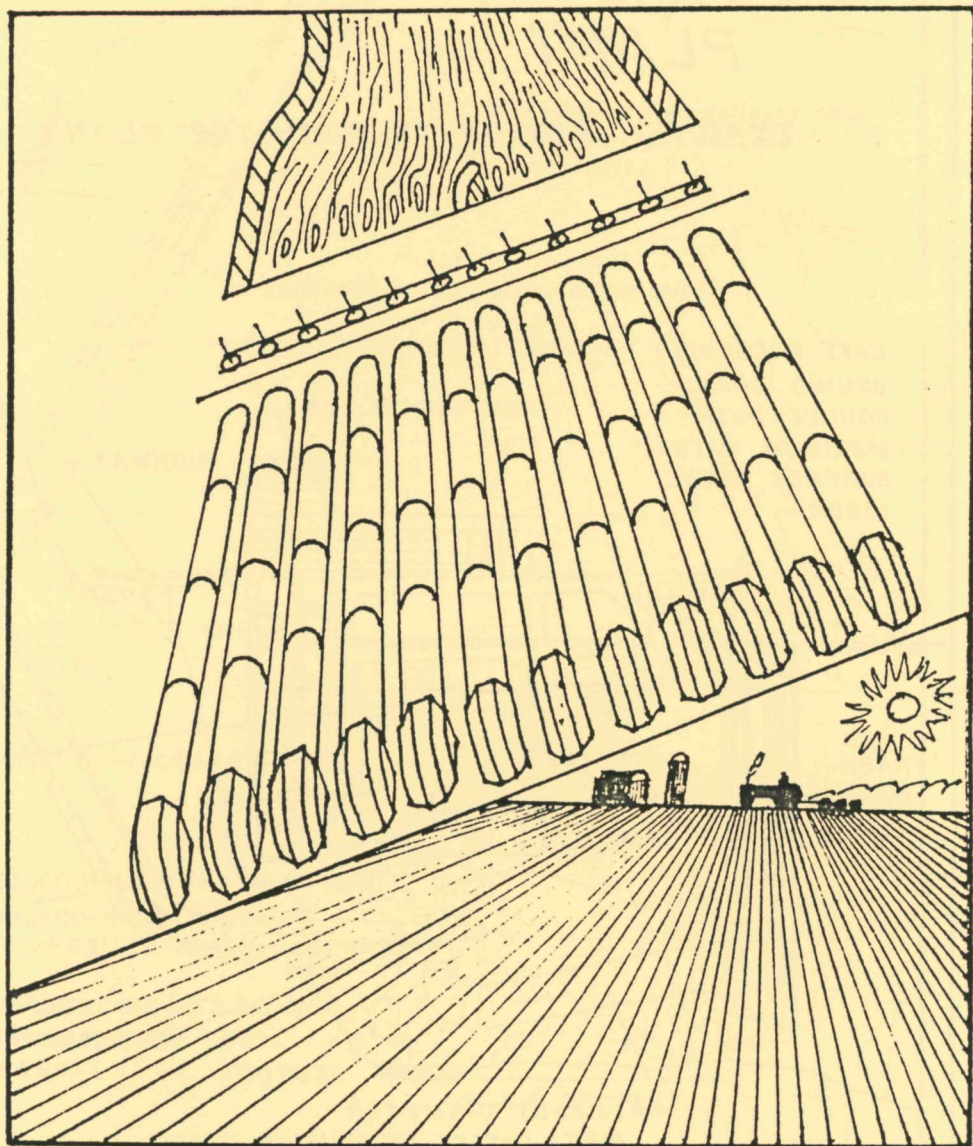
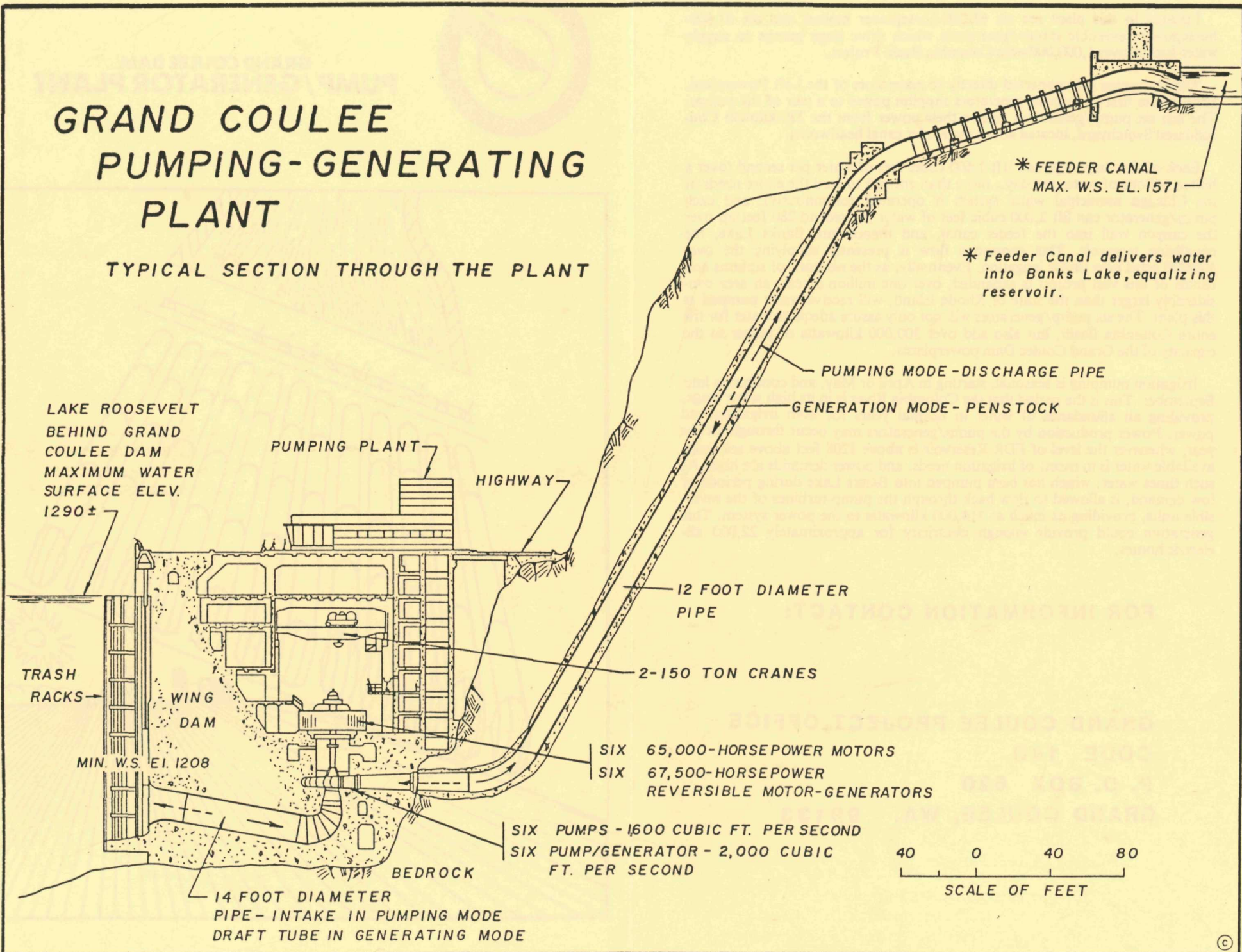


GRAND COULEE DAM PUMP/GENERATOR PLANT



GRAND COULEE PUMPING-GENERATING PLANT

TYPICAL SECTION THROUGH THE PLANT



Located in this plant are six 65,000-horsepower motors and six 67,500-horsepower reversible motor/generators which drive huge pumps to supply water for the over 1,000,000-acre Columbia Basin Project.

The six pumps are connected directly to generators of the Left Powerplant. Each of the first three main generators supplies power to a pair of the pumps. The last six pump/generators receive their power from the 230-kilovolt Consolidated Switchyard, located above the feeder canal headworks.

Each of the six pumps can lift 1,600 cubic feet of water per second (over a billion gallons of water per day...more than enough to feed the entire needs of the Chicago municipal water system if operated continuously), and each pump/generator can lift 2,000 cubic feet of water per second 280 feet up over the canyon wall into the feeder canal, and thence into Banks Lake, the equalizing reservoir. This enormous flow is presently supplying the over 500,000 acres now under irrigation. Eventually, as the network of siphons and canals of this vast project is expanded, over one million acres, an area considerably larger than the state of Rhode Island, will receive water pumped at this plant. The six pump/generators will not only assure adequate water for the entire Columbia Basin, but also add over 300,000 kilowatts of power to the capacity of the Grand Coulee Dam powerplants.

Irrigation pumping is seasonal, starting in April or May, and continuing into September. This is the period that the Columbia River is in its high water stage, providing an abundance of water in normal years for both irrigation and power. Power production by the pump/generators may occur throughout the year, whenever the level of FDR Reservoir is above 1208 feet above sea level, available water is in excess of irrigation needs, and power demands are high. At such times water, which has been pumped into Banks Lake during periods of low demand, is allowed to flow back through the pump-turbines of the reversible units, providing as much as 314,000 kilowatts to the power system. This generation could provide enough electricity for approximately 22,000 all-electric homes.

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