

Snake River Valley Irrigation District
East Side of Snake River (River Mile 796)
Shelley Vicinity
Bingham and Bonneville Counties
Idaho

HAER No. ID-10

HAER
ID,
6-SHEL.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, California 94102

HISTORIC AMERICAN ENGINEERING RECORD

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Snake River Valley Irrigation District

HAER No. ID-10

Location: Snake River Valley Irrigation District is located on the east side of the Snake River. The diversion dam is located at river mile 796, and the main canal trends south to southwest to the SE 1/4 of Section 16, T1N, R37E, where it divides into the Cedar Point and Snake River Valley Canals. The Cedar Point Canal is adjacent to the Snake River and runs south to southwest for approximately 8 miles. The Snake River Valley Canal runs southeast for approximately two miles and divided in the NW 1/4 of Section 27, T1N, R37E into the West Branch and East Line Canals. The West Branch Canal trends south to southwest for 10 miles and terminates in the SW 1/4 of Section 34, T2S, R37E. The East Line Canal runs south for approximately 3 miles to its terminus at Sand Creek in the NE 1/4 of Section 32, T2S, R37E Bingham and Bonneville Counties, Idaho

UTM: 12.411850.4811890-411950.4811490 (Diversion Dam)

Dates of Construction: 1884-1886 - Cedar Point Canal
ca. 1886 - Snake River Valley Canal
1895 - District formed

Construction Engineer: W. V. Holm (1894-1898)

Present Owner: Snake River Valley Irrigation District
221 South Emerson
Shelley, Idaho 83274

Present Use: Irrigation

Significance: The Snake River Valley Irrigation District is an example of an early irrigation district that was formed to provide more effective management of the Cedar Point, Snake River Valley, West Branch, and East Line canals. The Cedar Point Canal was the first canal constructed by settlers in the Basalt area. Construction of the Snake River Valley Canal System near Shelley followed. The combined systems brought into irrigation 15,000 acres by 1906. The irrigation of semi-arid lands adjacent to the Snake River resulted in a major population increase and the economic growth of the area.

Report Prepared by: Alexy Simmons
Historical Architecture Specialist
CH2M HILL NORTHWEST
2300 NW Walnut Boulevard
Corvallis, Oregon 97339

Date: April 1986

Edited and
Transmitted by: Jean P. Yearby, HAER, 1987

EARLY HISTORY

The Snake River Valley Irrigation District (SRVID) was organized in 1906 under the provisions of Section 12, House Bill 112 of the Idaho Legislature. Formation of the district, which combined two existing canal companies, was supported by the State Engineer who felt "from an economic view, the organization, if carried out, will result in more satisfactory conditions for the farmers under the system, and [be] cheaper in yearly maintenance cost than the present system."¹ At its formation, the SRVID included 23,176 acres, with 15,000 being under cultivation. Located in Bingham County, Idaho, on the east side of the Snake River, the district encompasses an irregular tract about 12 miles long and averaging 3 miles wide. The district's irrigation system consisted of the Cedar Point Canal, Snake River Valley Canal, West Branch Canal, and East Line Canal (see canal alignment on Figure 1).

Canal Systems

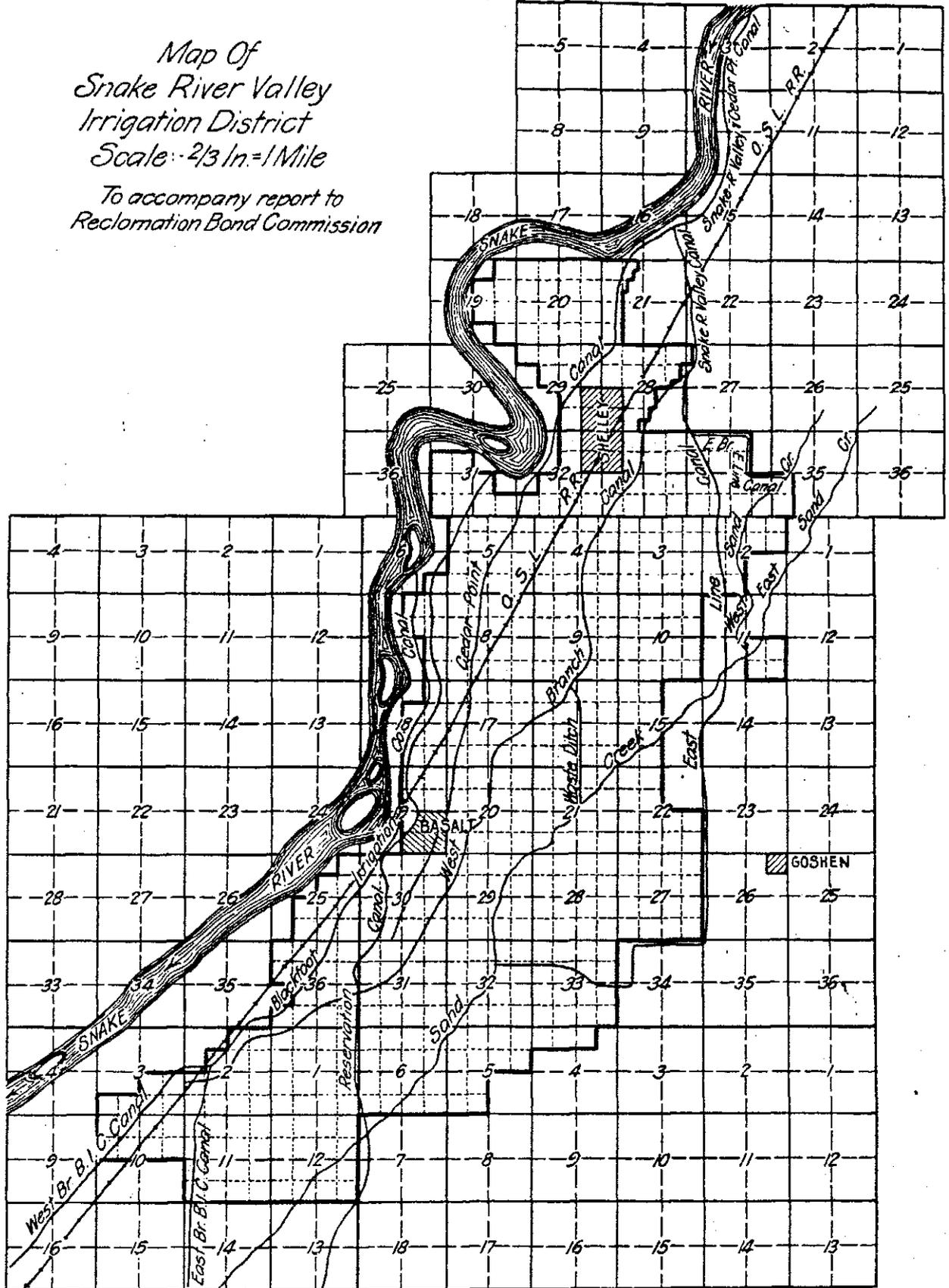
These canal systems were constructed in 1890 and 1897 respectively,² although portions of the canal systems were constructed earlier by area settlers. In the summer of 1884, George King and Henry R. Whitmill constructed a canal and began diverting water from the Snake River at Cedar Point (east bank of the Snake River, NW 1/4 of the NE 1/4 of Section 3, T1N, R37E, B.M., Bingham County, Idaho) to their homesteads near Basalt.³ Other area settlers enlarged the Cedar Point Canal system by adding several branches in the years that followed.

Settlers at Shelley also wanted to develop an irrigation system and were granted permission to widen the mouth of the Cedar Point Canal, tripling the capacity of the diversion and beginning the Snake River Valley Canal Company. The Snake River Valley Canal Company was a result of the joint effort of area farmers who had formed the West Branch Canal Company and the East Line Canal Company. These companies found it advantageous to combine their efforts and use the channel of the Cedar Point Canal Company for the conveyance of water to a common canal, the Snake River Valley Canal. Water was carried in the Snake River Valley Canal to the Hult Divider, near Shelley, where the water was diverted into the East Line and West Branch Canals.

In Idaho State Engineers biennial report for 1899-1900, it is noted:

The Cedar Point canal, owned by the Cedar Point Water Company of Basalt, takes its water from Snake river on the east side, in Sec. 3, T. 1 N., R. 37 E., and carries it in a southwesterly direction. At the head of the canal the river forks leaving an island between; a wing dam built of rocks extends to the island. The canal is 10 miles long, 16 feet on top, with a fall per mile of 3 feet; it has a capacity of 100 second feet, and cost \$20,000.

Map Of
Snake River Valley
Irrigation District
Scale: 2/3 In. = 1 Mile
To accompany report to
Reclamation Bond Commission



circa 1907
On file Idaho State Water Resources Department
Boise, Idaho

FIGURE 1
CANAL ALIGNMENT

The ownership of this canal is divided into 517 shares, each share representing 10 inches of water costing originally \$25 per share. The annual assessment levied to cover the expense of its maintenance and operation amounts to about 15 cents per acre. It irrigates about 5,000 acres.

The Snake River Valley canal receives its water from Snake River. It heads in Sec. 3, T. 1 N., R. 37 E., on the east side, about 4 miles below Idaho Falls. For the first 3 miles it is an enlargement of the Cedar Point canal. It is 5 miles long, has a top-width of 38 feet, an average grade of 2 feet per mile, a capacity of 200 second feet, and its cost is estimated at \$50,000. The ownership of this canal is divided into share of 2 miners inches each and the annual assessment amounts to about 35 cents per acre, most of which can be worked out. The canal is designed to irrigate 10,000 acres and now waters about 3,000. It has only been in use 3 years.⁴

In 1901-1902, the Cedar Point and Snake River Valley Canals were described as follows in Table 1. An additional 3,000 acres had been brought into irrigation in 2 years time by the Snake River Valley Canal Company.

Table 1
 1901-1902 DESCRIPTION OF THE
 CEDAR POINT AND SNAKE RIVER VALLEY CANALS

<u>Canals</u>	<u>Length (miles)</u>	<u>Width (feet)</u>	<u>Flow (second- feet)</u>	<u>Number Acres Under District</u>	<u>Irrigated Acres</u>
Cedar Point Canal ^a	7	23	100	4,000	4,000
SNAKE RIVER VALLEY Canal	5	38	200	10,000	6,000

^aOne thousand irrigated acres and 3 miles of canal that were listed in the 1899-1900 report above were excluded from this report. This discrepancy suggests that the 1,000 acres and 3 miles of canal may have been transferred to another irrigation company or that either the 1899-1900 or 1901-1902 report may have been in error.

Source: Idaho State Biennial Report of the State Engineer to the Governor of Idaho for the Years 1901-1902. Statesman Print, Boise, Idaho.

Canal Maintenance

Yearly maintenance and construction conducted on the canal systems included repairs to the headgates and canals, canal cleaning, the addition to rock to the wing dam, subgrading of sections of the canal, and the construction of canals, laterals and flumes. The rock to be added to the wing dam was stockpiled and then sledged by horse teams to the dam site when the river was frozen over and dropped through the ice.

During the winter of 1903-1904, the Cedar Point and Snake River Valley Canal companies made several joint decisions to improve water delivery:

- o Improvement of the diversion dam by lasting and removing 2,200 yards of lava from the forebay, to facilitate a more adequate water supply during low water and to use in the construction of a more durable coffer dam.
- o Installation of new headgates on the main canal.
- o Lowering and subgrading of the main canal to improve water delivery. 5

A small worker's camp composed of tents was maintained at the dam construction site during the winter of 1903 to 1904. The camp included a cook and dining tent, along with the workers' tents.

In 1904, the East Line and West Branch Canal companies began to operate both systems as part of the Snake River Valley Canal Company. Formerly, they were joined only in the operation and maintenance of the main canal used to divert water from the Cedar Point Canal.

Formation of the Snake River Valley Irrigation District

In 1906, it was proposed that the Cedar Point and Snake River Valley Canal companies combine management of the irrigation system by forming the Snake River Valley Irrigation District. In July of 1906, the proposed district consisted of 32-1/2 miles of main canal, one diversion dam, and many miles of small laterals, with 15,000 acres being under cultivation.⁶ (Figure 1 shows the combined canal systems.) The report of the Water Resources Department notes:

- o SRVID formation date as 1906
- o Original district acreage of 25,000 acres of private land
- o 30 miles of main canal and 15 miles of laterals

- o An original bond of \$275,000.00 in July 1907 for purchase of the Cedar Point and Snake River Valley Canal companies canals.⁷

Although it was not until June 27, 1908, that the Snake River Valley Canal Company formally turned over deeds to its systems (the East Line Canal, the West Branch Canal, the West Branch Canal, and the Snake River Valley Terminal Ditch) to the SRVID.⁸ On October 28, 1910, G. W. Fell, the Carey Act Inspector, reported:

There has been no money expended for any new construction, further than the extension of small laterals, since the district was organized. Some extensive repairs, however, have been made to the diversion dam in Snake River.

The district owns and operates approximately fifty miles of canal, and all laterals, discharging 500-inches or more. Smaller laterals are maintained by owners under same. The first three miles of main canal is forty-foot wide on the bottom and carries 6-ft. of water. The district embraces 21,000 acres of irrigable land, and about 3,000 acres of land not accessible to irrigation, which is not assessed....

The 1910 assessment was \$1.15 per acre: 50-cents. for maintenance and 65-cents. for interest on bonds.⁹

During 1916, the SRVID let a contract for replacement of the wooden intake and headgates on the main canal. The new structure was made of reinforced concrete with four 9-foot-wide radial gates.¹⁰ The SRVID in 1916 included 25,000 acres, with 22,000 acres being irrigated. The conveyance system included 30 miles of main canal and 15 miles of laterals. The district had a water claim of 35,500 inches.

In the years that followed, major dams such as the Palisades Dam were constructed on the Snake River to provide additional irrigation water to southeastern Idaho farmers. The older canal companies were granted the privilege of purchasing water storage space in the reclamation project reservoirs. The purchase of storage assured a specified amount of water (measured in acre-feet) and thus assured an adequate irrigation supply to district farmers.

SRVID DAM

The SRVID wing dam in Section 3, T1N, R37E, required annual maintenance and repair. During the winter, rock was usually skidded across the ice and dropped on the dam. In 1903, the dam was raised to extend about a foot above the ice that capped the river. On March 7, 1903, a committee report was made to the Board that noted:

We have raised the entire dam so it is now over 4 feet higher than the grade of the canal and about 6 feet wide on top. We have used rock of good dimensions and think we have done a good substantial job; we recommend that certain parts of the dam be tightened with straw, hay, or some other like material for a great amount of water goes through the dam continuously and this will increase rather than decrease the water wear on the rocks.¹¹

In an effort to increase the district water supply, a contract was let to Engineer W. E. Young. Subgrading of the dam was recommended and the work began in the fall of 1903.

In October 1924, a request for proposals was prepared for construction of a concrete-type gravity diversion dam to be located immediately downstream of the existing SRVID wing dam (see Photos ID-10-1 and ID-10-6). The dam is divided into two parts by an island. The west dam is approximately 820 feet long and approximately 3 feet high. The east dam is approximately 460 feet long and about 4 feet high (see the Section Plan on Photos ID-10-2 through ID-10-4). The specifications for the dam walls are shown in Photo ID-10-4. In addition, it was specified that the east dam would not make an absolute watertight cutoff at Station 4 (see Photo ID-10-2), where a crevice or deep depression in the bedrock existed. The dam was not constructed until 1935, when it was taken on as a project of the WPA.¹²

CURRENT MANAGEMENT AND OPERATION

The SRVID is administered by an elected Board of Directors. A manager, along with ditch riders and a secretary-receptionist, are employed by the district. The SRVID maintains an office and shop in Shelley, Idaho. The SRVID system includes 40 miles of canal and SRVID-owned laterals (see Figure 1, Sheets 1 through 4). The majority of the canal is unlined and is approximately 72 feet wide immediately downstream from the main canal intake. It averages about 58 feet in width at the canal rim and 4 to 5 feet deep. Approximately 1,400 subscribers are served by the SRVID, which includes almost 22,000 acres. The principal crops raised by farmers in the district are potatoes, sugar beets, and forage crops. In addition, pasture lands are irrigated.

The SRVID dam and canal in Section 34, T1N, R37E, and in Sections 3 and 10, T1N, R37E will be inundated by the Gem State Hydroelectric project. The attached figures (Sheets 1 through 7) show the portions of the SRVID canal that will be inundated. Canal features, other than the dam, in the project area are the canal intake, a wastegate, and approximately two miles of unlined canal (see Photos ID-10-6 through ID-10-13). A new canal intake will be constructed as part of the Gem State Hydroelectric project to assure continued operation of the remainder of the SRVID's canal system.

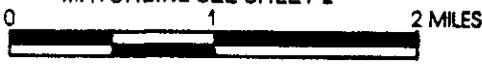
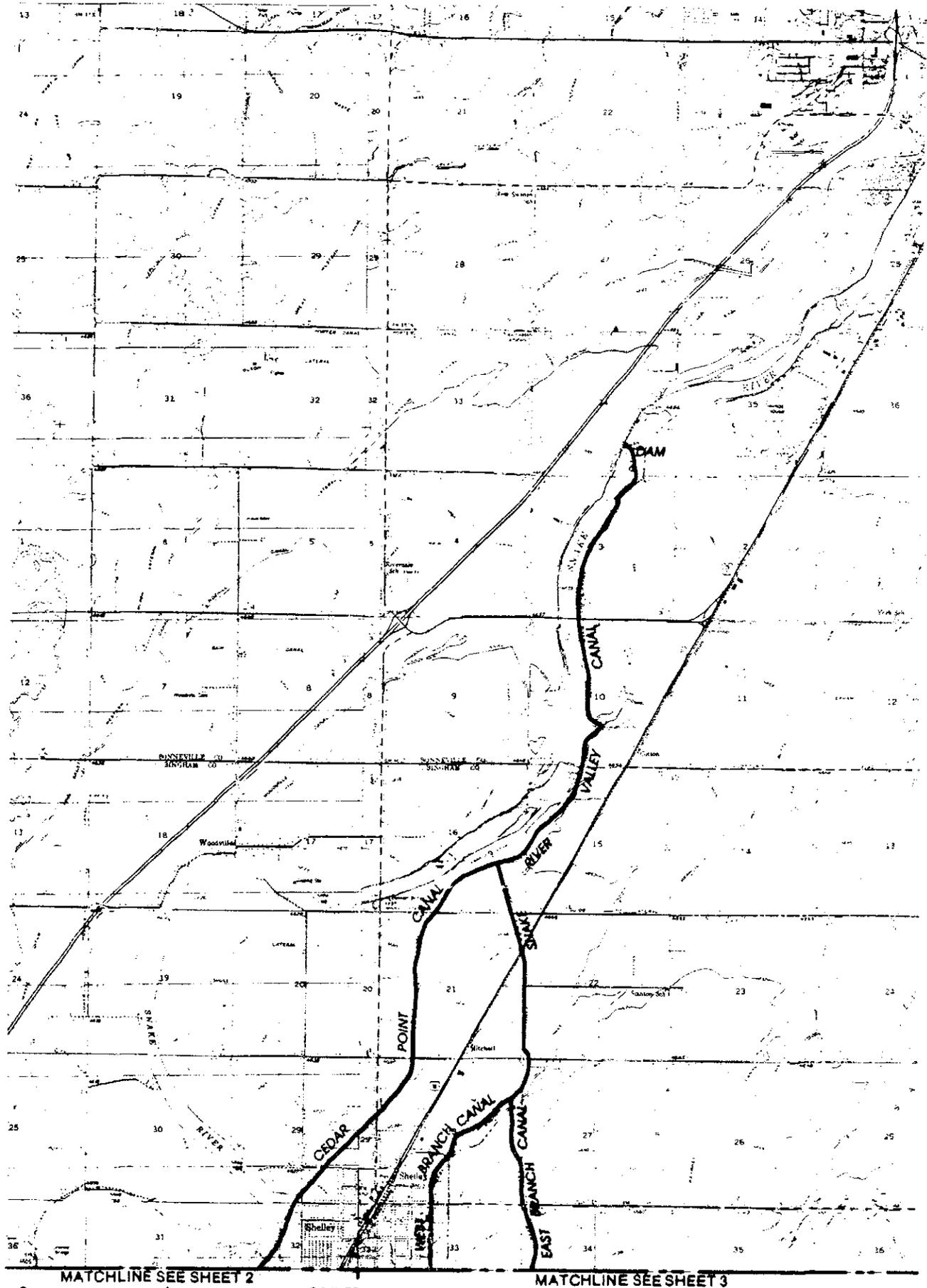
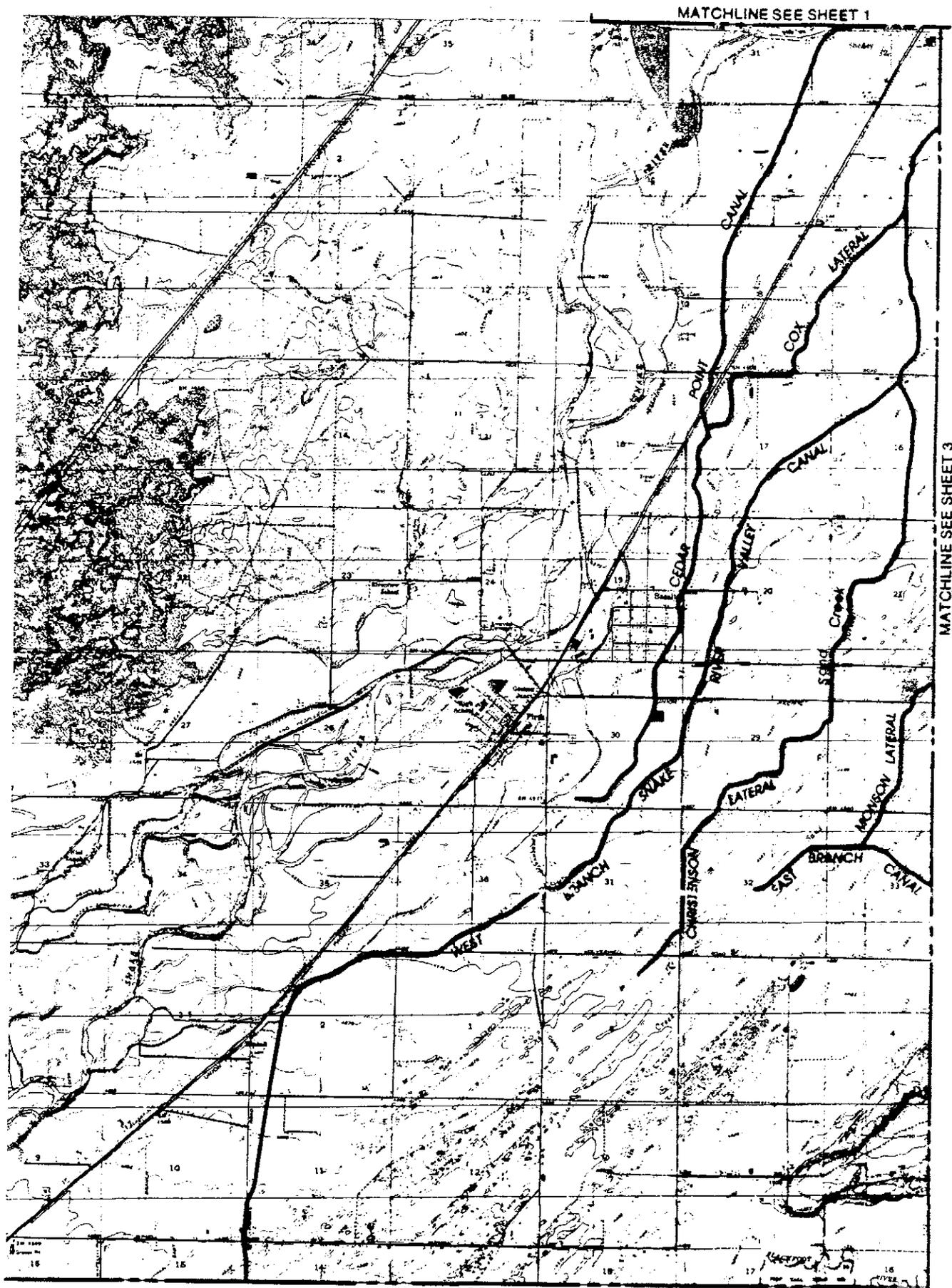


FIGURE 2
SNAKE RIVER VALLEY
IRRIGATION DISTRICT CANALS
SHEET 1 OF 4



0 1 2 MILES



FIGURE 2
SNAKE RIVER VALLEY
IRRIGATION DISTRICT CANALS
SHEET 2 OF 4

MATCHLINE SEE SHEET 1

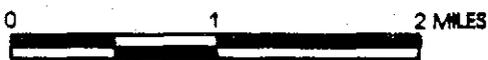
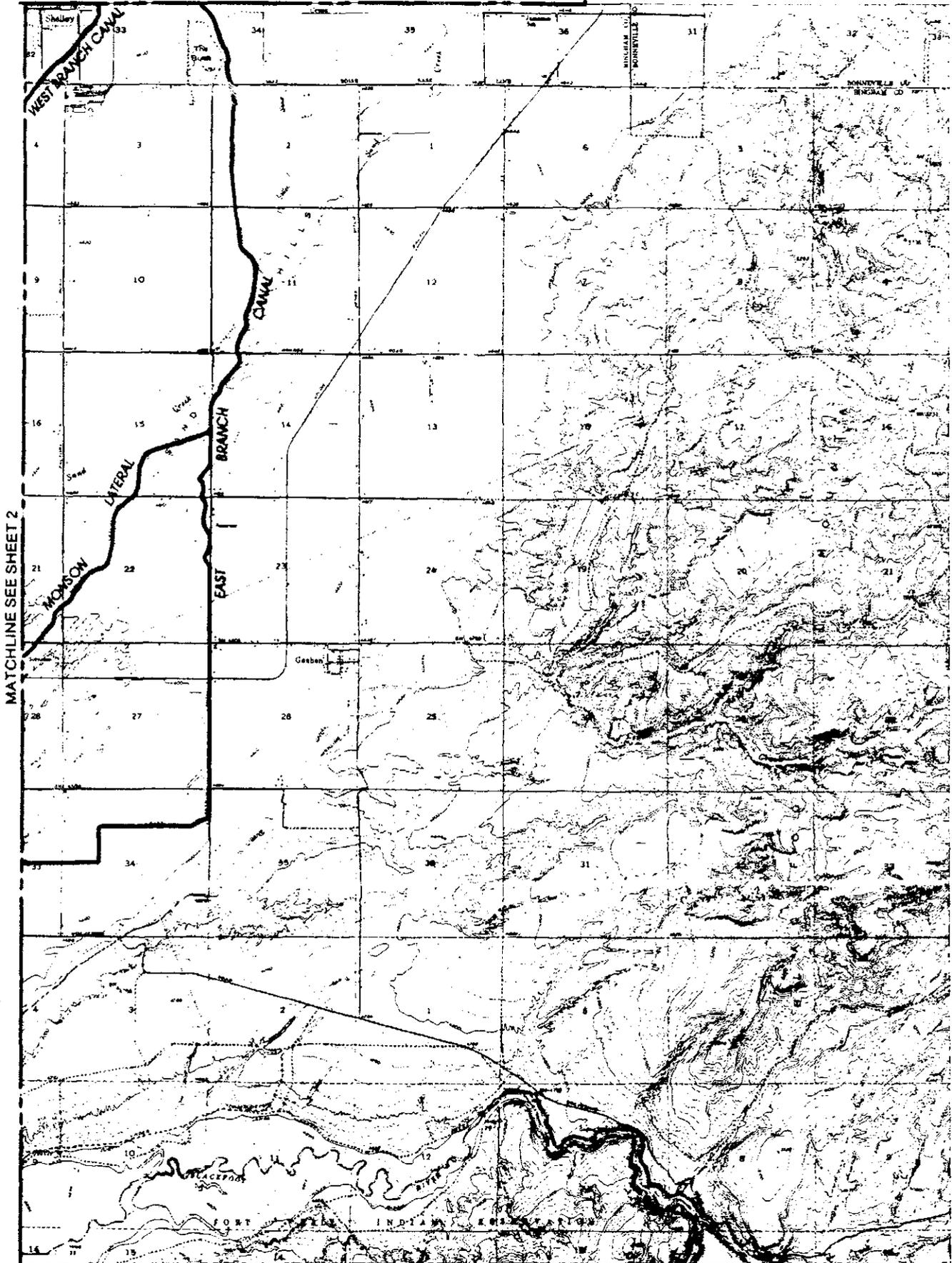


FIGURE 2
SNAKE RIVER VALLEY
IRRIGATION DISTRICT CANALS
SHEET 3 OF 4

MATCHLINE SEE SHEET 2

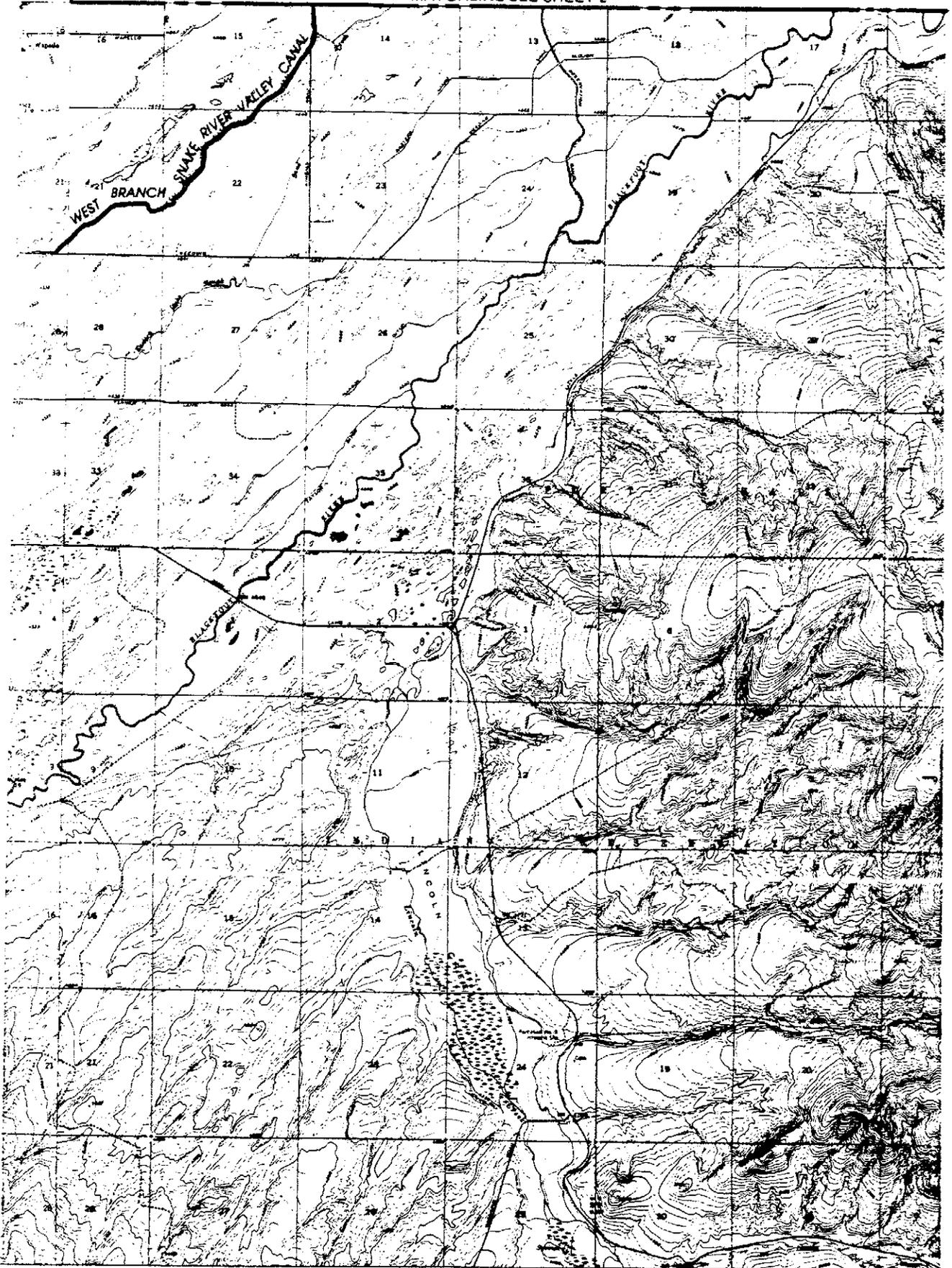


FIGURE 2
SNAKE RIVER VALLEY
IRRIGATION DISTRICT CANALS
SHEET 4 OF 4

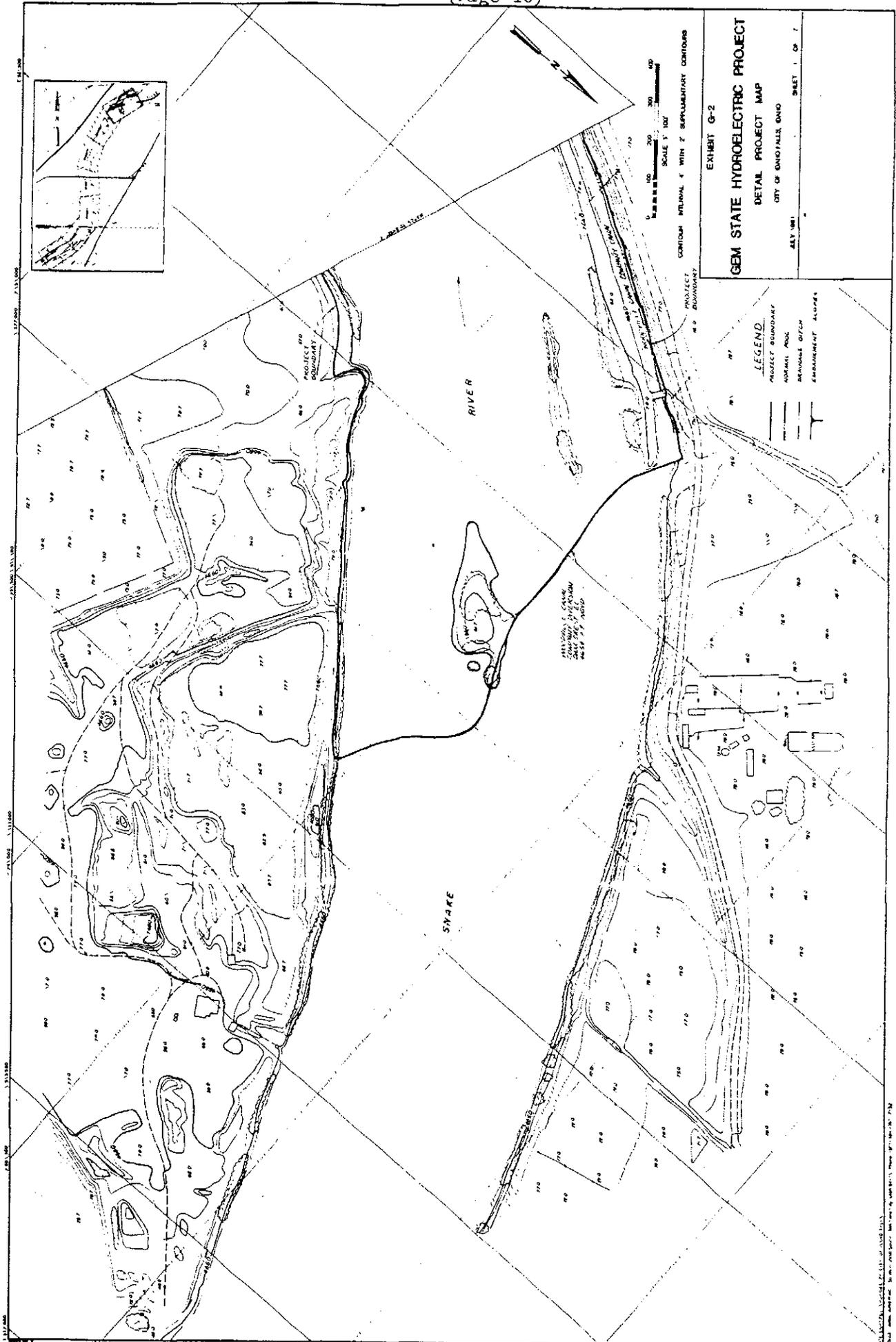


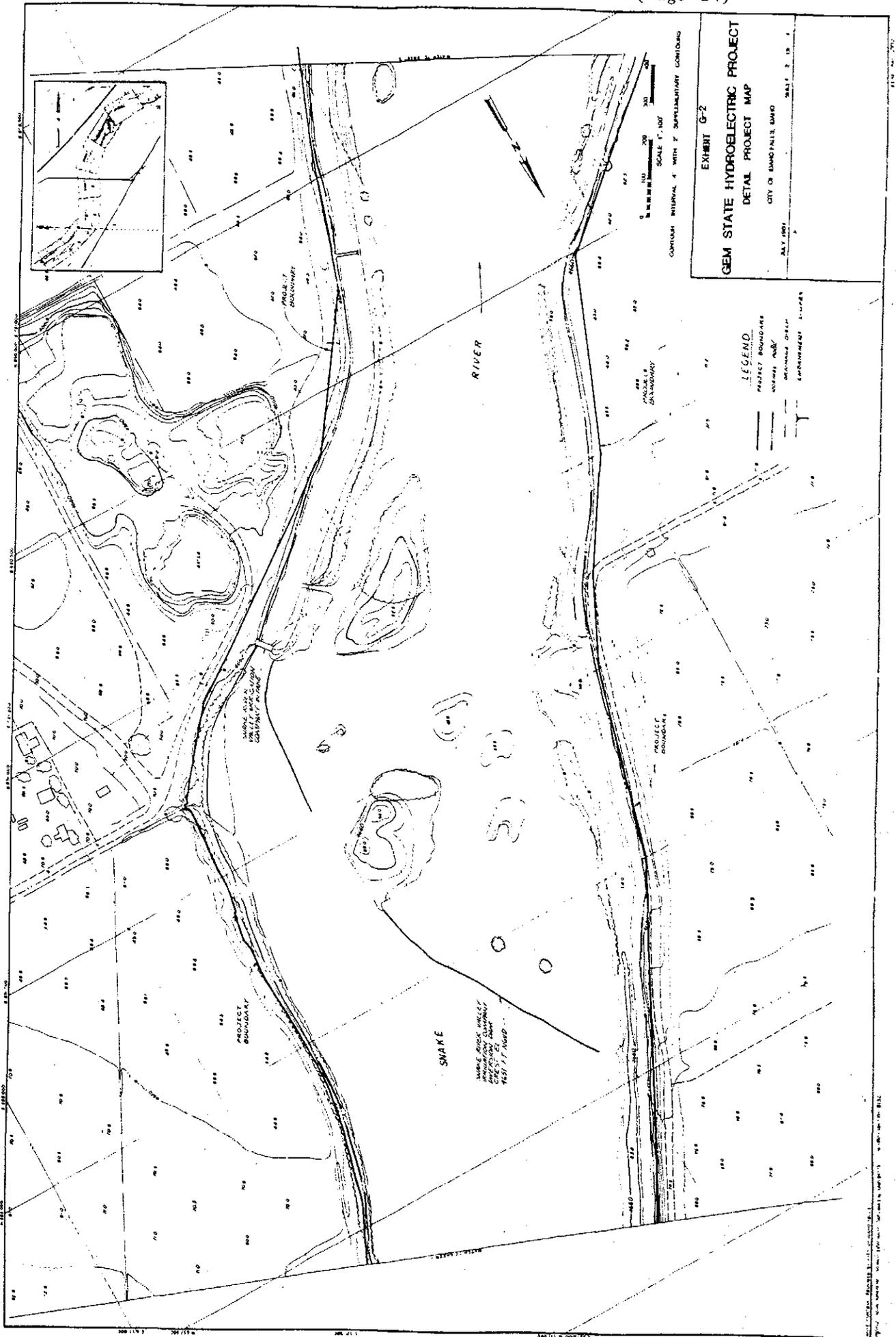
EXHIBIT G-2
GEM STATE HYDROELECTRIC PROJECT
 DETAIL PROJECT MAP
 CITY OF BONAVILLE DAM
 SHEET 1 OF 1

LEGEND
 PROJECT BOUNDARY
 NORMAL POOL
 MAXIMUM OTCF
 EMBANKMENT SLOPES

CONTOUR INTERVAL 4 WITH 2 SUPPLEMENTARY CONTOURS
 PROJECT BOUNDARY
 SCALE 1" = 100'

HAER No. ID-10

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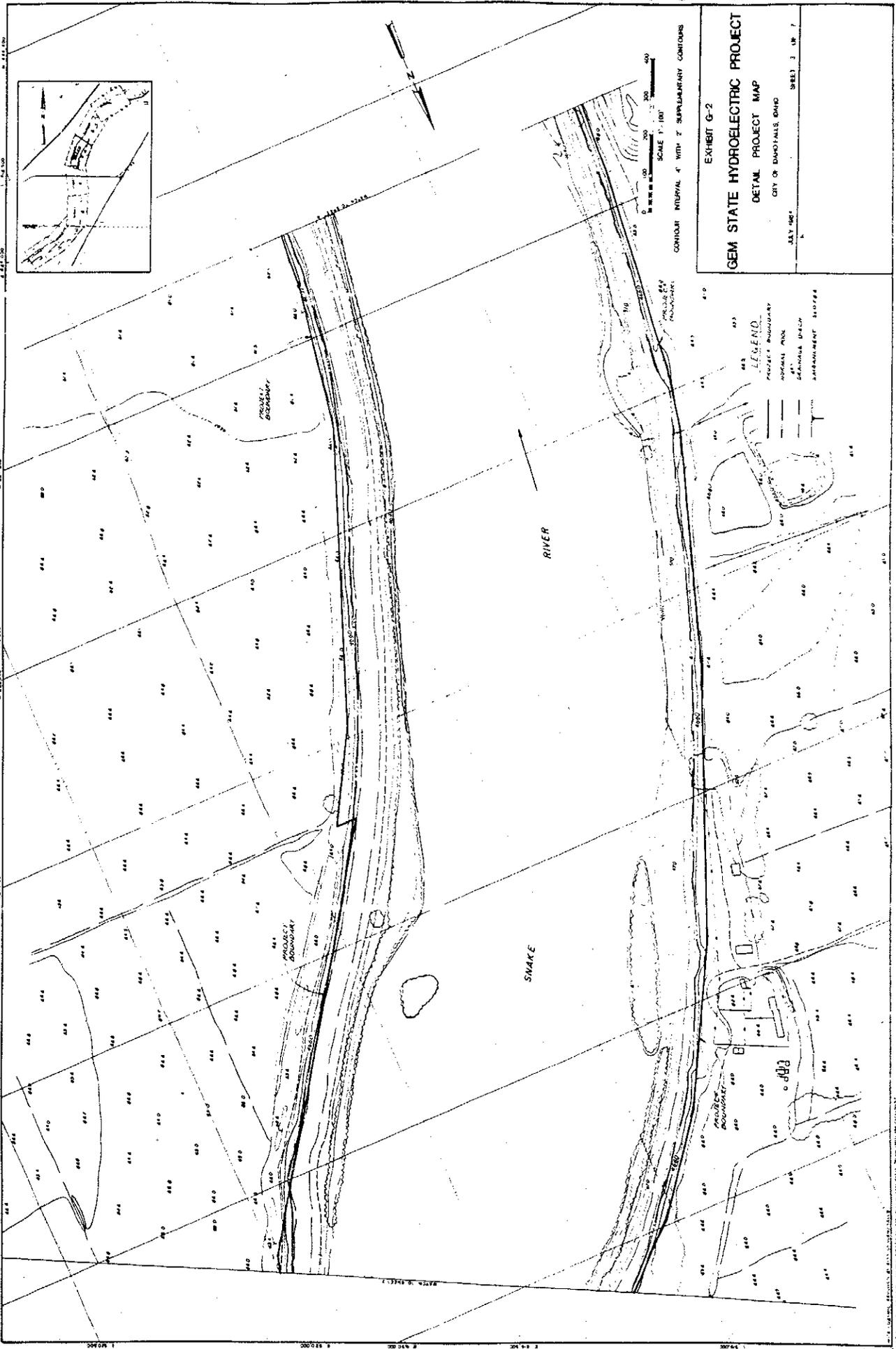


EXHIBIT G-2
GEM STATE HYDROELECTRIC PROJECT
DETAIL PROJECT MAP
CITY OF DANFORTH, OHIO
JULY 1967
SHEET 3 OF 7

LEGEND
PROJECT BOUNDARY
SEWERAGE SYSTEM BOUNDARY
NORMAL POOL
SAPPHIRE DAM
SAPPHIRE DAM APPROXIMATE STAGES

SCALE 1" = 100'
CONTOUR INTERVAL 4' WITH 2' SUPPLEMENTARY CONTOURS

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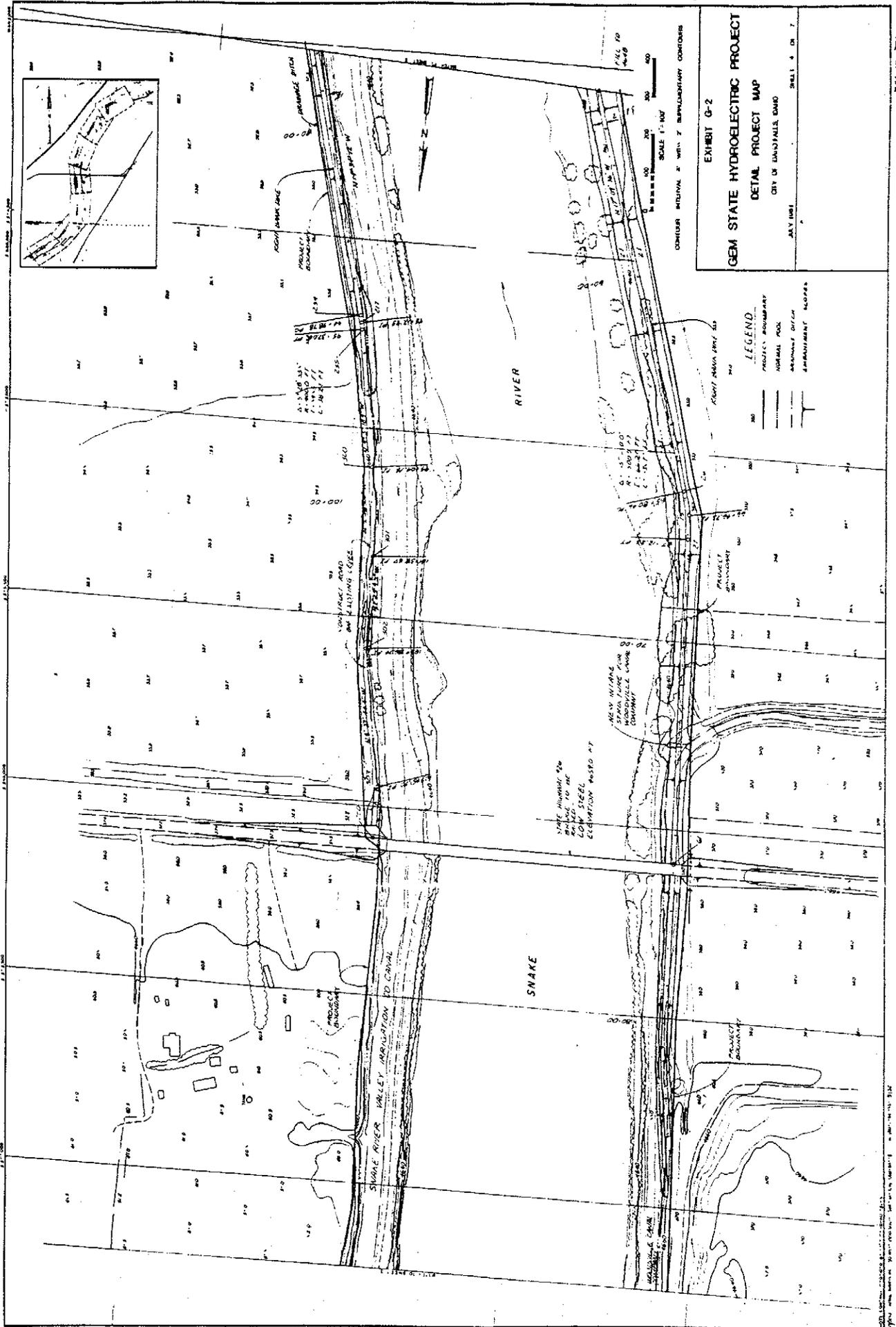


EXHIBIT G-2
GEM STATE HYDROELECTRIC PROJECT
 DETAIL PROJECT MAP
 CITY OF DANFORTH DAM
 JULY 1951
 SHEET 4 OF 7

LEGEND
 PROJECT BOUNDARY
 NORMAL POOL
 IRRIGATION CANAL
 EMBANKMENT SLOPES

HAER No. ID-10

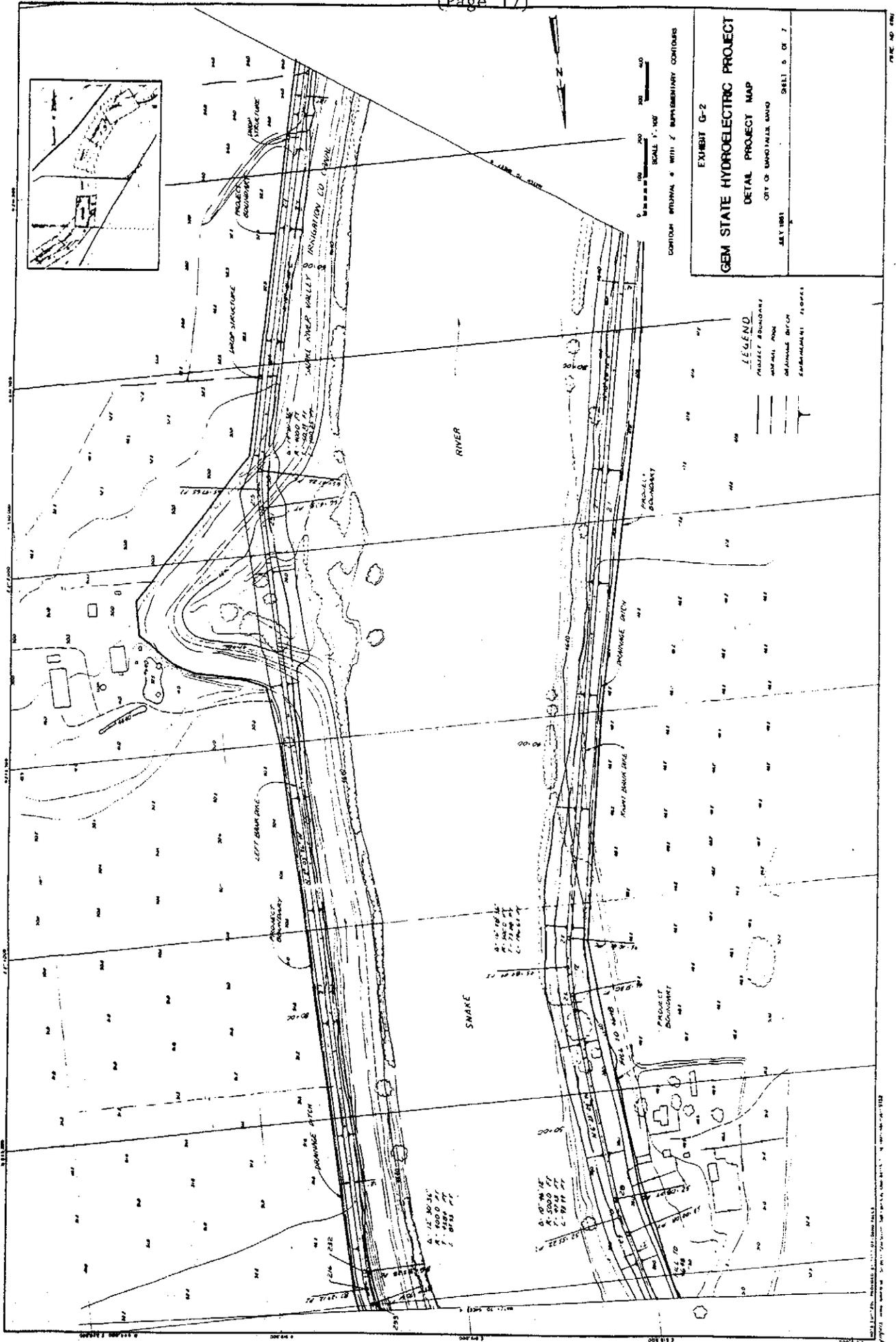


PLATE NO. 17

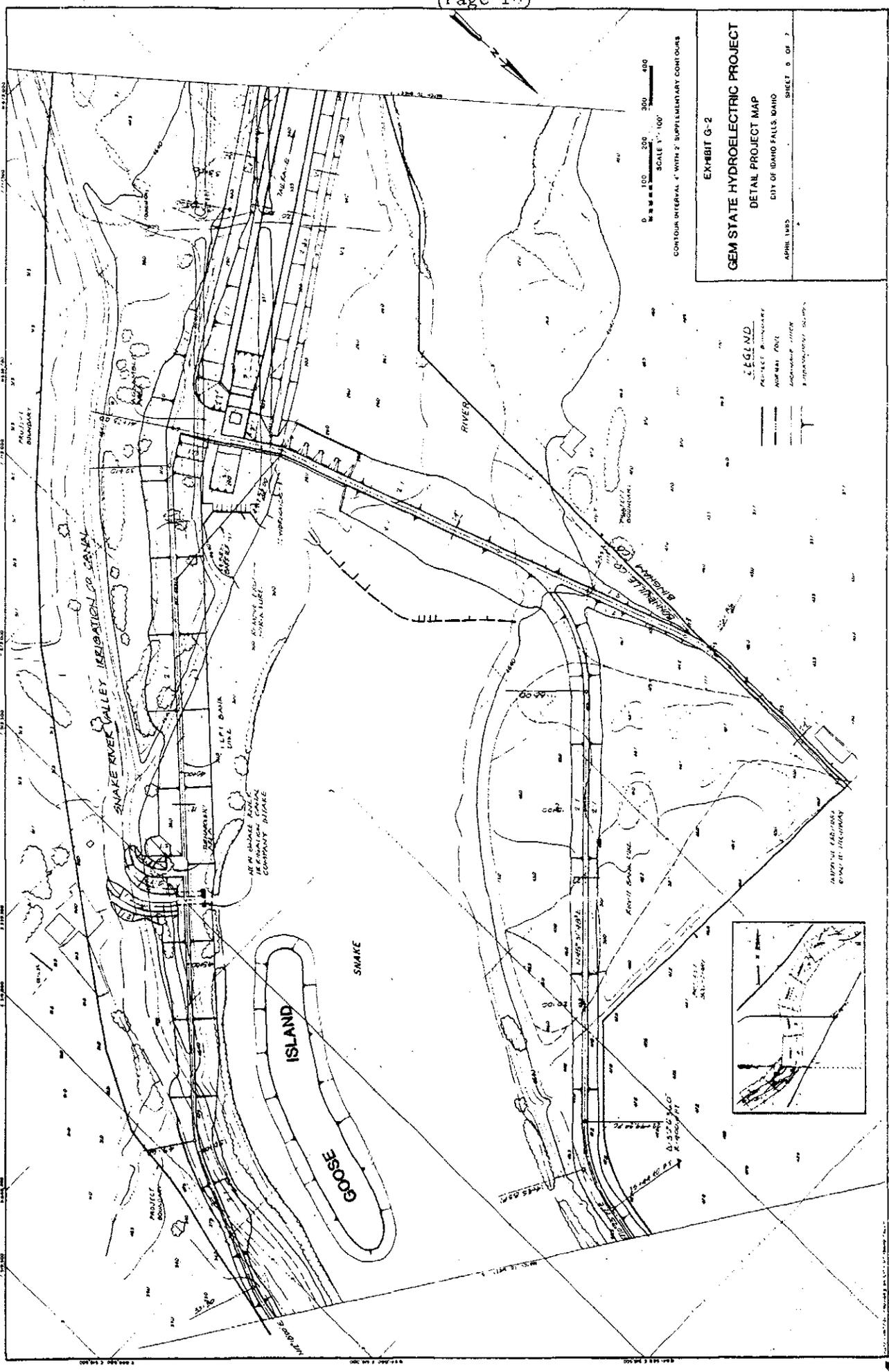


EXHIBIT G-2

GEM STATE HYDROELECTRIC PROJECT
 DETAIL PROJECT MAP
 CITY OF IDAHO FALLS WARD
 APRIL 1945
 SHEET 6 OF 7

LEGEND

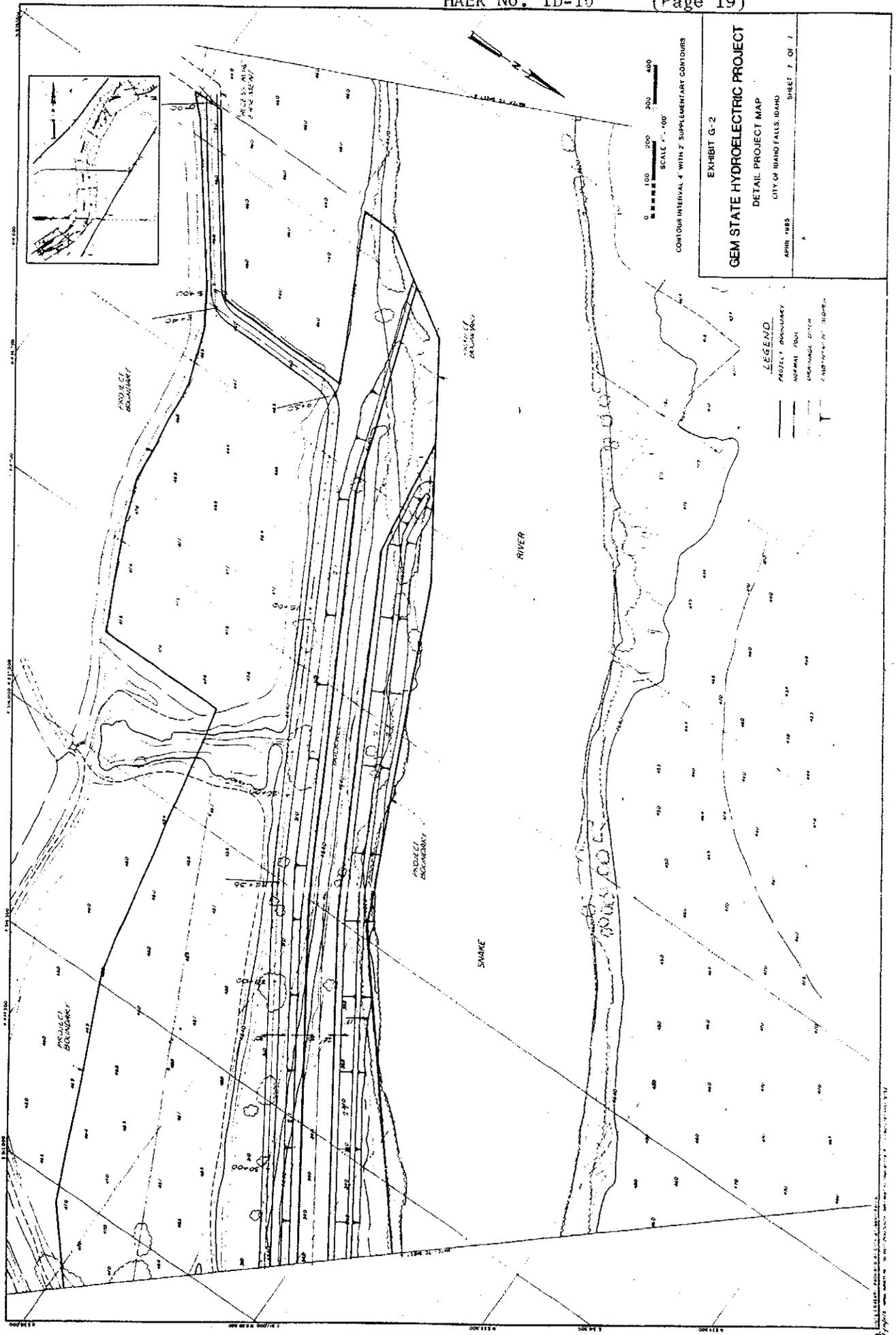
- PROJECT BOUNDARY
- PROPERTY LINE
- ADJACENT STATE
- IRRIGATION CANAL

CONTOUR INTERVAL 4' WITH 2' SUPPLEMENTARY CONTOURS

SCALE 1" = 100'

ADJACENT TERRITORY STATE OF MONTANA

7-2-45



FOOTNOTES

- 1 Idaho State, Correspondence of the State Engineers to Bingham County Commissioners, 1906 (on file at the Idaho State Water Resources Department, Boise, Idaho).
- 2 G. W. Fell, Correspondence to G. W. Fell to the State Engineer, D. G. Martin, 1910 (on file at the Idaho State Water Resources Department, Boise, Idaho).
- 3 Edith Haroldsen Lovell, "Captain Bonneville's County," The Eastern Idaho Farmer, Idaho Falls, Idaho, 1963, p. 237.
- 4 Idaho State Engineer, Biennial Report of the State Engineer to the Governor of Idaho for the years 1899-1900. Capital Printing Office, Boise, Idaho, 1900.
- 5 Dennis J. Hjelm, "A Short History of the Snake River Valley Irrigation District," 1982 (on file at the Snake River Valley Irrigation District, Shelley, Idaho), p. 4.
- 6 N. N. Holm, Correspondence to W. V. Holm to the Board of County Commissioners, Bingham County, 1906 (on file at the Idaho State Water Resources Department, Boise, Idaho).
- 7 Idaho State Water Resources, Report of the Idaho State Water Resources Department to the Office of the State Engineer, 1916 (on file at the Idaho State Water Resources Department, Boise, Idaho).
- 8 Snake River Valley Canal Company, Minutes of the Meeting of June 27, 1908 (on file at the Snake River Valley Irrigation District, Shelley, Idaho).
- 9 Fell, correspondence to State Engineer.
- 10 Minutes of June 27, 1908, p. 5.
- 11 Snake River Valley Canal Company, Minutes of the Meeting of March 27, 1903 (on file at the Snake River Valley Irrigation District, Shelley, Idaho).
- 12 Hjelm, "A Short History," p. 7.