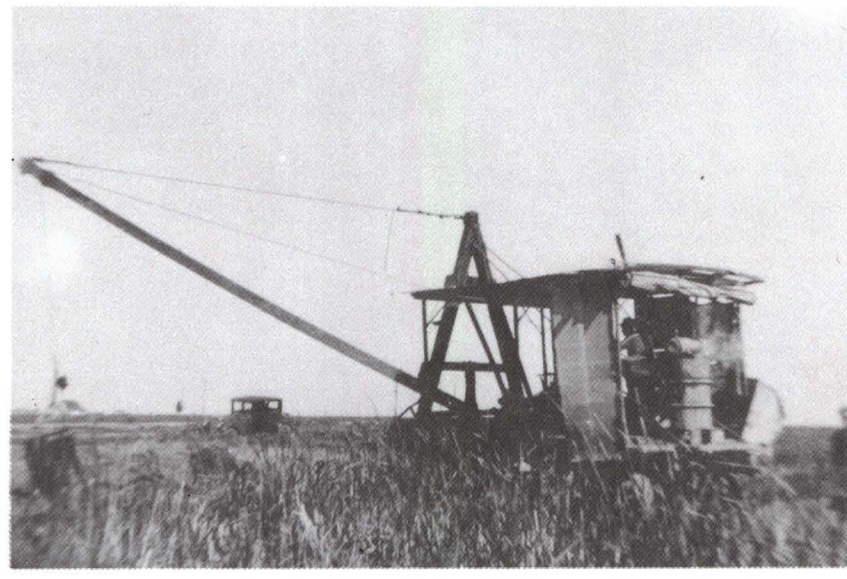


CANAL CONSTRUCTION
At the turn of the century, canals consisted of irrigation ditches dug manually adjacent to main streams.



Fore-runner of the dragline, called a "dinkie" (mid-1900's), had iron wheels. It pulled itself on ditches by using its cable, anchoring the cable, and reaching back in the direction of the ditched cable. A man is placing planks for a new move. (Central California Irrigation District.)



Ditching machine used in the late 1800's and early 1900's to build ditches and levees or other embankments. One person on one side was centered to the other side by a rope. Twelve horses and mules are pulling and four are passing. Moving 1,000 cubic yards per day was a good average, costing about 2 cents per cubic yard. (City of Bakersfield, Department of Water.)

Early 1900's scenes showing ditching at a smaller scale than above



Ditching with a plow in the early 1900's. A canal bottom is scarified to prepare for excavation. (Woodbridge Irrigation District.)



A mule-drawn Fresno scraper dumping a load of dirt scarified from a canal bottom. (Woodbridge Irrigation District.)



Preparing a canal for concrete lining. (Woodbridge Irrigation District.)

Rosedale Colony early '1800's'

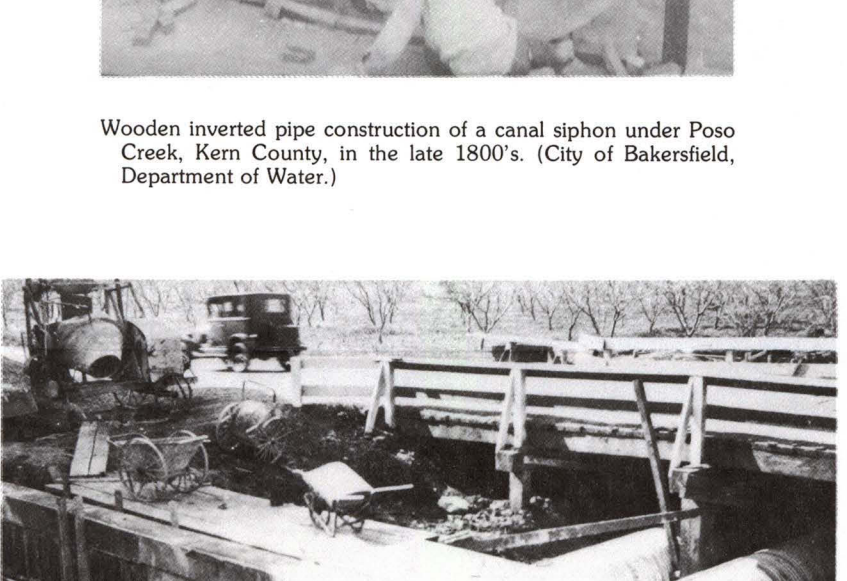


Manually dug ditches in Rosedale Colony, Kern County, in 1890. (City of Bakersfield, Department of Water.)

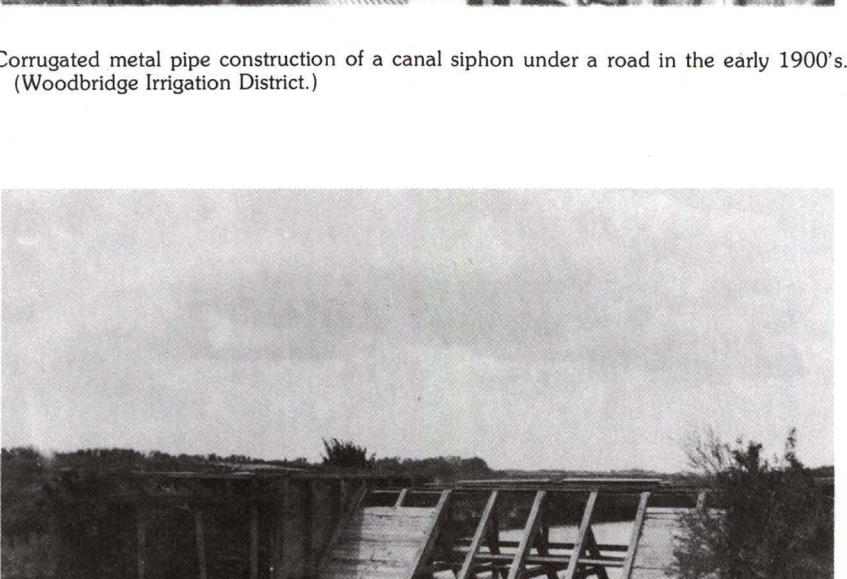
Pipes and Headgate early 1800's-1900's



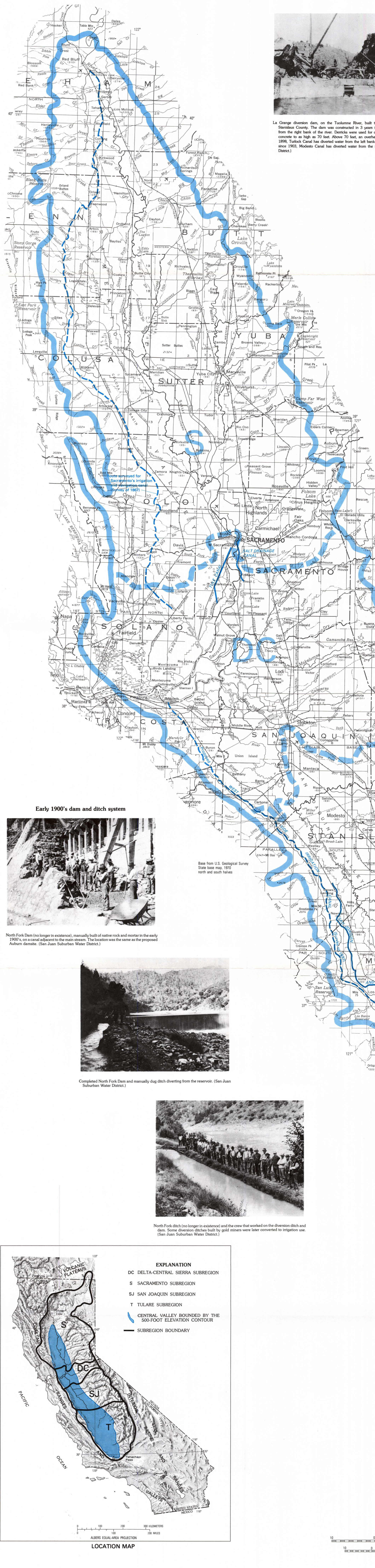
Wooden inverted pipe construction of a canal siphon under Power Creek, Kern County, in the late 1800's. (City of Bakersfield, Department of Water.)



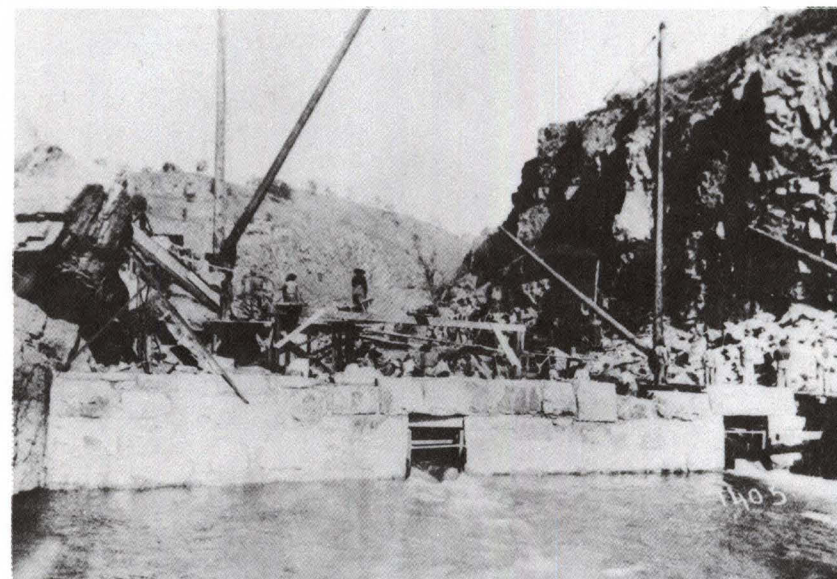
Completed metal pipe construction of a canal siphon under a road in the early 1900's. (Woodbridge Irrigation District.)



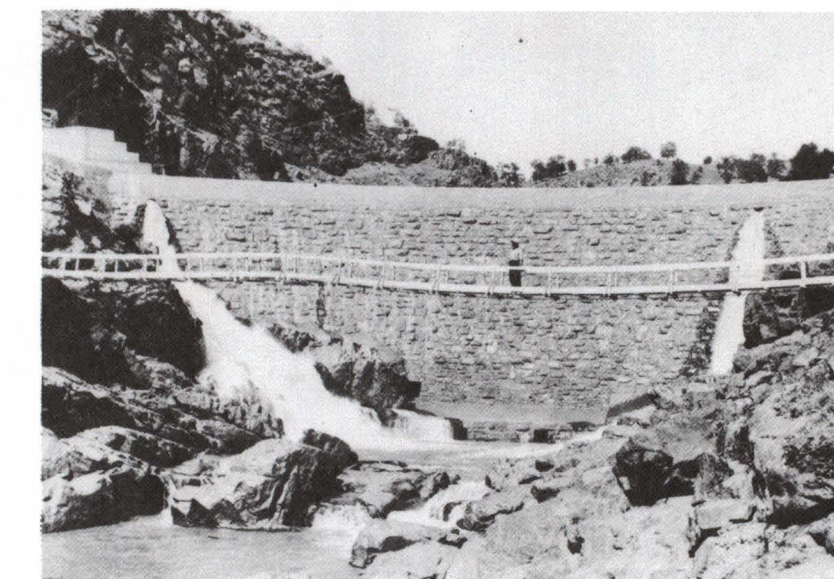
Headgate of a canal, controlled by a brush and dirt wing dam, that served an area west of the San Joaquin River, 1922. The abutment on the west side of the dam was constructed of tree trunks in upright posts backed up with willow trees and branches and backfilled with dirt. (Modesto Irrigation District.)



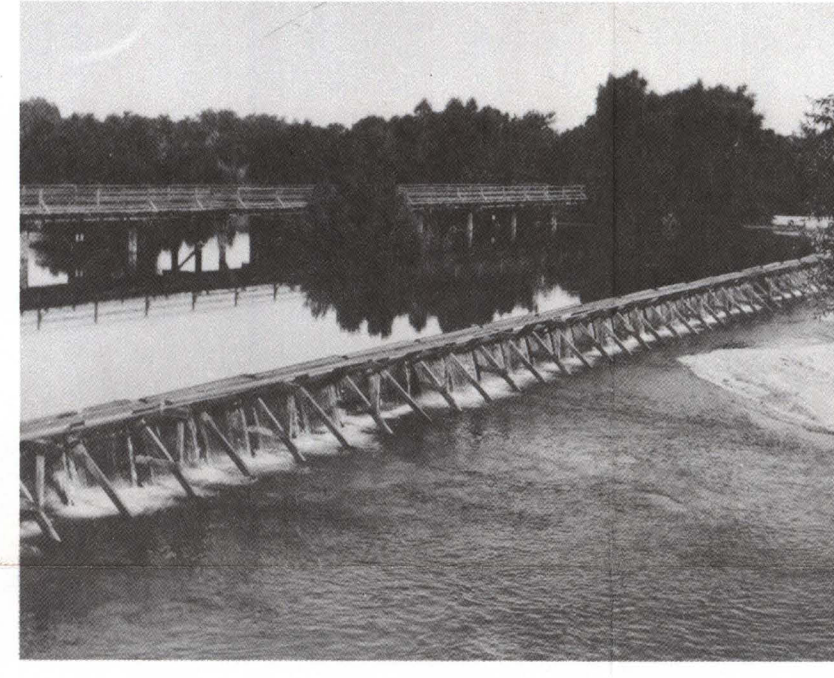
Dams and Weirs '1800's-1900's'



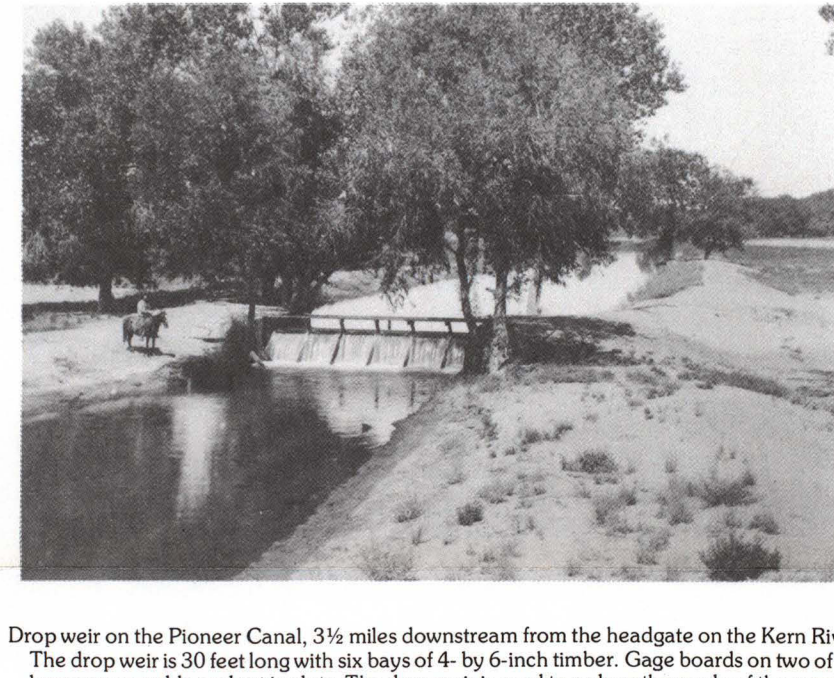
La Grange abutment dam, on the Turlock River built to abate dry conditions in Stanislaus County. The dam was constructed in 3 years (1891-93) from rock quarried from the right bank of the river. Ditches were used for quarrying and a 38 inch and concrete to as high as 70 feet. Above 70 feet, an overhead cable was required. Since 1898, Turlock Canal has diverted water from the left bank upstream from the dam, and since 1903, Modesto Canal has diverted water from the right bank. (Turlock Irrigation District.)



Completed La Grange Dam, in 1914. The original height of the dam was 129 feet above the abutment. In recent years the addition of reinforced concrete and grout has increased the height of the dam to more than 132 feet. (Turlock Irrigation District.)



Kern River irrigation system (KRS) in use, as it was in the late 1800's. The weir was built across the river to turn water into the headgate of Power Canal. Although water in the river, this view shows the great width of the Kern River. The weir has 60 bays, two with removable bents to control flow. The removable bents slide into slots in the upstream side of the weir and are held in place by the pressure of the water. (City of Bakersfield, Department of Water.)



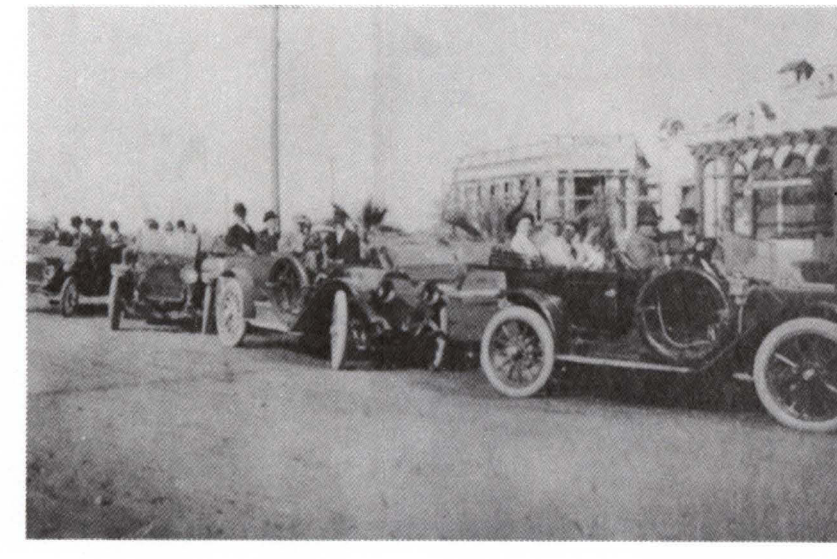
Drop weir on the Power Canal, 3 1/2 miles downstream from the headgate to the Kern River. The drop weir is 30 feet long with the bays of 4- by 6-foot timber. Gate boards on two of the bays are movable and set in slots. The drop weir is used to reduce the grade of the canal so that the flow will not wash out the banks and to turn the water into distributing ditches. (City of Bakersfield, Department of Water.)

Large scale development sales promotions '1900's'

Scenes from the early 1900's show irrigation development of the west side of Central Valley. One of the first successful irrigation systems ever built was in the Patterson area. The project was visited by engineers from all over the world. The surveys and estimates for the job were prepared in 1908, and by 1910 water flowed through the canal. Patterson Irrigated Farms were advertised widely throughout the Midwest and East, and visitors arrived by the thousands.



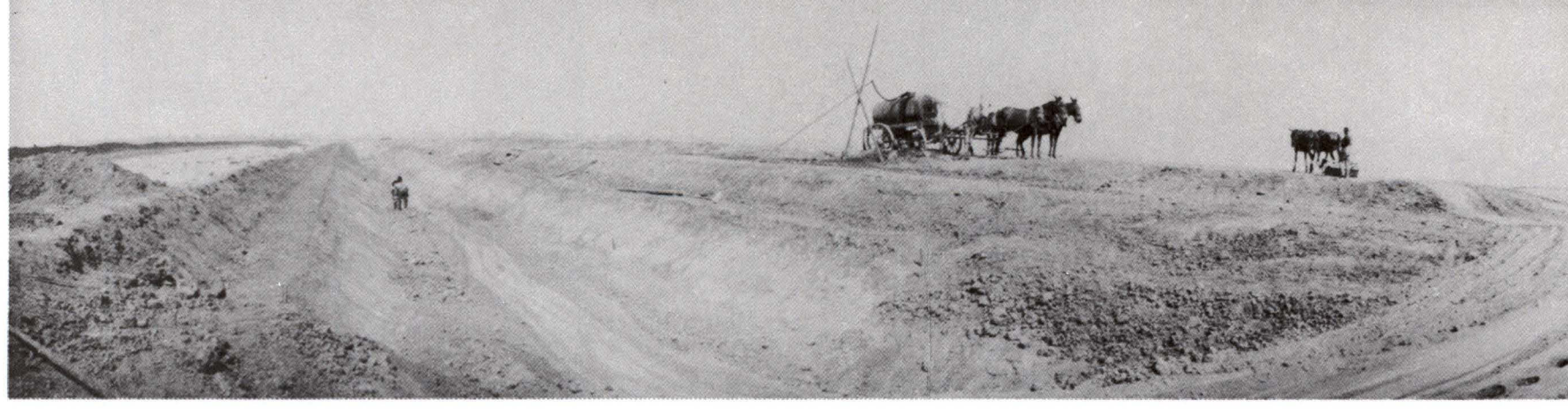
Chauffeur-driven Oldsmobiles conveying prospective buyers to see land that was advertised in eastern newspapers. (Patterson Township Historical Society.)



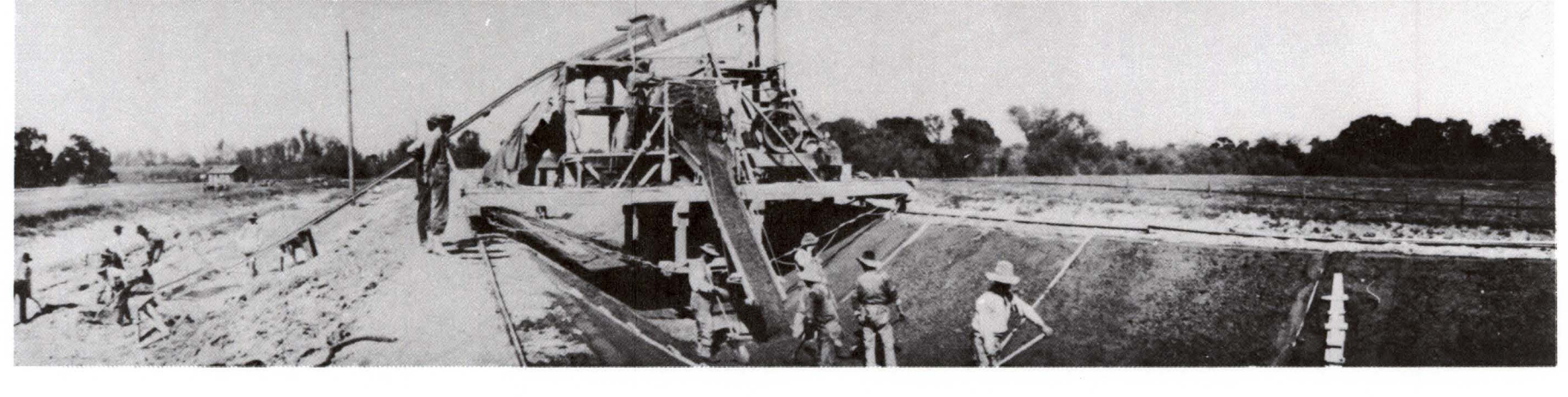
Carnival of prospective buyers at sales headquarters in Patterson. (Patterson Township Historical Society.)



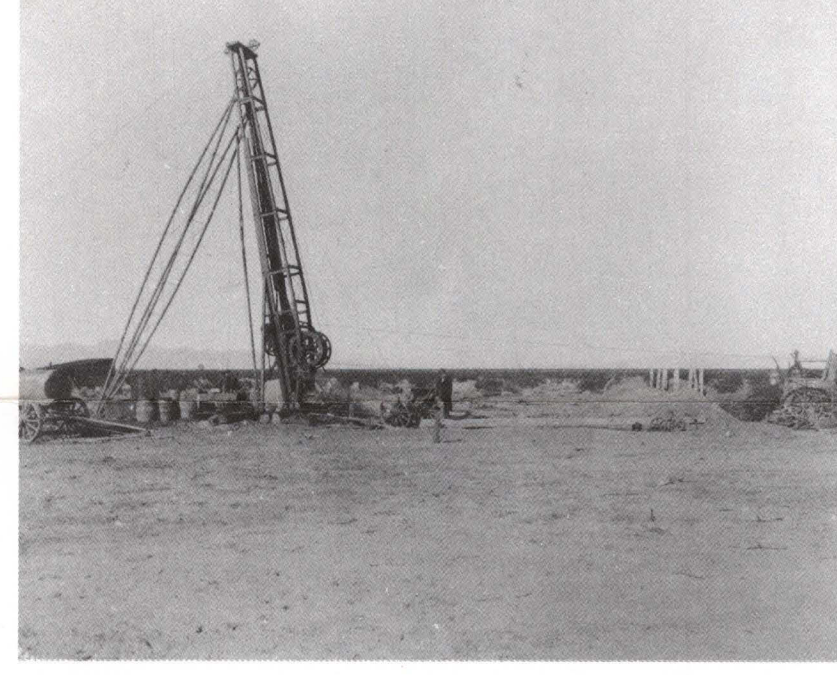
Fresno scrapers and mule teams digging canal. The workers were paid in gold. (Patterson Township Historical Society.)



Canals ready for concrete lining. (Patterson Township Historical Society.)



Equipment used to line canals with cement. (Patterson Township Historical Society.)

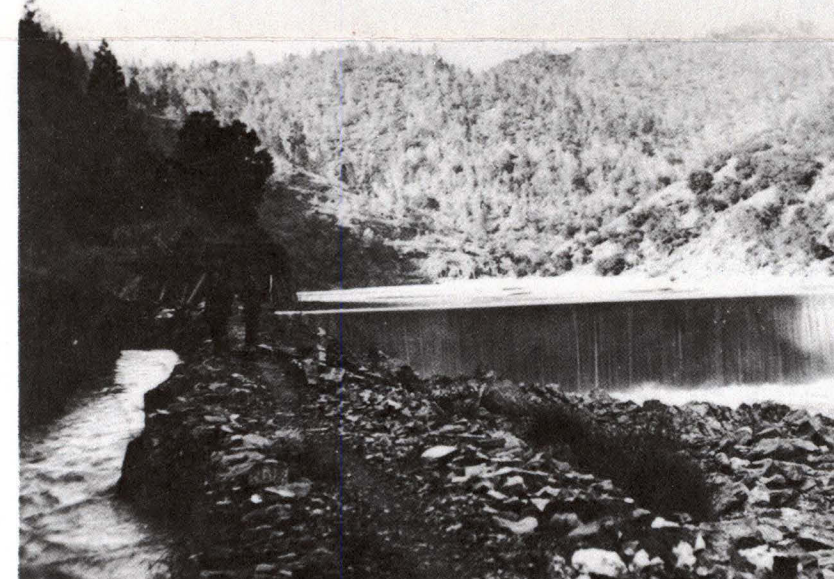


Well drilling rig in the Bakersfield area in the late 1800's. Ground water was little used for irrigation prior to 1898. (Wood and Dale, U.S. Geological Survey, Water-Supply Paper 1656.) (City of Bakersfield, Department of Water.)

Early 1900's dam and ditch system



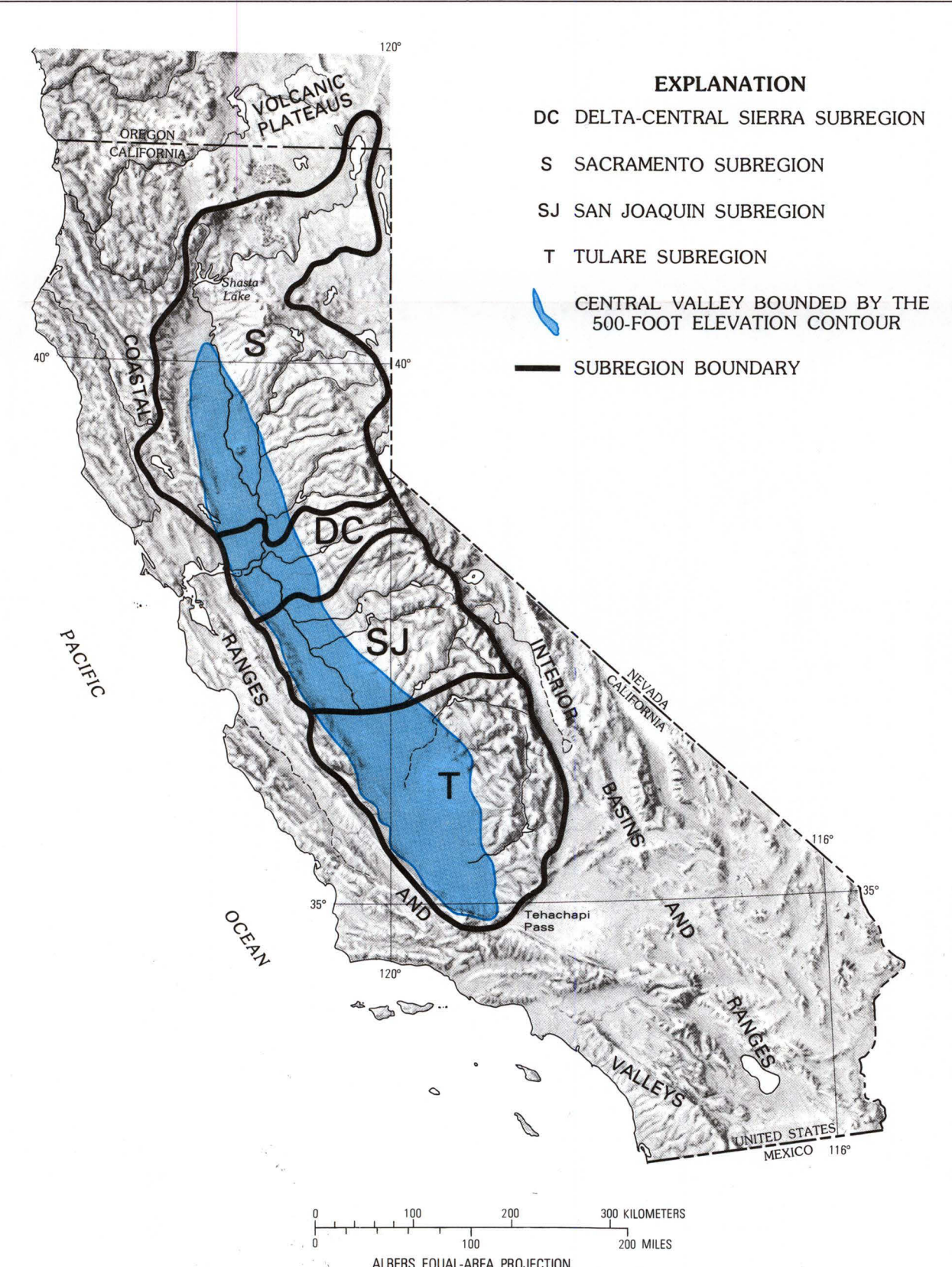
North Fork Dam (no longer in existence), manually built of native rock and concrete in the early 1900's, on a canal adjacent to the main stream. The location was the same as the proposed Auburn damsite. (San Juan Suburban Water District.)



Completed North Fork Dam and manually dug ditch diverting from the reservoir. (San Juan Suburban Water District.)



North Fork ditch (no longer in existence) and the crew that worked on the diversion ditch and dam. Some diversion ditches built by gold miners were later converted to irrigation use. (San Juan Suburban Water District.)



EXPLANATION
DC DELTA-CENTRAL SIERRA SUBREGION
S SACRAMENTO SUBREGION
SJ SAN JOAQUIN SUBREGION
T TULARE SUBREGION
CENTRAL VALLEY BOUNDED BY THE 500-FOOT ELEVATION CONTOUR
SUBREGION BOUNDARY

CIRCA '1885'

EXPLANATION
MAP WAS COMPILED FROM WILLIAM HAMILTON HALL MAPS OF 1885-87; LAND GRIDS AND COUNTIES ARE CURRENT
CANAL EXISTING IN 1885
LAKE EXISTING IN 1885
500-FOOT ELEVATION CONTOUR
SUBREGION BOUNDARY

DEVELOPMENT OF IRRIGATION IN THE CENTRAL VALLEY OF CALIFORNIA

By
Paul Nady and Lori L. Larragueta
1983