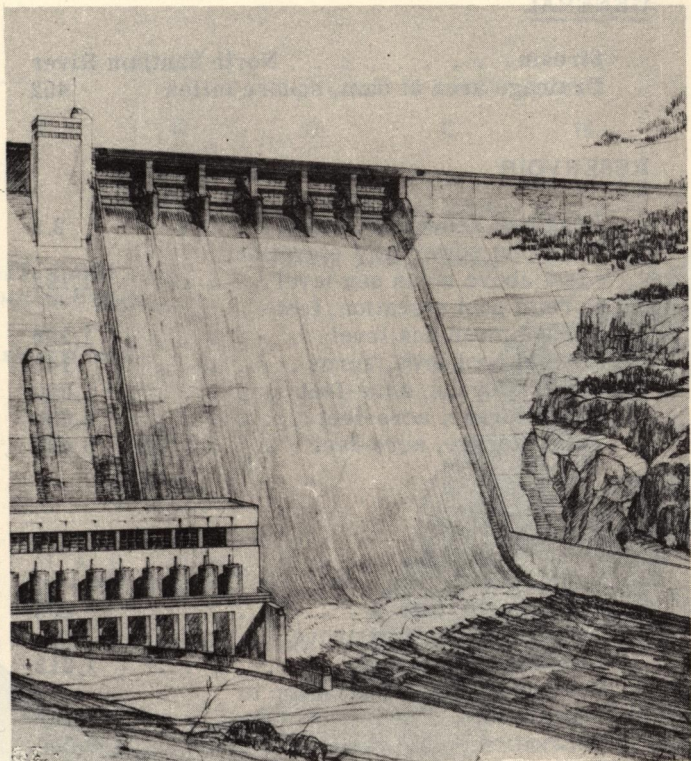
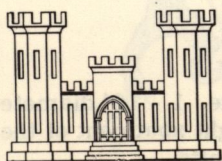


# DETROIT PROJECT

## OREGON

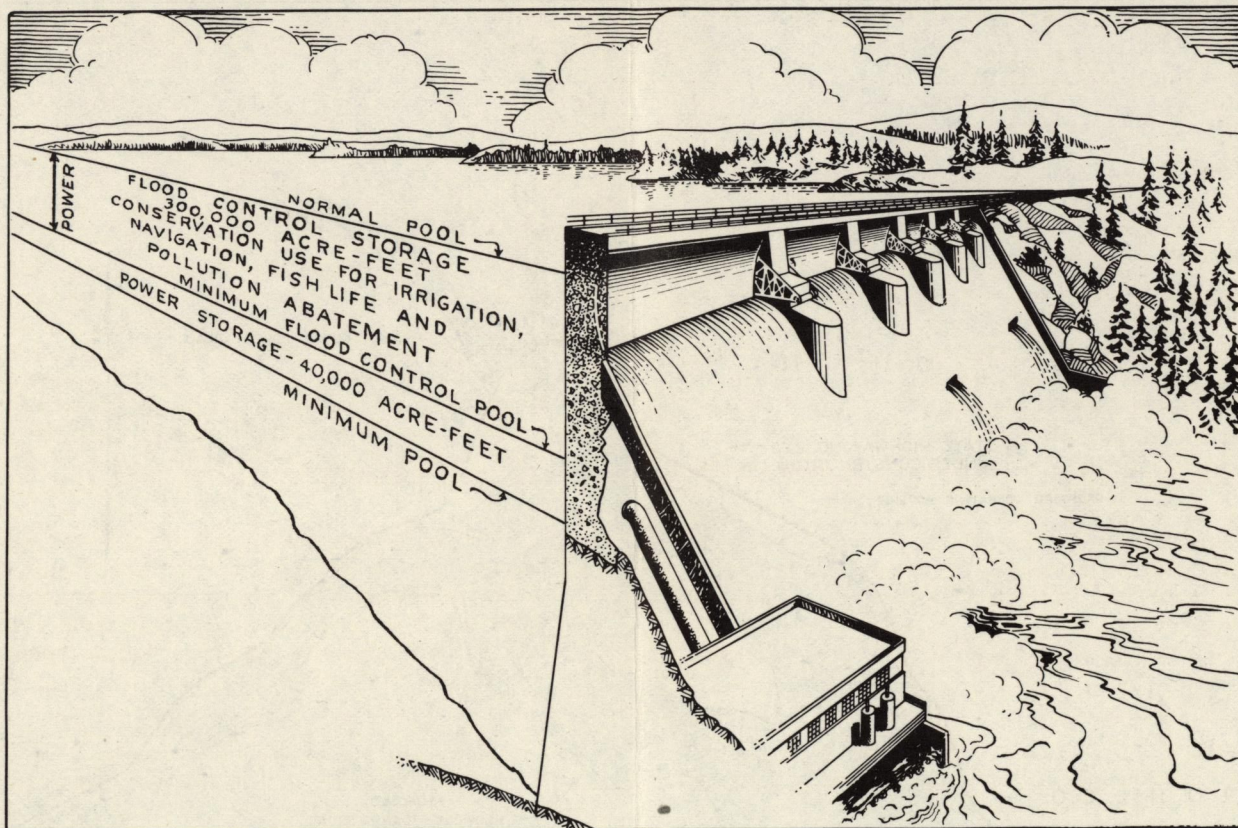


Corps of Engineers, U. S. Army  
Portland District



1949





DETROIT DAM AND RESERVOIR

The Detroit Dam has been planned and will be operated as a multiple purpose reservoir. During the late fall and winter the reservoir will be held at minimum flood control elevation to provide space for storage of excess water during the critical run-off periods, thereby materially reducing flood stages on the Santiam River and aiding in the control of floods on the Willamette River. The water stored during each flood period will be evacuated as rapidly as downstream conditions will permit to provide maximum storage space for future floods. In the late winter and early spring when the danger of severe floods is passed the reservoir will be filled at a uniform rate so that it will normally be full by early May. During the conservation period extending from May until early fall the water will be gradually released, supplementing the normal stream flow and thus benefitting downstream navigation, irrigation, fishlife, and pollution abatement. Water released for these conservation uses can be utilized

ed for production of electric power. During the fall and early winter the stored water not needed for conservation purposes together with the increased flow on the Santiam River will be utilized for power production, thus contributing materially to the dependable power supply available for the region during the critical power production period on the Columbia River. In the late fall the reservoir will be drawn down to minimum flood control elevation for the coming flood season.

Highway relocation work was started in May 1947 and construction of Detroit Dam was initiated in March 1949. The major construction items are: 800,000 cubic yards of excavation, 1,500,000 cubic yards of concrete, 7,000,000 pounds of structural and reinforcing steel, and 15.6 miles of highway relocation. This dam is scheduled for completion during 1953.

## DETROIT DAM AND RESERVOIR

### PROJECT DATA

#### GENERAL

Stream . . . . .	North Santiam River
Average flow, second-feet . . . . .	1,764
Maximum flow, second-feet . . . . .	65,000
Drainage area at dam, square miles . . . . .	438

#### RESERVOIR

Length of reservoir, miles . . . . .	8.5
Minimum power pool elevation, feet above mean sea level . . . . .	1,425
Minimum flood control elevation, feet above mean sea level . . . . .	1,450
Normal pool elevation, feet above mean sea level . . . . .	1,569
Normal pool area, acres . . . . .	3,580
Flood control storage, acre-feet . . . . .	300,000
Power storage, acre-feet . . . . .	40,000
Dead storage, acre-feet . . . . .	115,000
Total storage, acre-feet . . . . .	455,000

#### DAM

Type . . . . .	Concrete Gravity
Total length, feet . . . . .	1,580
Deck elevation, feet above mean sea level . . . . .	1,579
Maximum height, foundation to deck, feet . . . . .	463
Maximum width at base, feet . . . . .	335
Excavation, cubic yards . . . . .	800,000
Concrete, cubic yards . . . . .	1,500,000
Steel, pounds . . . . .	7,000,000
Highway relocation, miles . . . . .	15.6

#### SPILLWAY

Type . . . . .	Gate Controlled, Concrete Ogee
Total length, feet . . . . .	294.5
Control gates . . . . .	6 - 42' x 28' Radial Gates

#### OUTLETS

Type . . . . .	Sluice Conduits In Spillway
Number . . . . .	4
Gates . . . . .	4 - 5'8" x 10'0" Slide Gates

#### POWER PLANT

Hydraulic conduit 2 - 15' diameter penstocks through dam	
Installed capacity (2 units), KW . . . . .	100,000

## GENERAL INFORMATION

The Detroit Project, consisting of Detroit and Big Cliff dams, powerhouses, and reservoirs, is a unit of the plan for development of the water resources of the Willamette Basin in the interest of flood control, power development, irrigation, navigation, pollution abatement, and other multiple uses. These dams were authorized by Congress and will be constructed and operated in conjunction with other dams and reservoirs of the Willamette Project by the Corps of Engineers under the immediate supervision of the District Engineer, Portland District.

Corps of Engineers plans provide for constructing, and for financing the operation and maintenance of Marion Forks Hatchery as restitution for loss of upstream spawning areas resulting from construction of the dams. The hatchery will be operated by the Oregon Fish Commission.

The project promises to become a popular recreation area for sightseeing, boating, swimming, fishing, picnicking, and overnight camping. Proposed development by the Corps of Engineers includes sightseeing facilities in the vicinity of both dams and such basic public use facilities as access roads, parking areas, picnic and camp ground areas, rest stations, and potable water at Detroit Reservoir. Construction of concession facilities may be permitted by local agencies or private interests after the project is completed.

### HIGHWAY DISTANCES TO DETROIT DAM FROM POINTS IN OREGON

Portland . . . . .	100 miles
Salem . . . . .	49 miles
Albany . . . . .	55 miles
Eugene . . . . .	101 miles
Bend . . . . .	86 miles
Klamath Falls . . . . .	232 miles



BIG CLIFF REREGULATING  
DAM AND RESERVOIR

PROJECT DATA

GENERAL

Stream . . . . . North Santiam River  
Drainage area at dam, square miles 452

RESERVOIR

Length of reservoir, miles . . . . . 2.8  
Minimum power pool elevation,  
feet above mean sea level . . . . . 1,193  
Normal pool elevation, feet  
above mean sea level . . . . . 1,206  
Normal pool area, acres . . . . . 141  
Power storage, acre-feet . . . . . 1,800  
Dead storage, acre-feet . . . . . 4,650  
Total storage, acre-feet . . . . . 6,450

DAM

Type . . . . . Concrete Gravity  
Total length, feet . . . . . 295  
Deck elevation, feet above  
mean sea level . . . . . 1,212  
Maximum height, foundation to  
deck, feet . . . . . 182  
Excavation, cubic yards . . . . . 160,000  
Concrete, cubic yards . . . . . 80,000  
Steel, pounds . . . . . 1,500,000

SPILLWAY

Type . . . . . Gate Controlled, Concrete Ogee  
Total length, feet . . . . . 192  
Control gates . . . . 4 - 42' x 39' Radial Gates

POWER PLANT

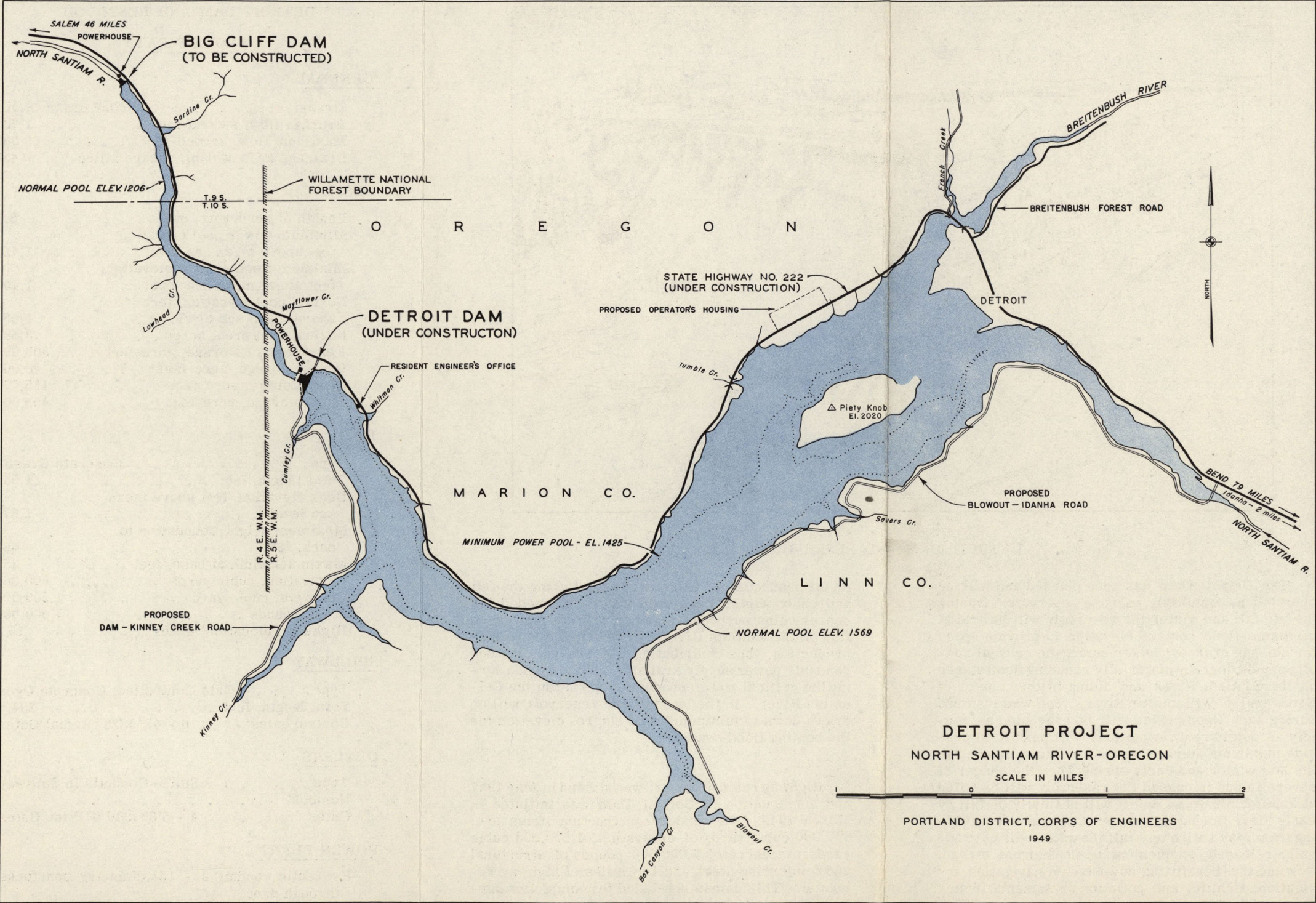
Power intake, 1 - 16' diameter steel penstock  
through right abutment of the dam  
Number of units . . . . . 1  
Installed capacity, kilowatts . . . . . 18,000



VICINITY MAP

BIG CLIFF REREGULATING  
DAM AND RESERVOIR

Big Cliff Dam, a unit of the Detroit Project, will be constructed on the North Santiam River about three miles downstream from Detroit Dam. Its primary purpose will be to reregulate the fluctuating discharges effected by the Detroit power plant. In addition, the water will be reused to operate a power plant with an installed capacity of approximately 18,000 kilowatts. Estimated major construction items include 160,000 cubic yards of excavation, 80,000 cubic yards of concrete, and 1,500,000 pounds of structural and reinforcing steel. Big Cliff Dam is scheduled for completion during 1953.



DETROIT PROJECT  
NORTH SANTIAM RIVER-OREGON

SCALE IN MILES

PORTLAND DISTRICT, CORPS OF ENGINEERS  
1949