps flood waters in Apache Canyon. Dam statistics are provided in WPRS (1981).
Picacho South Dam	A zoned earth fill structure that traps flood waters in Box Canyon. Dam statistics are provided in WPRS (1981).

8. Statement of Significance

Summary Paragraph

Irrigation farming began in southern New Mexico in the 1800s but was revolutionized beginning in 1906 when the U.S. Reclamation Service (USRS; later the Bureau of Reclamation, or BOR) completely rebuilt the water diversion and conveyance features of the Rincon and Mesilla Valleys. Related events included construction of Elephant Butte Dam (built 1911-1916) and consolidation of numerous individual systems under a single user's association, the Elephant Butte Irrigation District (EBID). For the first time the supply of irrigation water became both predictable and dependable; as a consequence, the amount of irrigated farmland in the Rincon and Mesilla Valleys tripled to more than 100,000 acres. However, the valleys had always been plagued by high water tables, which led to waterlogging and salinization; increased use of irrigation water aggravated these problems. In response, the Reclamation Service built a series of drains that permanently lowered the local water table and made sustained irrigation feasible.

Construction and maintenance of the EBID has been continuous since 1906, and most of the localized engineering features within the EBID have been replaced during the past 50 years. However, the three most important localized engineering features associated with the district, the diversion dams, are much as they were in historic times, and the basic character of the EBID -- a gravity-fed, manually-operated irrigation system -- has not changed.

Distinguishing Features

Although many people helped create the EBID, the historical importance of the irrigation system does not stem from its association with individuals; rather it is important for its relation to the economic and social history of the region. The real impact of the EBID was on the anonymous farmers and farm workers of rural southern New Mexico. Although construction and maintenance work has continued to this day, the EBID irrigation and drainage system took shape in historic times and its basic character has not changed. This character is defined by three diversion dams which are little changed from initial construction, a system of largely unlined gravity-fed irrigation canals, laterals, and drains, and large numbers of hand-operated control features such a drops, checks, and gates.

Historic Context

This narrative is based in large part on Ackerly et al. (1992) and on records at the BOR's El Paso (Texas) Field Division office.

Irrigation before the EBID

In the Rio Grande Valley of southern New Mexico, irrigation farming first spread northward out of El Paso; "excess" populations in a subsistence economy sought out new lands that could be most easily farmed, rather than intensify methods in existing areas. Within the Mesilla Valley, Juan Antonio Garcia appears to have constructed a ditch in the Brazitos area as early as 1805, but the Garcias abandoned their farms about 1828 due to Apache attacks. Sustained occupation of the Mesilla Valley began in 1843 with the Doña Ana Bend Colony grant, including construction of an acequia (irrigation ditch) in 1843 and 1844. A ditch was completed at the Mesilla Colony grant as early as 1849 and was used until 1898 (Wozniak 1987:84).

In 1851, John Bartlett (1854:199; in Wozniak 1987:115) reported that a Mr. Magoflin had built a ditch to irrigate lands near Anthony, New Mexico, but the crops had failed due to lack of water and the land was soon abandoned. In 1852, Jose Manuel Sanchez Baca built a ditch that took water from a tributary stream on his grant. In 1857, landless farmers took up vacant land at La Mesa, between the Baca and Refugio grants, and soon after completed the La Mesa ditch. In the same year, the Acequia Brava or Old Santo Tomás ditch was built to supply the Santo Tomás grant. About this time, landless farmers established San Miguel and built an acequia. The Brazitos ditch is mentioned by 1862. The Chamberino and La Union ditches were built after

8. Statement of Significance, continued

the flood of 1865 forced communities to relocate. The Las Cruces ditch is mentioned by 1872. The Three Saints or Berino ditch was built during the 1870s (Wozniak 1987:84, 115-116).

In the early 1870s, settlement expanded into Rincon and Palomas Valleys; the ancestral Hatch Ditch dates to about 1879 (Wozniak 1987:116).

Initial expansion of irrigation was based on Hispanic and Mormon communal ventures, but in the late 1800s, reflecting a regional trend (Worster 1985), commercial ventures became common. In 1885, the Mesilla Valley Irrigation Company was chartered; it built the Anthony Ditch and by 1906 had acquired the San Pedro and San Jose community ditches. In 1886, a new territorial law encouraged the formation of commercial irrigation ventures. In 1888, the Jornada and El Paso Canal and Reservoir Company was formed to promote a scheme under which water would be diverted through the Jornada del Muerto to feed the Mesilla and El Paso Valleys. In 1889, the Rio Grande Valley Irrigation Company began building ditches in Doña Ana County (Wozniak 1987). In 1893, Nathan Boyd of Las Cruces organized the Rio Grande Dam and Irrigation Company to build a dam at Elephant Butte (near Truth or Consequences) to provide irrigation water to the Mesilla Valley; work at the dam site began in 1897 but was halted by the federal government.

Before the Reclamation Service began its Rio Grande Project, local irrigation was a chancy affair. Between floods and channel shifts, the Rio Grande repeatedly destroyed diversion dams, irrigation canals, and farm land. At other times, the river failed entirely (Wozniak 1987:115-117). Local irrigators responded by rebuilding after each disaster. This labor-intensive approach worked, but limited the amount of land brought under cultivation.

Construction of the EBID - Introduction

Construction of the EBID was part of the USRS (later BOR) Rio Grande Project, which serves three irrigation systems: one in New Mexico (the EBID), one in the El Paso Valley of Texas, and one in the Juarez Valley of Chihuahua, Mexico. The Reclamation Service took an active role in building of the New Mexico and Texas irrigation systems, and established local field camps and warehouses as needed to support its crews. For the Chihuahua system, in contrast, the Service's only role was to store and deliver water due Mexico under a 1906 treaty.

In the data tables, construction dates are based almost exclusively on the annual histories of the Rio Grande Project. Some alignments may predate the years shown but were completely rebuilt (and in some cases moved) in those years. Where a date is listed as "u.c.," the alignment was under construction in that year but the completion date is unknown. Where a date is listed as "ca.," the alignment was surveyed in that year, either prior to or during construction. Some alignments are listed as "Pre-1942"; no specific mention of these alignments was found but construction of new features had halted by 1942 (with the exceptions listed in Table 5) and so the alignments must predate that year. In some cases the name of the alignment may have changed since construction, and the pre-1942 project histories sometimes describe construction work on unnamed alignments.

As a parenthetical note, construction of the storage unit for the Rio Grande Project, Elephant Butte Dam, took place between 1911 and 1916. The first water delivery from the dam took place in 1915 (Phillips et al. 1994). In 1938 a second storage unit, Caballo Dam, was completed downstream from Elephant Butte Dam. Both storage dams are located outside the Elephant Butte Irrigation District boundary.

8. Statement of Significance, continued

Construction of Canals

Reconnaissance and preliminary surveys for EBID began in March 1903. Construction of the first unit of the EBID, the Leasburg Division, was approved in December 1905 and started the following year, with the goal of providing immediate relief to farmers in the Mesilla Valley. Completed in 1908, the Leasburg Division included the Leasburg Diversion Dam and the Leasburg Canal and delivered water to the Doña Ana, Las Cruces, and Mesilla community ditches (Wozniak 1987:121).

In 1911, the USRS began rebuilding the existing irrigation systems in the Rincon and Mesilla Valleys, buying out and consolidating many small ditch systems into a few large ones. Data from 1914 and 1915 provide a final snapshot of the principal ditch systems before the USRS transformed the local landscape; these were the Arrey (Arroyo Bonito), Garfield, and Hatch ditch systems in the Rincon Valley; the Doña Ana, Las Cruces, Mesilla, Picacho, and Three Saints (Berino) systems on the east side of the Mesilla Valley; and the Chamberino, La Mesa, La Union, San Miguel, Santo Tomas, and Chamberino systems on the west side of the Mesilla Valley. Dates for the USRS takeover process are as follows: Chamberino Ditch, 1917-1918; Doña Ana Ditch, 1918; Garfield Ditch, 1919; Hatch Ditch, 1917; Las Cruces Ditch, 1918; La Mesa Ditch, 1918; La Union Ditch, 1920-1921; Mesilla Ditch, 1918; Picacho Ditch, 1923; San José Ditch, 1917; San Miguel Ditch, 1917; Three Saints, 1918-1919.

In some cases, USRS canals followed earlier ditch alignments to greater or lesser degrees; known instances are cited in the data tables. In other cases, old alignments were abandoned. The EBID water distribution system was substantially complete by 1921; known completion dates for individual canals and laterals are provided in the data tables.

The last major canal construction was apparently in the Tonuco area, at the lower end of the Rincon Valley, where extension of the Rincon Canal required a "cutoff" or shift in the channel of the Rio Grande. In 1919 the USRS began building the cutoff with a dragline but abandoned the effort after meeting with opposition. In 1926 local landowners used teams to build the cutoff, and in 1927 and 1928 the BOR extended the Rincon Canal system to the upper end of Selden Canyon.

Construction of the EBID spanned two eras in American engineering. The first ditches were built using human and animal power, but by 1917 draglines began taking over the heavy work. (The drain system, which does not predate that year, was apparently built entirely using power equipment.) Specific mentions of construction with draglines includes:

1923: Alamo Spur Lateral, Apache Lateral, Bannock Lateral, Bullock Lateral, Central Lateral, Deck Lateral, Gish Lateral, Lucerne Lateral, Paxton Lateral, Picacho Main Lateral, Schutz Lateral

1925: Angostura Lateral

Construction of Drains

An important part of the EBID system is the network of gravity-flow drains. Wozniak (1987:149-151) has stated,

> Beginning shortly after... regular deliveries of water from Elephant Butte Reservoir, the Reclamation Service became concerned about drainage of waterlogged lands within the Rio Grande Project, especially in the Mesilla Valley... As early as 1917, the seepage problem began to affect the valley's arable land, particularly since 70 percent of the land suffered naturally from poor drainage... Finding themselves with a relative abundance of water, irrigators overwatered their crops... Thousands of acres of poorly drained land became waterlogged... The condition could only be relieved by the construction of a drainage system for the Mesilla Valley coupled with a program for the reclamation of areas poisoned by alkali as a result of overwatering...

8. Statement of Significance, continued

In 1914 the USRS began placing hundreds of test wells for monitoring the local water table; in 1915 the USRS Board of Engineers recommended "a comprehensive system of drains" and the service began preliminary drain surveys (starting with the East and West Drains). The major drain construction effort was between 1917 and 1925; the emphasis was on the system in the Mesilla Valley until its completion in 1924, at which point the focus shifted to the Rincon Valley. The BOR continued expanding the network of drains into the early 1930s, allowing reclamation of additional land (Wozniak 1987:151-152).

Construction of Diversion Dams

As mentioned earlier, the Leasburg Diversion Dam and the Leasburg Canal were completed in 1908; the crest of the dam was raised 1.25 feet in 1919.

The Mesilla Diversion Dam and the associated East Side and West Side Canals were completed in 1915 (Wozniak 1987:145); the Mesilla Dam Dike was extended in 1918 and 1919.

The Percha Diversion Dam, completed in 1918, was the third and final diversion dam built for the EBID. The main portion of the dam, including weir and headgates, was built east of the river channel without interfering with the flow of the river. A double earthen embankment was then built across the river channel to divert the Rio Grande into the dam structure and the Arrey Canal (Cumiford 1978).

Construction of Cross-River Flumes and Siphons

USRS construction included several large engineering features to carry water across the Rio Grande. Except for the Garfield and Picacho Flumes, the features remain in use. In the case of the siphons, sheet piling was used to create cofferdams which were kept dry by pumping.

The Garfield Flume connected the lower end of the Arrey Canal to the upper end of the Garfield Canal. The flume was built in 1917 and 1918 and was a steel truss structure with twin half-round barrels supported on wood beams; it was 800 feet long and had a capacity of 330 cfs. The flume was replaced with the Garfield Siphon in 1961.

The Hatch Siphon was built in 1917 and 1918; the Rincon Siphon was built in 1918 and 1919. The Montoya Siphon was built in 1920 and 1921, to replace a heading on the river which was repeatedly clogged by sand. Half of the siphon was built at a time, to allow for the flow of the river.

The Picacho Flume was built in 1924 and consisted of steel trestle structure with a double half-round barrel flume. At some point after World War II, the flume was replaced by a double full-round barrel flume supported by a steel beam structure on pilings.

The Montoya Drain Siphon was built in 1927 and 1928 to improve drainage in downstream end of the Rincon Valley.

8. Statement of Significance, continued

Later History of the Rio Grande Project at EBID

> In 1918, the Percha Diversion Dam, the last of the facilities scheduled for construction under the original project, was completed. By 1918, however, the Reclamation Service had come to accept the necessity of a greater and longer-term involvement in the actual distribution of water... In 1918 and 1919, the Reclamation Service took control of all large community ditches in the Mesilla Valley with the exception of the La Union Ditch, which it acquired in 1920... At the same time, the service also acquired control of the ditches in the Rincon Valley as well as responsibility for all construction. In 1920 all of the proposed irrigation facilities were completed in the Rincon Valley, and the Reclamation Service began reconstruction of the ditches that it had recently acquired in the Mesilla Valley... The renovation of the larger ditches lasted until 1922... (Wozniak 1987:151).

In 1923, the Reclamation Service became the Bureau of Reclamation. The BOR assumed responsibility for construction, maintenance, and operation work under contract with the EBID (Wozniak 1987:152). A major concern in subsequent years was replacement of the original minor engineering structures, which were often built of redwood, with lower-maintenance structures of concrete and steel. Only a few minor engineering structures were replaced prior to World War II; since then, apparently, all of the minor structures have been replaced.

The Elephant Butte Irrigation District

The new irrigation system led to explosive growth in local farming. Census data from 1890 show a total of 12,468 acres under irrigation in Doña Ana and Sierra Counties (Wozniak 1987:103). In contrast, between 1915 and 1926 farmers added an average of 9,400 acres, or three-quarters the 1890 total, each year (Lester 1977). The process operated, in theory, on a revolving fund; the federal government paid for dams and irrigation systems and recovered its costs from user fees. The government also obtains title to the irrigation system, and retains ownership until the local district pays off the government's expenses. Under this approach, the Reclamation Service required contracts with formal water users' associations before starting construction in order to ensure that the new systems would be used and paid for. In 1905, the territorial legislature authorized the incorporation of water user's associations and in 1909 the legislature authorized the formation of public irrigation districts (Wozniak 1987:107).

In 1905, The Elephant Butte Water Users' Association (EBWUA) was formed to cover the Rincon and Mesilla Valleys (Wozniak 1987:121). The primary function of the EBWUA was to distribute water supplied by the USRS, collect fees from the water users, and pass the fees back to the USRS as lump sums. Under New Mexico state law, the EBWUA was unable to acquire community irrigation systems except by consent of all owners, so it relied on the USRS's much broader power to acquire or condemn property.

The composition of the EBWUA is outlined in a 1915 USRS report. One stated goal of reclamation in the West was to create new citizen-farmers, and in theory no irrigated farms of over 160 acres could be served by the EBWUA. In practice, however, such holdings ranged from 1 to 6,600 acres; 131 holdings exceeded 160 acres (this group included 56,140 acres and averaged 428 acres), of which 47 holdings exceeded 320 acres (this group included 39,103 acres and averaged 832 acres). By 1915, obviously, agribusiness was well-established in southern New Mexico. The yeoman ideals of U.S. reclamation law were ignored throughout the west and were eventually abandoned (Worster 1985).

In response to USRS initiatives, the EBWUA lobbied the state legislature to allow the formation of irrigation districts within New Mexico. In July 1917, after the new state law passed, the Elephant Butte Irrigation District entered a contract with the USRS for irrigation services. As Lester (1977) noted, "At its inception, the Elephant Butte Irrigation District was primarily a financial institution" which repaid the BOR for construction and maintenance costs and also charged users for its own administrative expenses. The EBID finally took over operation and maintenance responsibilities for the canals and drains in 1979 and for the diversion dams in 1987.

8. Statement of Significance, continued

The EBID is a quasi-state agency, in being an extension of state government but operating as a separate enterprise -- in this sense it is not unlike a municipality. As such, the EBID is also an example of a historic political pattern common to the west -- the willingness to invoke state power to override individual interests (and the ethos of the "rugged individual") when such an action is perceived as essential to the development of a "frontier" region.

Historical Impact of the EBID

The existence of the Rio Grande Project and EBID led to a steady expansion of irrigated land. In 1910, 30,690 acres of irrigated farmland were present in Rincon and Mesilla Valleys; in 1930, the figure was 78,449 acres. The Great Depression led to a collapse of farm prices, and in 1935 EBID irrigated lands dropped to 65,425 acres. By 1938, agricultural production had recovered (78,237 acres) and remained stable until World War II spurred production. In 1945, 104,986 acres were under irrigation, about the same amount of land as today (Wozniak 1987:152-153). In summary, creation of the EBID has more than tripled the amount of irrigated farmland in the Rincon and Mesilla Valleys of New Mexico. Part of this engineering success story is due to the physical expansion of local irrigation systems, including into land formerly unsuitable for farming due to high water tables. A key element of the expansion, though, is the transformation of local irrigation from a risky affair to a highly predictable enterprise, thanks to large-scale civil engineering technology of the early 1900s. The specific demographic and economic profile of today's New Mexico, with its growing "Rio Grande Corridor," would not have happened without the EBID and the other Reclamation projects that changed the Rio Grande from a *Rio Bravo* to a dependable supply of water.

Period of Significance

The period of significance is defined as beginning in 1906, with the first construction associated with the EBID. The same period is defined as ending in 1942, the year in which U.S. involvement in World War II led to a temporary end to major construction and maintenance activities within the EBID.

Integrity

The integrity of the EBID can be evaluated in terms of (1) survival of historic association values (per Criterion A) and (2) survival of engineering design values (per Criterion C).

Many localized aspects of design, as well as materials and workmanship, have changed since the EBID was first built. For example, small control devices such as checks were originally built of redwood but have since been rebuilt using concrete and new designs, and some ditches have been concrete-lined. However, the overall fabric -- diversion dams plus gravity-fed canals, laterals, and drains controlled by manually operated features -- is the same as in historic times. Most of the linear engineering features within the current EBID -- the guts of the system -- were established during historic times and have not changed since. Thus, despite the ongoing evolution of many of the small engineering features, the system as a whole still functions as originally conceived and built. A different way to state this is that despite many changes, enough of a mix of location, design, setting, materials, workmanship, associations, and feeling has survived that the system as a whole retains its integrity as an example of historic engineering.

The system also appears to retain its integrity in terms of historic association values. The EBID was part of an early 1900s campaign by the federal government to transform the West by taming its rivers -- a campaign that succeeded completely, whatever one may think of the side effects. The EBID allowed farmers to triple their acreage in the Rincon and Mesilla Valleys and changed irrigation from a gamble against drought and flood to something that locals take for granted. In this case, location, setting, and feeling are especially important to this mix. In the past 50 years, the spatial layout of the system as a whole is virtually unchanged.

8. Statement of Significance, continued

Moreover, while the EBID is located within a landscape that has undergone changes within the past 50 years (most notably the expansion of Las Cruces and El Paso into former farmlands), most of the area continues to maintain a rural agricultural feeling, and thus the basic context for the EBID survives. Perhaps most important, the continued and uninterrupted operation of the EBID as a functioning irrigation system makes it easy for all to feel and thus understand the historical importance of the EBID.

The EBID also contains examples of historic engineering features that have both the integrity and the importance to be eligible to the NRHP on an individual basis; those features are identified in Section 7 and are also listed below.

Summary of Contributing Versus Noncontributing Elements

Contributing Under Criterion A and C

The following elements of (or associated with) are considered important for both historical associations and historic engineering values. They are listed in the same order as in Section 7.

Features listed in Data Tables 1-4.

These elements are considered eligible as contributing elements to the district.

Leasburg Diversion Dam
Mesilla Diversion Dam

These two structures are important as original diversion structures associated with the historic development of the EBID. The two structures also retain their historic engineering qualities and thus are good examples of early 1900s dam construction. They are thus considered eligible to the NRHP on an individual basis.

Percha Diversion Dam

Percha Diversion Dam is already on the NRHP.

Hatch Siphon
Rincon Siphon
Montoya Siphon
Montoya Drain Siphon

Added to the system by 1928, these four siphons are historically associated with the early development and refinement of the EBID. The four structures also retain their historic engineering qualities and are thus good examples of major irrigation features of the early 1900s. They are thus considered eligible to the NRHP on an individual basis.

Contributing Under Criterion A Only

Due to architectural modifications of the main structure, the following portion of the Leasburg Diversion Dam complex is considered contributing under Criterion A only.

LA 16782, Features 4 (former dam tender's residence), 5 (outbuilding), and 6 (outbuilding); feature numbers per Poague et al. (1995) ; counted as three elements.

8. Statement of Significance, continued

Noncontributing Elements

In Data Table 5, six elements are listed as non-contributing because they were built or rebuilt within the past 50 years, one (LA 16782, Feature 1) is listed as noncontributing primarily because of its advanced state of deterioration, and two (LA 16782, Features 2 and 3) are listed because they are minimal, somewhat isolated features with no obvious associations with the district.

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10. Geographical Data

UTM References

The district falls within, *but is not defined by,* a polygon with the following UTM values for the vertices. The numbers are keyed to a 1:250,000 scale map included in the nomination.

POINT	ZONE	EASTING	NORTHING
1.	13	281600	3640000
2.	13	281500	3626200
3.	13	294000	3613100
4.	13	348100	3613000
5.	13	348100	3517400
6.	13	356200	3517300
7.	13	350000	3550000
8.	13	310100	3620000
9.	13	295700	3620000
10.	13	285900	3640000

The following point UTM Zone 13 values are for localized elements of the district:

Leasburg Diversion Dam	E 319380	N 3596960
Leasburg Dam Residence	E 319480	N 3597000
Mesilla Diversion Dam	E 330610	N 3566970
Percha Diversion Dam	E 284500	N 3638860
Hatch Siphon	E 289380	N 3620140
Rincon Siphon	E 301390	N 3616220
Montoya Siphon	E 348670	N 3528130
Montoya Drain Siphon	E 348030	N 3523200

The following two tables provide UTMs for the start and end of each contributing linear element of the district. In some cases, UTM values are provided for an intermediate point to serve as a further finding aid.

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Rincon Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTMs Start Point**	**UTMs End Point**	**UTMs Int. Point**
Angostura Drain	Rincon	E305260 N3614480	E308220 N2612270	E307160 N3613430
Angostura Lateral	Hatch, Rincon	E300170 N3616110	E308230 N3613260	E303080 N3614720
Arrey Canal	Garfield	E284460 N3638910	E284370 N3632420	E284750 N3635360
Bennett Lateral	Garfield	E283720 N3636740	E283720 N3634840	
Colorado Spur Drain	Hatch	E297640 N3615790	E300130 N3615160	
Derry Lateral	Garfield	E285200 N3630820	E287100 N3627430	
Garfield Canal	Garfield, Arroyo Cuervo, Hatch	E284440 N3632410	E289380 N3620300	E287780 N3623090
Garfield Drain	Garfield, Arroyo Cuervo, Hatch	E286410 N3630600	E295300 N3618240	E287420 N3624170
Garfield Lateral	Garfield, Arroyo Cuervo	E287100 N3627450	E287690 N3623270	
Gonzalez Lateral	Garfield	E285400 N3630450	E286340 N3625870	E285470 N3628210
H-1 Lateral	Hatch	E291390 N3618710	E292520 N3619170	
H-2 Lateral	Hatch	E294140 N3617300	E296470 N3617640	
Hatch Canal	Hatch, Rincon	E289380 N3620120	E301210 N3616140	E295290 N3617030
Hatch Drain	Hatch, Rincon	E291760 N3618760	E303080 N3614720	E296280 N3617530
Hatch Siphon	Hatch	E289380 N3620190		

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Rincon Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTMs Start Point**	**UTMs End Point**	**UTMs Int. Point**
McCall Lateral	Hatch	E297340 N3616760	E299480 N3617470	
McClintock Lateral	Hatch	E289540 N3622460	E290380 N3622300	
Miller Lateral	Garfield	E2836800 N3634680	E283210 N3633680	
Moore Lateral	Garfield	E283590 N3632780	E284560 N3630640	
Palmer Lateral	Garfield, Arroyo Cuervo	E287100 N3626530	E286550 N3624340	
Placitas Spur Drain	Hatch	E295690 N3617130	E295280 N3616120	
Rincon Canal	Rincon	E301400 N3616220	E309020 N3613260	E305340 N3613270
Rincon Drain	Rincon, Sierra Alta	E303690 N3615700	E312040 N3607570	E308550 N3613830
Rincon Lateral	Rincon, Sierra Alta, Selden Canyon	E309020 N3613240	E312590 N3607180	E311910 N3610670
Rincon Lateral C	Rincon	E301870 N3615850	E302980 N3615730	E303440 N3616280
Rincon Lateral M	Rincon	E308880 N3613520	E311020 N3612510	
Rodey Lateral	Hatch	E292680 N3617480	E296480 N3616420	
S-1 Lateral	Hatch	E290260 N3621440	E290960 N3621800	
S-2 Lateral	Hatch	E290960 N3619610	E290980 N3620740	
Salem Lateral	Hatch	E289760 N3622030	E294040 N3618730	E291670 N3620530

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Rincon Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTMs Start Point**	**UTMs End Point**	**UTMs Int. Point**
Silva Lateral	Hatch	E292540 N3617640	E293520 N3618360	
Sykes Lateral	Garfield	E285230 N3630830	E286410 N3630610	
Tonuco Intercepting Drain	Sierra Alta, Selden Canyon	E310610 N3609920	E312680 N3604920	E312210 N3607510
Torres Lateral	Hatch	E289430 N3622720	E289450 N3622840	
Trujillo Lateral	Garfield	E283740 N3637150	E285030 N3636110	
Vega Lateral	Garfield	E285230 N3630610	E284780 N3629790	

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Alamo Intercepting Drain	Las Cruces, Black Mesa	E328380 N3573810	E330600 N3567020	
Alamo Lateral	Las Cruces	E328680 N3579040	E327860 N3578020	
Alta Vista Lateral	La Union	E344180 N3539790	E343300 N3539680	
American Bend Lateral	Leasburg, Doña Ana	E322780 N3592320	E324050 N3588840	
Anderson Lateral	Las Cruces	E330340 N3579360	E331000 N3579380	
Anthony Lateral	La Mesa, Anthony	E344650 N3552170	E347670 N3542480	E347570 N3544430
Anthony Spur Drain	La Mesa, La Union, Canutillo	E344380 N3550540	E348020 N3539270	E344560 N3546370

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Apache Lateral	San Miguel	E337280 N3565470	E339480 N3563030	E339420 N3564490
Arguelles Lateral	Leasburg	E319540 N3595140	E320170 N3594720	
Arkansas Lateral	San Miguel	E337520 N3556640	E337130 N3556140	
Armijo Lateral	Las Cruces	E331340 N3578080	E332820 N3574140	
Arrington Lateral	Leasburg	E322860 N3590300	E323480 N3590700	
Baca Lateral	Leasburg	E322330 N3593720	E321650 N3593210	
Baker Lateral	La Union	E344980 N3533840	E345690 N3528210	
Bannock Lateral	San Miguel	E339430 N3561030	E341200 N3561340	
Barrio Lateral	Doña Ana	E329010 N3586570	E328530 N3583760	
Borderland Spur Drain	Canutillo, Smeltertown	E346830 N3530300	E346640 N3525060	
Bosque Seco Spur Drain	Black Mesa	E334840 N3565120	E334780 N3565720	
Bosque Seco Spur Drain A	Black Mesa	E334030 N3565960	E335080 N3565470	
Bouggy Spur Drain	Las Cruces, Black Mesa	E334460 N3570670	E334040 N3568960	
Brazito Lateral	San Miguel	E337850 N3562970	E338240 N3560860	
Brazito River Lateral	San Miguel	E336670 N3563990	E338920 N3558900	E337780 N3560970

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Brazito Spur Drain	San Miguel	E338520 N3562830	E339840 N3561420	
Brown Lateral	San Miguel	E336560 N3558340	E335920 N3556740	
Bullock Lateral	La Mesa	E344530 N3546800	E346500 N3546520	
California Extension Lateral	Black Mesa	E329280 N3568470	E330590 N3567020	
California Lateral	Las Cruces, Black Mesa	E330760 N3571700	E329640 N3568720	
Canutillo Lateral	Canutillo	E347220 N3533780	E348640 N3528240	
Castillo Lateral	San Miguel	E338100 N3559110	E338100 N3557760	
Central Lateral	La Union	E343860 N3536330	E346190 N3535380	
Central Spur Drain	La Union	E345460 N3534800	E345190 N3531040	
Chamberino East Lateral	La Mesa, San Miguel	E339400 N3557140	E343030 N3548660	E342580 N3553130
Chamberino Spur Drain	San Miguel, La Mesa	E340320 N3556220	E341920 N3551030	E341600 N3554190
Clark Lateral	Las Cruces	E329950 N3573780	E328210 N3572440	
Combined La Union Lateral	La Union, Canutillo, Smeltertown	E346290 N3528160	E348320 N3526540	E346600 N3527720
Cooney Lateral	Las Cruces	E328540 N3580440	E329320 N3581070	
Corpening Lateral	La Mesa	E339410 N3559530	E338590 N3551900	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Corralitos Lateral	Las Cruces	E333010 N3570080	E333860 N3570220	
Cozine Spur Drain	La Mesa	E338030 N3554300	E338950 N3552340	
Crapps Lateral	Las Cruces	E329610 N3580240	E328560 N3579340	
Crawford Spur Drain	Strauss	E345630 N3526430	E344450 N3526720	
Crawford Lateral	La Union, Strauss	E344580 N3528410	E345560 N3527980	
Dairy Farms Lateral	La Mesa	E345380 N3542640	E345800 N3542710	
Deck Lateral	La Mesa, La Union	E342590 N3542710	E342660 N3540160	
Del Rio Drain	Las Cruces, Black Mesa, San Miguel, La Mesa	E327810 N3579390	E343620 N3552740	
Del Rio Lateral	Black Mesa, San Miguel	E330660 N3566020	E336400 N3562950	E334800 N3565160
Detention Farm Lateral	Canutillo	E347460 N3539740	E348260 N3539520	
Doña Ana Drain	Doña Ana, Las Cruces	E327540 N3586140	E329840 N3578000	E330350 N3581580
Doña Ana Lateral	Doña Ana, Las Cruces	E324860 N3589340	E329150 N3581740	
Duckett North Spur Drain	Smeltertown	E348140 N3526660	E347720 N3526950	
East Drain	La Mesa, Anthony, Canutillo	E342840 N3554810	E348300 N3537760	E346570 N3546430
East Side Canal	Black Mesa, San Miguel	E330600 N3566970	E342050 N3556680	E338880 N3562760

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Ellis Lateral	Canutillo, Smeltertown	E346330 N3528600	E347060 N3527400	
Elwood Lateral	Las Cruces	E329550 N3580300	E330680 N3580700	
Etajo Lateral	Doña Ana	E328040 N3586620	E328020 N3585800	
Fink Lateral	San Miguel	E337460 N3555530	E337620 N3555400	
Fink Spur Drain	San Miguel, La Mesa	E337580 N3555840	E337600 N3555240	
Freudenthal Lateral	San Miguel	E335580 N3565720	E335280 N3565280	
Freudenthal Spur Drain	San Miguel	E335400 N3564980	E335880 N3564710	
Gardner Lateral	Las Cruces	E329180 N3574960	E330510 N3574780	
Gillem Lateral	Las Cruces	E333480 N3573210	E331600 N3572010	
Gish Lateral	La Mesa, Anthony	E346060 N3545350	E346680 N3544960	
Goering Lateral	Black Mesa	E331730 N3568120	E332400 N3568410	
Green Spur Drain	La Mesa	E340560 N3549000	E340780 N3549680	
Hare Lateral	Leasburg	E322800 N3591720	E322540 N3589800	
Hess Spur Drain	San Miguel	E338310 N3560200	E339280 N3559830	
Hill Intercepting Drain	Doña Ana	E325430 N3588580	E325910 N3587870	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Hill Lateral	Doña Ana	E324840 N3589360	E325060 N3585850	
Houghton Lateral	Tortugas Mountain, Las Cruces, Black Mesa, San Miguel	E335200 N3570360	E336040 N3568560	
Jiminez Lateral	La Mesa	E343620 N3543260	E345050 N3542000	
Kelso Lateral	Las Cruces	E329720 N3582320	E330360 N3581590	
Kerr Lateral	Leasburg	E322660 N3592660	E322190 N3591970	
Kilgore Lateral	La Mesa	E343910 N3548460	E346240 N3547700	
La Mesa Drain	Black Mesa, San Miguel, La Mesa	E334540 N3563270	E343620 N3543610	E338400 N3558320
La Union Main Canal	La Mesa	E342560 N3547390	E343870 N3541050	E343160 N3545220
La Union East Canal	La Mesa	E342930 N3545590	E343730 N3545420	
La Union East Lateral	La Mesa, La Union, Canutillo	E343900 N3541920	E346290 N3528160	E345890 N3536940
La Union West Lateral	La Mesa, La Union	E343860 N3541940	E344110 N3530870	
Laguna Lateral	Las Cruces	E330370 N3573250	E332840 N3569650	
Lake Lateral	San Miguel	E339370 N3560990	E340020 N3559040	
Lake Spur Drain	San Miguel	E338460 N3562730	E339700 N3559600	
Langford Lateral	La Mesa, Anthony	E346320 N3543460	E347040 N3543230	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Las Cruces Lateral	Las Cruces, Tortugas Mountain, San Miguel	E329610 N3581750	E338640 N3562840	E335770 N3570060
Lawrence Lateral	San Miguel	E335170 N3559760	E336440 N3559280	
Leasburg Canal	Leasburg, Doña Ana, Las Cruces	E319500 N3596860	E329570 N3580310	E326680 N3586240
Leasburg Drain	Doña Ana, Las Cruces	E324100 N3590340	E327780 N3579420	E326500 N3586260
Lester Lateral	Black Mesa	E332310 N3567210	E332760 N3567490	
Little La Union Lateral	La Union	E343360 N3536800	E344600 N3528420	E343260 N3533120
Locke Lateral	La Mesa	E343880 N3549440	E344360 N3549420	
Longwell Lateral	Las Cruces	E328960 N3575420	E330180 N3575790	
Louisiana Lateral	Black Mesa, Las Cruces	E331740 N3570350	E333140 N3566280	
Lower Chamberino Lateral	La Mesa	E341140 N3549800	E343680 N3541630	E341680 N3546580
Lucerne Lateral	La Mesa	E344400 N3550560	E343970 N3550570	
Marquez Lateral	Las Cruces	E340130 N3551910	E340580 N3551990	
Mayfield Lateral	Las Cruces	E330120 N3576230	E331420 N3576720	
McCrummen Lateral	La Mesa	E342580 N3553020	E343190 N3552630	
McKamy Lateral	La Mesa, Anthony	E346160 N3544130	E346640 N3544120	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Mesilla Dam Spur Drain	Black Mesa	E330570 N3567040	E331450 N3566820	
Mesilla Drain	Las Cruces, Black Mesa	E328710 N3579360	E334420 N3565220	E332060 N3569170
Mesilla Lateral	Las Cruces, Black Mesa, San Miguel	E328620 N3579730	E336640 N3563180	E334120 N3567630
Mesquite Drain	San Miguel, La Mesa	E337590 N3566290	E344680 N3550880	E342110 N3558500
Middle Lateral	San Miguel	E335750 N3565500	E337180 N3564100	
Mitchell Lateral	San Miguel	E340980 N3558740	E341340 N3557160	
Montoya Drain	Canutillo, Smeltertown	E348800 N3527900	E353660 N3519520	E349590 N3523870
Montoya Intercepting Drain	Smeltertown	E349260 N3521460	E353640 N3519410	
Montoya Lateral A	Smeltertown	E348850 N3526540	E348840 N3524170	
Montoya Lateral B	Smeltertown	E350130 N3524470	E349530 N3522230	
Montoya Lateral C	Smeltertown	E350500 N3521240	E351160 N3519550	
Montoya Lateral D	Smeltertown	E348810 N3525220	E348300 N3523200	
Montoya Main Canal	Canutillo, Smeltertown	E348620 N3527920	E352680 N3520080	E349340 N3525100
Mundy Spur Drain	San Miguel	E337240 N3555880	E336970 N3556960	
Nemexas Drain	La Mesa, La Union, Canutillo, Smeltertown	E342080 N3547910	E350380 N3522220	E345340 N3536240

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Newsome Lateral	San Miguel	E342100 N3556580	E342280 N3555660	
O'Shea Lateral	La Union	E343840 N3539170	E342880 N3538790	
Park Drain	Las Cruces, Black Mesa, San Miguel	E331010 N3573030	E337110 N3562650	E334440 N3568050
Paxton Lateral	La Union	E343740 N3541110	E343160 N3540700	
Pence Lateral	Canutillo	E348640 N3528250	E348260 N3527520	
Picacho Canal	Doña Ana	E326380 N3586830	E325230 N3583670	
Picacho Drain	Las Cruces, Black Mesa	E326690 N3578270	E329050 N3568540	E326570 N3572790
Picacho Lateral A	Las Cruces	E326190 N3579360	East end E327460 N3577540 South end E326980 N3577280	Splits at E327080 N3577520
Picacho Lateral C	Las Cruces	E326300 N3576260	E327250 N3573820	
Picacho Main Lateral	Las Cruces, Doña Ana	E328080 N3570280	E325220 N3583560	E325810 N3577540
Porter Lateral	Las Cruces	E331450 N3575150	E331100 N3574500	
Prescott Spur Drain	San Miguel	E335220 N3558580	E335840 N3558730	
Propeck Lateral	Doña Ana	E326540 N3586540	E327170 N3586840	
Quesenberry Lateral	Las Cruces	E331040 N3578490	E329320 N3576360	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Redd Lateral	Las Cruces	E330780 N3578310	E330970 N3577830	
Reymond Lateral	San Miguel	E341510 N3557720	E342560 N3557700	
Rio Rancho Lateral	Doña Ana	E324820 N3589340	E325250 N3588720	
Rodriguez Lateral	San Miguel	E335280 N3560080	E336400 N3558680	
Rodriguez Spur Drain	San Miguel	E336960 N3558780	E337860 N3558720	
Rowley Lateral	La Union	E345150 N3540080	E346470 N3539400	
San Miguel Lateral	San Miguel, La Mesa	E336420 N3558680	E341110 N3550340	E338750 N3555610
San Miguel Spur Drain	San Miguel	E336120 N3558800	E335340 N3557860	
Santo Tomas Drain	Black Mesa, San Miguel	E331520 N3565680	E337210 N3560260	E334810 N3562120
Santo Tomas Lateral	Black Mesa, San Miguel	E331480 N3565720	E336860 N3561440	E334340 N3562890
Santo Tomas River Drain	Black Mesa, San Miguel	E331360 N3566190	E337860 N3560520	E334300 N3564290
Santo Tomas River Lateral	Black Mesa, San Miguel	E334310 N3563400	E337900 N3560460	E336400 N3562320
Santo Tomas Spur Drain 1	Black Mesa	E334120 N3562260	E335040 N3561710	
Santo Tomas Spur Drain 2	San Miguel	E335000 N3560200	E335690 N3560300	
Schaeffer Lateral	La Mesa	E338860 N3554850	E337940 N3553800	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
School Lateral	Las Cruces	E326510 N3576360	E327280 N3575060	
Schutz Lateral	Smeltertown	E347730 N3526900	E347630 N3524380	
Selden Drain	Leasburg	E321150 N3594600	E323190 N3589140	
Seden Lateral	Leasburg	E321460 N3594850	E322130 N3594260	
Shalem Drain	Doña Ana	E325450 N3586590	E327270 N3583920	
Shalem Spur Drain	Doña Ana	E325690 N3584660	E324660 N3584720	
Stahmann Intercepting Drain	Black Mesa	E331620 N3565430	E334360 N3561890	
Stevens Lateral	Smeltertown, Canutillo	E346720 N3527600	E346620 N3525080	
Strout Lateral	La Mesa	E340660 N3550980	E340360 N3550560	
Talbot Lateral	La Union	E343500 N3538540	E345420 N3535900	
Taylor Lateral	Las Cruces	E328320 N3579640	E328740 N3583000	
Texas Lateral	Canutillo	E347470 N3539300	E348340 N3537940	
Three Saints Lateral	San Miguel, La Mesa, Anthony, Canutillo	E342100 N3556570	E347460 N3539740	E343880 N3549150
Three Saints West Lateral	La Mesa	E344300 N3547180	E345120 N3542060	
Tortugas Lateral	Las Cruces	E334400 N3570720	E333980 N3572080	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Turney Lateral	Las Cruces	E332280 N3573810	E332210 N3573360	
Upper Chamberino Lateral	San Miguel, La Mesa	E335820 N3558940	E341130 N3549820	E339820 N3557260
Utting Lateral	San Miguel	E336280 N3568200	E335850 N3567980	
Vinton Cutoff	Canutillo	E347360 N3536900	E348280 N3533800	
Vinton Drain	La Union, Canutillo	E345860 N3539540	E346890 N3535300	
Vinton Lateral	La Union, Canutillo	E345480 N3538430	E347460 N3536100	
Vinton River Drain	Canutillo	E348220 N3536570	E347990 N3533260	
Walter Lateral	La Mesa	E339540 N3551940	E339380 N3551380	
Want Lateral	La Mesa	E341060 N3548610	E341100 N3547340	
Weeks Lateral	San Miguel	E341890 N3557000	E342960 N3556960	
West Drain	San Miguel, La Union, Strauss, Smeltertown	E335140 N3559660	E347450 N3524200	E344620 N3532610
West La Mesa Spur Drain	La Mesa	E338040 N3555380	E338030 N3554320	
West Side Canal	Black Mesa, San Miguel, La Mesa	E330590 N3566800	E342540 N3547440	E339140 N3551880
Williams Lateral	Black Mesa	E334340 N3567180	E335110 N3567150	
Wood Lateral	La Mesa	E342940 N3545560	E344220 N3544140	

10. Geographical Data, continued

UTMs for Linear Engineering Features in the Mesilla Valley				
Feature Name	**USGS 7.5 Minute Quadrangles**	**UTM Start Point**	**UTM End Point**	**UTM Int. Point**
Zack Lateral	La Union, Strauss	E345380 N3528200	E345600 N3527250	

The following are the UTM Zone 13 values for non-contributing elements of the district:

Del Rio Extension Drain	(Start)	E 327220	N 3582790	(Las Cruces Quad.)
	(End)	E 327780	N 3579420	
Garfield Siphon		E 284400	N 3632410	(Garfield Quad.)
Picacho Arroyo	(Start)	E 325060	N 3579970	(Las Cruces Quad.)
	(End)	E 325970	N 3580710	
Picacho Flume		E 325220	N 3584440	(Doña ana Quad.)
Picacho North Dam		E 325480	N 3581120	(Las Cruces Quad.)
Picacho South Dam		E 325070	N 3579780	(Las Cruces Quad.)

Verbal Boundary Description:

1. Canals and laterals: a strip 100 feet wide, centered on the canal or lateral.
2. Drains: a strip 80 feet wide, centered on the drain.
3. Associated structures at Leasburg Dam: a 250 by 165 foot area between the Santa Fe-Southern RR right-of-way and the Leasburg Diversion Dam, containing the residential complex associated with the dam – in this case, the district boundary being exactly coterminous with LA 106782, the site designation for the complex.
4. Diversion dams and other localized engineering fetures: boundary is coterminous with the structures – no adjoining lands or waters.
5. Picacho Arroyo: a strip 100 feet wide, centered on the arroyo.

Boundary Justification:

The district is a large and irregular irrigation area. The legal boundaries of the irrigation district, established in large part for tax purposes, are extremely irregular and do not enclose all portions of all elements comprising the district. With a few exceptions, the irrigation system consists of overlapping dendritic patterns of linear features. The most logical boundary under the circumstances is to define the district as a series of narrow strips just enclosing the linear features, plus point locations for the few nonlinear features, thus excluding all property not part of the district. For non-linear features, UTM point locations are provided. For linear features, the start and end points of the strips are provided, usually with one or more intervening points to help define the path the feature takes. The precise locations of the strips are best determined by examining the accompanying USGS maps, on which the the features are indicated.

11. Additional Documentation

Maps

USGS 7.5' quadrangles containing the Elephant Butte Irrigation District:

Arroyo Cuervo
Rincon
Selden Canyon
Garfield
Sierra Alta
Hatch
Smeltertown
Strauss
Canutillo
La Union
Anthony
La Mesa
San Miguel
Black Mesa
Tortugas
Las Cruces
Doña Ana
Leasburg

USGS 1:250,000 maps including Elephant Butte Irrigation District boundaries:

Las Cruces, New Mexico
El Paso, Texas

Photographs

All historic photographs are courtesy of the Rio Grande Historical Collections, New Mexico State University Library, Las Cruces, New Mexico. Original Reclamation Service captions are given in quotes.

1. Leasburg Canal
   Elephant Butte Irrigation District
   Doña Ana County, New Mexico
   Photographer Unknown
   February 12, 1907
   Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
   New Mexico State University Library, Las Cruces, NM
   "Rio Grande Project, N.M. Looking down main canal on north side of river from Penasco Rock, showing the excavation and construction of Leasburg Canal, Leasburg diversion. Feb. 12, 1907."

11. Additional Documentation, continued

2. Leasburg Dam
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Approach Channel to Intake and Sluice Gates, Leasburg Dam, December, 1917."

3. Leasburg Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Removing Silt, Leasburg Canal, December, 1917."

4. Mesilla Dam
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Mesilla Dam from Upstream, December, 1917."

5. Mesilla Dam and Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer: R. B. D.
May 1920
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Mesilla Canal and gates at Dam. R. B. D. May 1920."

6. Percha Dam
Elephant Butte Irrigation District
Sierra County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Percha Dam, looking east, December, 1917."

11. Additional documentation, continued

7. Percha Dam
Elephant Butte Irrigation District
Sierra County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Taintor Sluice Gates and Arrey Canal Intake, Percha Dam, December, 1917."

8. Percha Canal
Elephant Butte Irrigation District
Sierra County, New Mexico
Photographer: R. B. D.
May 1920
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Percha Canal and headgates. R.B.D. May 1920"

9. East Side Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Double Barrel Siphon Under Santa Fe R.R. and State Highway on East Side Canal, Mesilla Valley, December, 1917."

10. Garfield Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Culvert under Garfield Canal, December, 1917."

11. Garfield Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Typical check Drop and Highway Bridge, Garfield Canal, December, 1917."

11. Additional documentation, continued

12. Montoya Main Lateral
Elephant Butte Irrigation District
El Paso County, Texas
Photographer Unknown
July 1918
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Check and Drop and Turnout, Montoya Main Lateral Looking Upstream, July, 1918."

13. Garfield Flume
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
December 1917
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Archives, Las Cruces, NM
"Intake, Garfield Flume, December, 1917."

14. Hatch Siphon and Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
July 1918
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Library, Las Cruces, NM
"Site of Hatch Siphon; Garfield Canal in Background, Embankment for Hatch Canal on Flood Plain of Rio Grande in Foreground. July, 1918."

15. Hatch Siphon
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
July 1918
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Library, Las Cruces, NM
"Construction of Hatch Siphon, looking North, July, 1918."

16. Park Drain
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
October 1918
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Library, Las Cruces, NM
"Monighan Dragline (U.S.R.S. #11) Operating on Park Drain, West of Mesquite, N.M., October, 1918."

11. Additional documentation, continued

17. Nemexas Drain
Elephant Butte Irrigation District
Doña Ana County, New Mexico or El Paso County, Texas
Photographer Unknown
April 1918
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Library, Las Cruces, NM
"Dragline #5, Nemexas, Hoisting Fuel, April, 1918."

18. Mesilla Valley
Elephant Butte Irrigation District
Doña Ana County, New Mexico
Photographer Unknown
July 1919
Original negative: Rio Grande Historical Collections/Hobson-Huntsinger University Archives
New Mexico State University Library, Las Cruces, NM
"Mesilla Valley. Field of Burbank super-wheat on Perkin's ranch north of Las Cruces. Mr. and Mrs. Perkins in field. Yield bushels to the acre although there was some loss due to late irrigation. July 1919."

19. Percha Diversion Dam
Elephant Butte Irrigation District
Sierra County, New Mexico
David A. Phillips, Jr.
February 1997
Original negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Dam from downstream; view to N

20. Arrey Canal
Elephant Butte Irrigation District
Sierra County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Taken near Percha Diversion Dam; view to S

21. Hatch Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Taken near Rincon Siphon; view to E

11. Additional documentation, continued

22. Angostura Lateral
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
View of lateral in pecan groves, view to SE

23. Rincon Siphon
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Downstream end of siphon; Rio Grande flowing behind; upstream end of siphon is beyond river, view to W

24. Leasburg Diversion Dam
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
View to W

25. Dam Tender's Residence, Leasburg Diversion Dam
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
View to E; taken from level of dam

26. Arguelles Check, Leasburg Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Note radial-lift design; view to NW

27. Mesilla Diversion Dam
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Upstream face of dam; view to SW

11. Additional documentation, continued

28. Mesilla Diversion Dam
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Downstream face of dam, showing radial-lift design; view to W

29. La Union Main Canal
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Canal at NM Highway 28; view to NW

30. Anthony Lateral
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Detail of screw-lift type tapbox near NM Highway 478; view to SW

31. East Drain
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
Drain near Anthony Lateral; view to SE

32. Anthony Drain
Elephant Butte Irrigation District
Doña Ana County, New Mexico
David A. Phillips, Jr.
February 1997
Original Negative: Farm and Ranch Heritage Museum, Las Cruces, NM
View to N; taken near Berino Siding, NM and NM Highway 226