

CATALOG
OF HANFORD BUILDINGS
AND FACILITIES
100 Areas

GEH--26434-100

DE89 014969

A Report by the AEC-GE Study Group for the
Economic Development of Richland

April 1964

RICHLAND, WASHINGTON

MASTER *ℓ*

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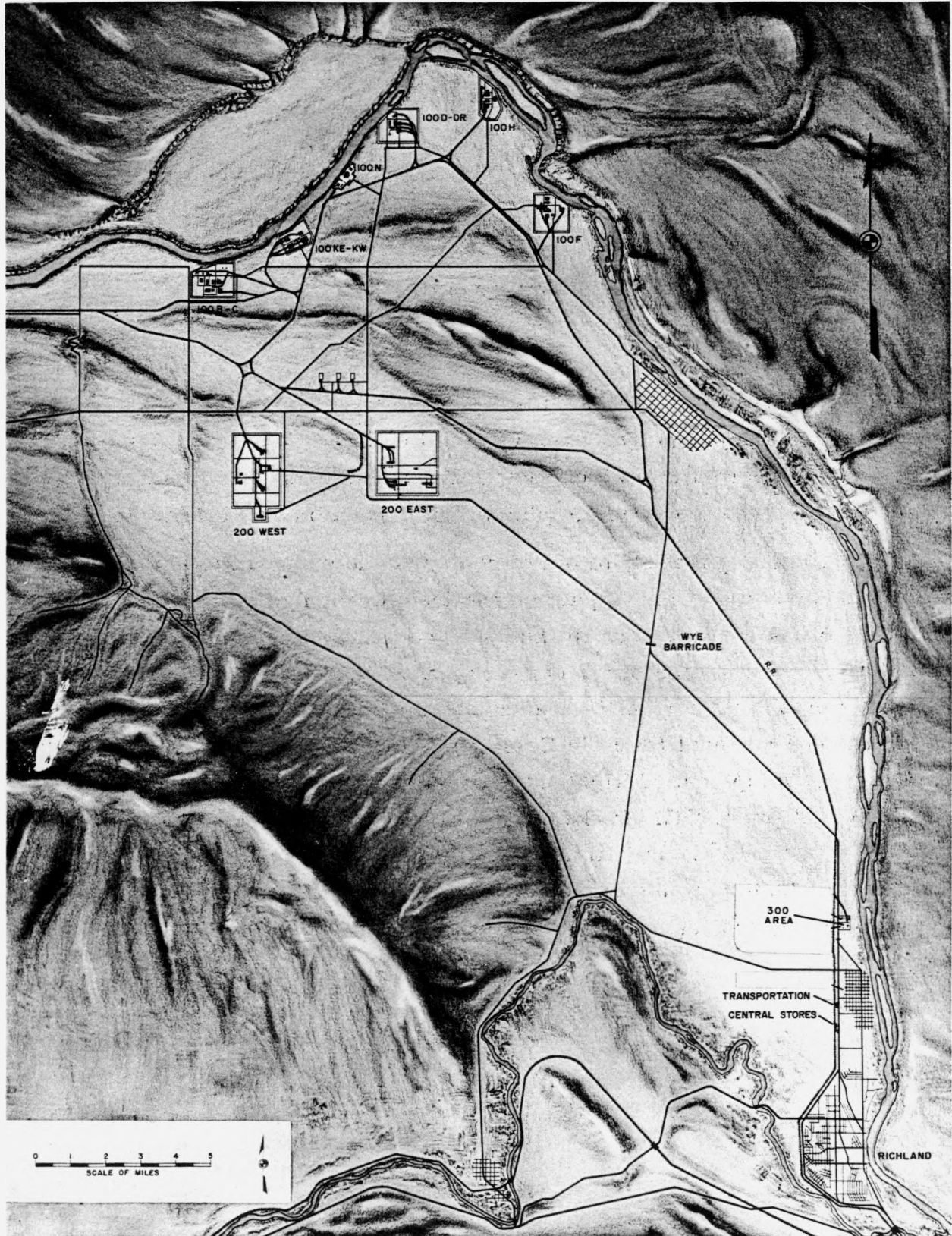
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FOREWORD

For twenty years Hanford has been the chief producer of plutonium in the United States and in this capacity has made a major contribution to the security of this country. However, in the past few years it has become increasingly apparent that stockpile requirements of this material were declining and that a reduction in plutonium production was inevitable.

Recognizing that shutdown of reactors and supporting facilities could have an unfavorable impact on the local economy, the Atomic Energy Commission has undertaken, in the past two years, a number of steps to stimulate diversification of the economic base of the region. One of the steps was established by AEC Headquarters of the "Atomic Energy Commission - General Electric Company (AEC-GE) Study Group for the Economic Development of Richland," consisting of P. G. Holsted, AEC, and F. W. Albaugh, GE. In the course of its work, the Study Group concluded that a concise, but relatively comprehensive, description of the facilities at Hanford would be useful for use in diversification activities and, therefore, arranged for the compilation and publication of this document.



Hanford Complex

AEC-GE RICHLAND, WASH.

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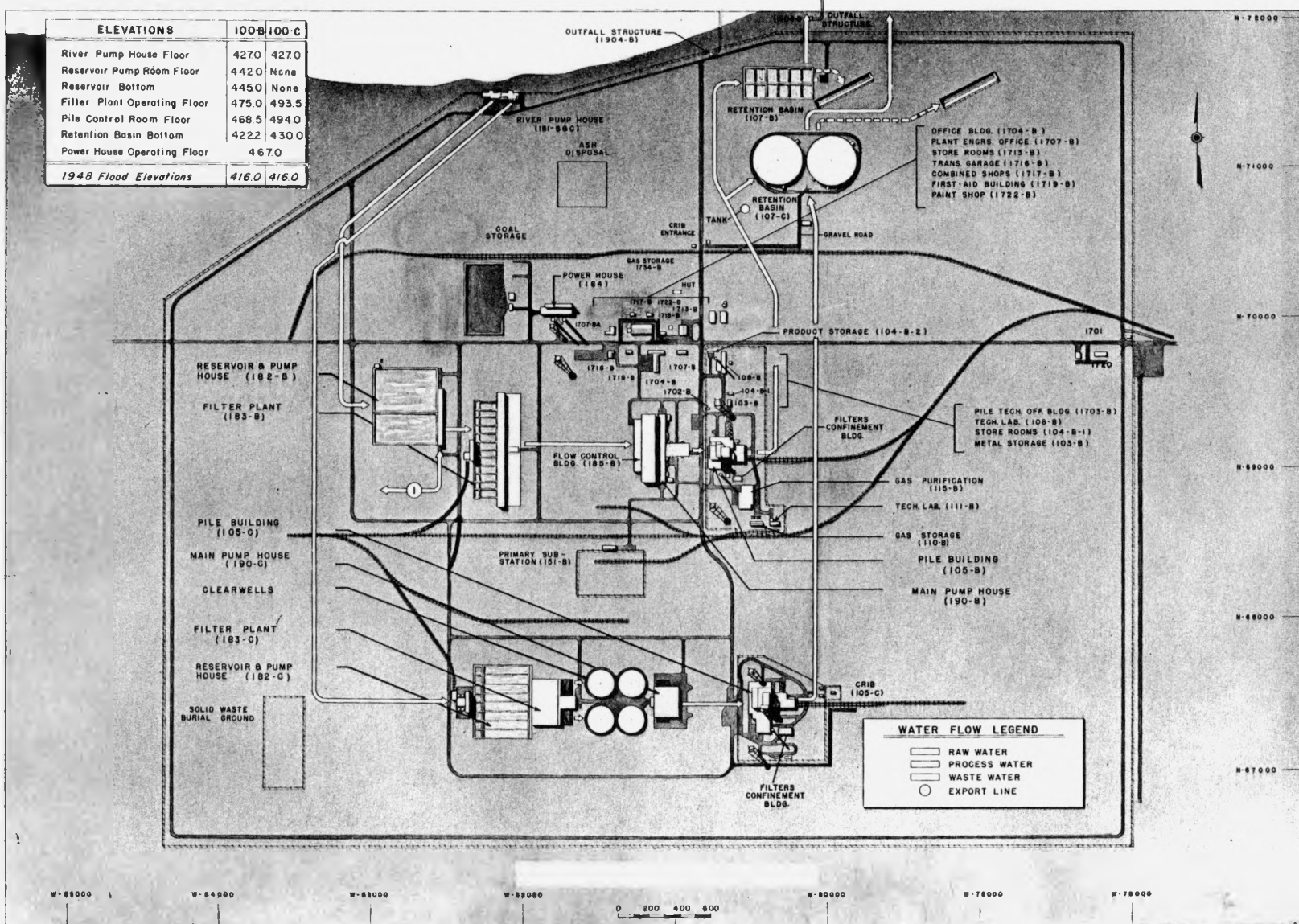
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HANFORD FACILITIES - 100 Areas

The facilities, primarily buildings, are listed according to number but are also indexed alphabetically under name. A brief description is given which includes dimensions, essential and special features, and appurtenances. If utilities and services in the building are not described or qualified it should be assumed that they are typical of those expected for the type of building described. Simple line drawings and pictures are used to exemplify typical facilities and an indication of current usage is included for most of the buildings.

This compilation is published in four parts; covering, respectively, the 100, 200, 300, and "other" Areas. The pages have been punched so that after removal of the binding they may be used in a loose-leaf binder.

ARCADE RICHLAND, WASH.



100-B and 100-C AREAS

1.1

100 Area
103-B Building

NUMBER: 103-B

NAME: Fresh Metal Storage

PURPOSE: Pallet storage of fuel elements before use in the reactor

DIMENSIONS: 53 ft x 27 ft x 14 ft 6 in.; 1431 ft² total area

DESCRIPTION: This one story building is a reinforced concrete and concrete block structure having a concrete foundation and floor, concrete block walls, and concrete roof with built-up tar and gravel surface. At one end of the building there is a 5 ft reinforced concrete, floor-level loading platform.

STATUS: In service

REFERENCE DRAWING: W-69375

NUMBER: 105-B Building

NAME: Reactor Building

PURPOSE: Provides housing for nuclear reactor and directly associated equipment used in reactor operation.

DIMENSIONS: 234 x 181 x 120 ft; 112 x 75 x 15 ft; 53,750 ft² total area

Offices: 1530 ft ²	Shops: 165 ft ²
Work Area: 30,750 ft ²	Storage: 3910 ft ²
Laboratory: 1490 ft ²	Common: 15,910 ft ²

DESCRIPTION: The 105-B Reactor Building is a light, nonairtight industrial structure of reinforced concrete in the lower portions and of concrete block in the upper. Roof construction is of reinforced concrete or precast concrete roof tile depending on the specific roof area in question.

An extensive ventilation system provides ventilation for personnel comfort and, through controlled pressure zones, air flow for control of the potential spread of radioactive contamination.

APPURTENANCES: 200 ft reinforced concrete stack 16 ft 7 in. OD at base. Two high tanks each having 300,000 gal water capacity. A railroad spur enters the building on the east side providing access of railroad cask cars to the irradiated fuel transfer facilities.

STATUS: In use

REFERENCE DRAWINGS: W-70833, W-70829

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1.3

100 Area
106-B Building

NUMBER: 106-B

NAME: Contaminated Equipment Storage

DIMENSIONS: 50 x 19 x 12 ft high; 950 ft² total area

DESCRIPTION: A galvanized iron Quonset hut with plywood floor

STATUS: In use

NUMBER: 107-B

NAME: Effluent Water Retention Basin

PURPOSE: Provide transient retention of reactor cooling water before its return to the Columbia River.

DIMENSIONS: 230 x 467 ft; capacity, 12 million gal. Gate house area
650 ft²

DESCRIPTION: The retention basin is a reinforced concrete structure divided into two sections with a central flume running the length of the basin. Sluice gates permit use of each section alternately. Small wood frame structures at inlet and outlet house instruments and controls for gates, valves, etc.

APPURTENANCES: Outfall system to river. Cross tie to 107-C.

STATUS: 107-B Basin is not in operation due to excessive leakage.

REFERENCE DRAWING: W-69853

1.5

100 Area
108-B Building

NUMBER: 108-B

NAME: Laboratory Building

PURPOSE: Originally built to provide laboratory support for reactor operations.

DIMENSIONS: 132.5 x 32.5 x 41 ft high

Offices: 180 ft²

Storage: 725 ft²

Work Area: 12,870 ft²

Common: 2550 ft²

Laboratory: 1815 ft²

DESCRIPTION: The 108-B Building contains three stories and a basement. Foundations and floors are of reinforced concrete. Walls are steel frame and concrete block construction. Roof is precast concrete tile with built-up tar and gravel surface.

The building was once used for recovering tritium from irradiated lithium-aluminum target elements and still contains some process equipment. The upper three floors are extensively contaminated to low radiation levels and would require decontamination to make it suitable for most uses. Structurally the 108-B Building is in good condition. It is equipped with general services, but at the present time power wiring, heating, and ventilation equipment are disconnected and out of service. The first floor has a 1 ton capacity traveling hoist on about 30 ft of curved overhead monorail.

STATUS: Part of the first floor is in use as an aluminum tube examination facility and is operated under controlled radiation conditions.

REFERENCE DRAWING: W-74382

1.6

100-Area
111-B Building

NUMBER: 111-B

NAME: Decontamination Station

DIMENSIONS: 80 x 61 x 14.5 ft high

Office: 200 ft²

Storage: 2800 ft²

Work Area: 1880 ft²

Total Area: 4880 ft²

DESCRIPTION: Wooden frame structure on concrete foundation. Concrete floor, asbestos shake siding, wood roof with tar and gravel surfacing.

STATUS: On stand-by

REFERENCE DRAWING: W-75278

NUMBER: 115-B

NAME: Gas Recirculation

PURPOSE: Houses gas circulating pumps, and other equipment related to reactor gas coolant system.

DIMENSIONS: 168 x 98 x 33.5 ft; 14,520 ft² total area
Work Area: 14,300 ft²
Storage: 120 ft²
Common: 100 ft²

DESCRIPTION: This one story building has a reinforced concrete foundation and frame with exterior walls of concrete block. The roof is of reinforced concrete with built-up tar and gravel surface. It contains circulating gas blowers, silica gel dryers, filters, heat exchangers, and related instrumentation and piping.

APPURTENANCES: Reinforced pipe tunnel connecting with 105 Building. Instrument cubicles abutting building. Adjacent gas storage area consisting of a number of 24 in. OD x 80 ft long high pressure tanks. The gas storage facility is served by a railroad spur and has equipment for transferring gas at high pressure.

STATUS: In use; serves needs of both B- and C-Reactors.

REFERENCE DRAWING: W-74670

NUMBER: 117-B

NAME: Exhaust Air Filter Building

PURPOSE: Filters ventilation air from the confinement zone of the 105-B Reactor Building before its discharge to atmosphere through the 105-B stack.

DIMENSIONS: 59 x 39 x 35 ft high

DESCRIPTION: A reinforced concrete structure almost completely below grade. The 117-B Building consists of two identical filter cells (capable of individual operation) with operating gallery between. Each filter cell contains two filter banks in series: the first, of the "absolute" type capable of removing 99.95% of 0.3 μ particles; the second, of activated charcoal.

STATUS: In service

REFERENCE DRAWINGS: H-1-19835, H-1-19836

NUMBER: 181-B

NAME: River Pump House

PURPOSE: Pump raw river water to water treatment plants or area reservoir.

DIMENSIONS: 245 x 50 x 20 ft

Offices: 120 ft²

Storage: 540 ft²

Work Area: 11,950 ft²

Common: 120 ft²

DESCRIPTION: This building is of reinforced concrete and concrete block construction with slab roof and built-up felt, tar, and gravel surface. Barometric condensers are mounted on steel frames over the roof. The building contains a number of electrically driven 10,000 gal/min, vertical, deep well water pumps; some equipped with steam turbine drives for emergency use.

APPURTENANCES: Track mounted, wood frame gantry with 10-ton hoists runs entire length of roof and has access to building pumps through access openings in roof. Dredged channels from pump house to main river channel. Transformer station for conversion of 13.8 kv power to 2300 v.

STATUS: In use. Serves B- and C-Reactors and provides export water.

REFERENCE DRAWING: P5001

NUMBER: 182-B

NAME: Reservoir and Pump House

PURPOSE: Provide reserve water for reactor cooling and raw export water for 100-200 Area intertie system.

DIMENSIONS: Pump House, 373 x 38 x 22.5 ft deep.
Reservoir, 432 x 309 x 18 ft deep,
25 million gal capacity in two sections.

DESCRIPTION: The reservoir is of reinforced concrete and the pump house of reinforced concrete and concrete block. The latter building is below ground level. The pump house contains a number of turbine and motor driven pumps used for raw water, condenser water and filter supply systems. These pumps range up to 6000 gal/min in capacity.

APPURTENANCES: Valve pit. Surge suppressors on export water headers.

REFERENCE DRAWING: W-72090

(See Figure B-1, Page 1.178.)

NUMBER: 183-B

NAME: Filter Plant

PURPOSE: Houses water treatment and filtering facilities and provides reservoir capacity for treated water.

DIMENSIONS:	<u>Size, ft</u>	<u>Area, ft²</u>	<u>Floor Space, ft²</u>
Head House	182 x 32	5,820	17,470
Filter Bldg	745 x 32	23,840	32,780
Pump Room	130 x 32	4,160	5,900
Office: 400 ft ²		Storage: 5850 ft ²	
Work Area: 48,500 ft ²		Common: 800 ft ²	
Laboratory: 600 ft ²			

DESCRIPTION: The filter plant consists of a head house and chemical building, flocculation and subsidence basins, filter building, and clearwell storage with pump room.

The head house and chemical building is a three-story steel frame, reinforced concrete and concrete block structure that contains facilities for the preparation and/or storage of alum, sulfuric acid, and chlorine and metering equipment for introducing them into the raw water.

The flocculation and subsidence basins consist of a number of open-air reinforced concrete basins with associated mixing chambers, paddle wheel agitators, and interconnecting flumes.

The 183-B filter building is a reinforced concrete and concrete block building that houses the filter beds and controls. The filters are gravity flow with Wheeler bottoms.

Built in two halves with a gullet between, the filter consists of graded gravel, sand, and graded anthracite coal. Backwashing is accomplished through use of purified water from the clearwells. Discharge of the backwash water is through the gullet to a sewer. Total filter area is 13,800 ft².

The clearwells are covered, reinforced concrete and have a capacity of 10 million gal.

The pump room is a reinforced concrete structure largely below grade. Equipment includes transfer pumps for the primary reactor cooling water, backwash pumps, high tank pumps, and pumps for power house water, fire, sanitary water, and emergency filtered water. Electric power reduced from 13.8 kv to 2300 v enters the pump house from transformer stations located at the building.

1. 12

100 Area
183-B Building

APPURTENANCES: Cross-tie to 183-C. Railroad spur with covered loading area. Tanks for storage of concentrated sulfuric acid and other chemicals.

STATUS: In use

REFERENCE DRAWING: H-1-5227

(See Figure A-4, Page 1.177, and Figure B-2, Page 1.179.)

NUMBER: 184-B

NAME: Power house

PURPOSE: Provide steam and emergency electric power.

DIMENSIONS: 274 x 76 x 80 ft; 25 x 40 x 80 ft plus conveyor

Offices: 442 ft²

Work Area: 54,954 ft²

Common: 1550 ft²

DESCRIPTION: This building is of steel frame and concrete block construction. Roof is of precast concrete with built-up gravel surface. The facility contains four coal fired boilers, each rated at 100,000 lb steam per hour at 225 psig and 460 F. Each boiler has a 290-ton capacity coal bunker which feeds by gravity into a stoker-feeder hopper serving five steam turbine driven stokers. Draft for each boiler is provided by 45,000 ft³/min turbine driven blowers.

Furnace gas discharge is through two 300 ft stacks.

Feedwater is supplied from the 183-B Building by two 1000 gal/min pumps, one electrically and one steam driven.

Backup feedwater is supplied by three emergency systems.

Electrical power to the power house comes in at 13.8 kv and is transformed to 2300 v at the power house.

APPURTENANCES: Railroad spur. Coal handling conveyor system; machinery housed in 5050 ft² steel and transite building. Sump and wet ash disposal system.

STATUS: In use

REFERENCE DRAWING: W-70822

NUMBER: 185-B

NAME: Water Treatment Plant

PURPOSE: Originally intended as a deaerating plant but never used for this purpose.

DIMENSIONS: 307 x 48 x 60 ft

Work Area: 10,880 ft² Storage: 4170 ft²

Laboratory: 970 ft² Common: 840 ft²

Shops: 1750 ft²

DESCRIPTION: Steel and concrete block structure, reinforced concrete foundation, precast concrete slab roof with built-up tar and gravel surfacing. The building adjoins the 190-B Building and shares a common wall with it. The original mounting pedestals for the deaerators have been removed so that a large expanse of flat area exists. Building services are limited.

STATUS: The 185-B Building is partially in service, housing a water laboratory, instrument shop, and engineering test facility. It also serves as a maintenance work and storage area.

REFERENCE DRAWING: W-71742

NUMBER: 190-B

NAME: Main Pump House and Annex

PURPOSE: Provide primary coolant water for B-Reactor

DIMENSIONS: 200 x 80 ft; 456 x 184 ft

190-B Building: 90,850 ft²; Annex: 16,000 ft²

Offices: 1354 ft²

Work Area: 99,700 ft²

Shops: 640 ft²

Common: 5160 ft²

DESCRIPTION: This building is a one-story reinforced concrete structure with concrete foundation, steel frame, concrete block superstructure and precast concrete roof covered with tar and gravel surfacing. The building is parallel and contiguous with the 185-B Building with which it shares a common wall. The Annex is structural steel corrugated asbestos, and cement construction with a roof of light weight aggregate concrete surfaced with built-up tar-gravel roofing. The 190-B Building contains four large steel water storage tanks capable of storing 7 million gal of purified water and a number of electrically driven 10,000 gal/min pumps used for reactor cooling.

STATUS: In service

REFERENCE DRAWING: W-71743

1.16

100 Area
1701-B Building

NUMBER: 1701-B

NAME: Gate House

PURPOSE: Serves as area badge house and patrol headquarters

DIMENSIONS: 41 x 22 x 23 ft high; 943 ft² total area

Work Area: 700 ft²

Laboratory: 275 ft²

Common: 420 ft²

DESCRIPTION: A two-story frame structure, concrete foundation and first floor, wood second floor, shake siding, and flat tar-gravel surfaced roof. Access to second floor by enclosed stairway.

STATUS: In service

REFERENCE DRAWING: H-7-1001

1. 17

100 Area
1702-B Building

NUMBER: 1702-B

NAME: 105 Area Badge House

PURPOSE: Provides entrance to exclusion area

DIMENSIONS: 20 x 20 x 12 ft high; 400 ft² total area

DESCRIPTION: A one-story wooden frame structure on a concrete floor and foundation. Asbestos shake siding, gable wooden roof covered with roll-roofing.

STATUS: In service

REFERENCE DRAWING: H-1-1506

NUMBER: 1704-B

NAME: Office Building

PURPOSE: Provide offices for area administrative and technical personnel

DIMENSIONS: 147 x 116 x 26 ft high

Offices: 5100 ft²

Laboratory: 260 ft²

Common: 2690 ft²

DESCRIPTION: A one-story "T" shaped wooden frame structure built on concrete block foundation or concrete footing. Wooden floor, asbestos shake siding, and gable and hipped roof covered with composition shingles. The building is air conditioned and steam heated from the central steam plant.

STATUS: In service.

REFERENCE DRAWING: H-1-1576

NUMBER: 1707-B

NAME: Change House

PURPOSE: Originally used as a change house, this building now provides office facilities.

DIMENSIONS: 30 x 66.5 x 16 ft high
Offices: 1160 ft²
Laboratory: 200 ft²
Storage: 100 ft²
Common: 520 ft²

DESCRIPTION: A one-story frame structure on a concrete foundation with concrete floor, asbestos shake siding, and flat wooden roof with built-up tar and gravel surfacing. The building is air conditioned and steam heated from the central steam plant.

STATUS: In service.

REFERENCE DRAWING: W-69130

1.20:

100 Area
1707A-B Building

NUMBER: 1707A-B

NAME: Maintenance Changehouse

PURPOSE: Provides locker, shower facilities, and lunchroom

DIMENSIONS: 30 x 66.5 x 16 ft high; 1980 ft² total area

DESCRIPTION: A one-story frame structure on a concrete foundation with concrete floor, asbestos shake siding, and flat wooden roof with built-up tar and gravel surfacing. The building is air conditioned and steam heated,

STATUS: In service.

REFERENCE DRAWING: AEC-1A-1291

1.21

100 Area
1709-B Building

NUMBER: 1709-B

NAME: Fire Headquarters

PURPOSE: Now used for office space

DIMENSIONS: 48 x 40 x 12 ft high

Office: 800 ft²

Laboratory: 880 ft²

Storage: 240 ft²

DESCRIPTION: Single story frame structure on a concrete foundation, concrete floor, asbestos shake siding, flat wooden roof with built-up tar and gravel surfacing.

STATUS: Not in service at the present time.

REFERENCE DRAWING: W-72922

1.22

100 Area
1713-B Building

NUMBER: 1713-B

NAME: Store Room and Warehouse

PURPOSE: Now provides technical office and laboratory space

DIMENSIONS: 77 x 54 x 16.5 ft

Office: 520 ft²

Laboratory: 3100 ft²

Common: 530 ft²

DESCRIPTION: Single story frame structure on concrete foundation with concrete floor, asbestos shake siding, and flat wooden roof with built-up tar and gravel surfacing. Laboratories are outfitted for instrument testing and calibration.

STATUS: In service.

REFERENCE DRAWING: W-69376

1.23

100 Area
1715-B Building

NUMBER: 1715-B

NAME: Oil and Paint Storage

PURPOSE: Storage

DIMENSIONS: 42 x 14 x 18 ft high

DESCRIPTION: Single story frame structure on concrete foundation with concrete floor, asbestos shake siding, and flat wood roof with built-up tar and gravel surfacing.

STATUS: In service.

REFERENCE DRAWING: W-70320

NUMBER: 1716-B

NAME: Automotive Repair

PURPOSE: Provide garage and office facilities

DIMENSIONS: 53.5 x 40 x 18 ft high (overall)

Office: 100 ft²

Work Area: 1560 ft²

Storage: 100 ft²

DESCRIPTION: Single-story frame structure on concrete foundation with concrete floor, asbestos shake siding, and flat wooden roof with built-up tar and gravel roof. The building is equipped for service station function and light maintenance.

STATUS: In service.

REFERENCE DRAWING: W-71300

1.25

100 Area
1717-B Building

NUMBER: 1717-B

NAME: Area Maintenance Shops

PURPOSE: Houses shops which provide maintenance service for production operations and area facilities.

DIMENSIONS: 150 x 80 x 25 ft high

Office: 2930 ft²

Storage: : 1270 ft²

Shops: 7920 ft²

Common: 380 ft²

DESCRIPTION: A single-story wooden frame structure with asbestos siding, concrete foundation and floor, and flat wooden roof with built-up tar and gravel surface. The 1717-B Building houses carpenter, millwright, welding, and painting shops. (Machine shop and more extensive facilities are maintained at 1717-H.) The building has a low capacity hoist on a curved monorail.

STATUS: In service.

REFERENCE DRAWING: W-71670

NUMBER: 1719-B

NAME: First Aid

PURPOSE: Provides First Aid facilities for area.

DIMENSIONS: 32 x 25.5 x 19.5 ft

Office: 100 ft²

Work Area: 480 ft²

Common: 250 ft²

DESCRIPTION: Single-story frame structure on concrete foundation with concrete floor, asbestos shake siding, and wooden gable roof with composition shingles. This facility contains a first aid room, examination room, laboratory, ward, office, and sanitary facilities.

STATUS: In service.

REFERENCE DRAWING: W-71382

NUMBER: 1720-B

NAME: Patrol Headquarters

PURPOSE: Now serves as office facility.

DIMENSIONS: 79 x 32 x 15 ft high

Office: 250 ft²

Storage: 125 ft²

Work Area: 700 ft²

Common: 1075 ft²

DESCRIPTION: Single-story frame structure on concrete foundation with concrete floor, asbestos shake siding, and flat wooden roof with built-up tar and gravel surface.

STATUS: Vacant

REFERENCE DRAWING: W-69874

1.28

100 Area
1722-B Building

NUMBER: 1722-B

NAME: Paint Shop and Riggers Loft

DIMENSIONS: 40 x 30 x 15 ft high

DESCRIPTION: Single-story frame structure on concrete foundation with concrete floor, asbestos shake siding, and flat wooden roof with built-up felt and gravel surface. A concrete block wall divides the building into two equal-sized rooms.

STATUS: In service.

REFERENCE DRAWING: W-69835

1.29

100 Area
1736-B Building

NUMBER: 1736-B

NAME: Storage Building

PURPOSE: Stores maintenance tools and equipment

DIMENSIONS: 20 x 40 ft

DESCRIPTION: Sheetmetal Butler building with plywood floor

STATUS: In service.

NUMBER: 105-C

NAME: Reactor Building

DIMENSIONS: 346 x 150 x 120 ft; 150 x 90 x 20 ft

Offices: 3537 ft² Shop: 1170 ft²

Work Area: 40,710 ft² Storage: 4658 ft²

Laboratory: 4490 ft² Common: 17,080 ft²

DESCRIPTION: Similar to 105-B, except for larger building size and minor variations in layout.

STATUS: In use.

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1. 31

100 Area
107-C Building

NUMBER: 107-C

NAME: Effluent Water Retention Basin

DESCRIPTION: Similar to 107-B except retention basin consists of two
330 ft diam x 16 ft high baffled reinforced concrete tanks.
System is cross tied to 107-B and handles reactor effluent
from both B- and C-Reactors.

STATUS: In use.

1.32

100 Area
117-C Building

NUMBER: 117-C

NAME: Exhaust Air Filter Building

DESCRIPTION: Identical with 117-B

STATUS: In use.

1.33

100 Area
183-C Building

NUMBER: 183-C

NAME: Filter Plant

DIMENSIONS:

	<u>Size, ft</u>	<u>Area, ft²</u>	<u>Floor Space, ft²</u>
Head House	144 x 80	1,520	15,660
Filter Bldg	316 x 288	91,000	68,010
Office: 230 ft ²		Storage: 2920 ft ²	
Work Area: 97,380 ft ²		Common: 1760 ft ²	
Laboratory: 230 ft ²			

DESCRIPTION: Similar to 183-B except larger and supplies part of treated water to B-Reactor. Clearwell storage is 3 million gal.

STATUS: In use.

(See Figure A-4, Page 1.177, and Figure B-2, Page 1.179.)

1.34

100 Area
190-C Building

NUMBER: 190-C

NAME: Main Pump House

DIMENSIONS: 196 x 183 ft

Office: 560 ft²

Storage: 335 ft²

Work Area: 61,425 ft²

Common: 6000 ft²

Shops: 500 ft²

DESCRIPTION: Similar to 190-B Building except smaller because storage tanks are not housed in the building.

STATUS: In service.

1.35

100 Area
1702-C Building

NUMBER: 1702-C

NAME: 105-Area Badge House

DESCRIPTION: Similar to 1702-B except 210 ft²

STATUS: In use.

1.36

100 Area

1736-C Building

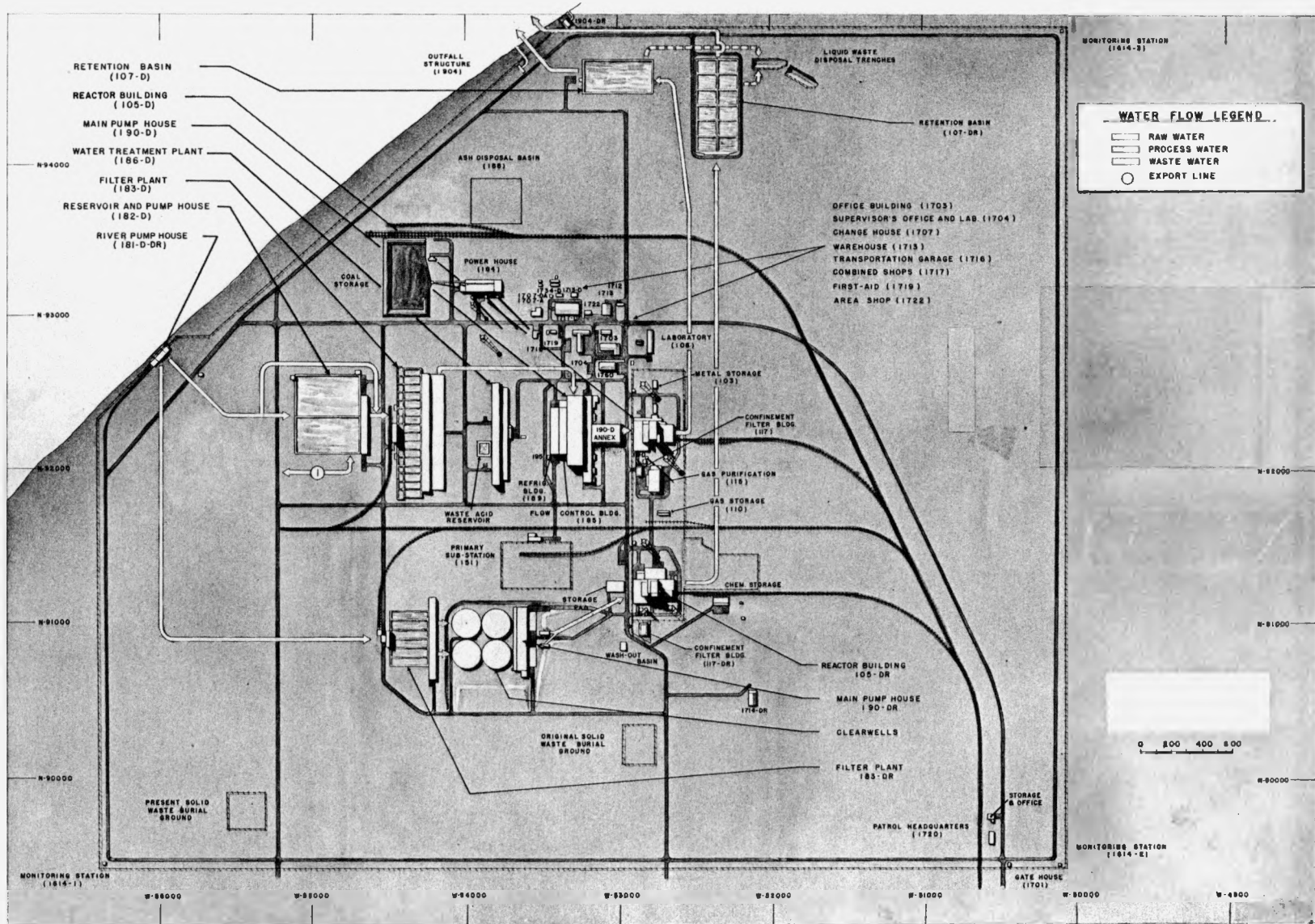
NUMBER: 1736-C

NAME: Storage Building

DESCRIPTION: Identical with 1736-B Building

STATUS: In use.

ARC-GE RICHLAND, WASH.



100-D and 100-DR AREAS

1.37

100 Area
103-D Building

NUMBER: 103-D

NAME: Fresh Metal Storage

DESCRIPTION: Identical with 103-B Building

STATUS: In service

100 Area
105-D Building

1.38

100 Area
105-D Building

NUMBER: 105-D

NAME: Reactor Building

DIMENSIONS:

Offices: 1762 ft²

Shops: 3275 ft²

Work Area: 28,832 ft²

Storage: 3845 ft²

Laboratory: 380 ft²

Common: 15,573 ft²

DESCRIPTION: Similar to 105-B except for minor variations in layout.

STATUS: In service.

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1.39

100 Area
107-D Building

NUMBER: 107-D

NAME: Effluent Water Retention Basin

DESCRIPTION: Identical with 107-B except facility is in use and is cross-tied into 107-DR system.

STATUS: In use

1.40

100 Area
108-D Building

NUMBER: 108-D

NAME: Mechanical Development Laboratory

PURPOSE: Provides laboratories and related space for development of specialized equipment used in reactor operations.

DIMENSIONS: 150 ft 8 in. x 32 ft x 41 ft; 14,400 ft² total area
Laboratory: 3480 ft² Storage: 5700 ft²
Shops: 3702 ft² Common: 1500 ft²

DESCRIPTION: This three-story, steel frame and concrete block structure has a precast concrete tile roof with built-up tar and gravel surface. Power and other utilities are completely adequate for laboratory operations. The laboratory is used for equipment development and contains various reactor mock-up facilities such as segments of the C- and K-Reactor lattices, flow mock-ups and simulated elevator and reactor face equipment. About two-thirds of the building is outfitted with facilities for handling mildly contaminated materials and equipment.

STATUS: In use.

REFERENCE DRAWING: W-74382

1.41

100 Area
115-D Building

NUMBER: 115-D

NAME: Gas Recirculation

DESCRIPTION: Identical with 115-B except serves D- and DR-Reactors

STATUS: In use.

1.42

100 Area
117-D Building

NUMBER: 117-D

NAME: Filter Building

DESCRIPTION: Identical with 117-B Building

STATUS: In use.

1.43

100 Area
181-D Building

NUMBER: 181-D

NAME: River Pump House

DIMENSIONS: 169 x 50 x 20 ft high; 8450 ft² total area

Office: 100 ft²

Work Area: 8300 ft²

Common: 165 ft²

DESCRIPTION: Similar to 181-B except for size and equipment. Serves
D- and DR-Reactors.

STATUS: In use.

100 Area
182-D Building

1.44

100 Area
182-D Building

NUMBER: 182-D

NAME: Reservoir and Pump House

DESCRIPTION: Identical with 182-B

STATUS: In use.

(See Figure B-1, Page 1.178.)

1.45

100 Area
183-D Building

NUMBER: 183-D

NAME: Filter Plant (head house and chemical building, flocculation and subsidence basins, filter building, clearwells)

DESCRIPTION: Identical with 183-B except for size of settling basins and filter system. Cross-tied to DR-Reactor.

STATUS: In use.

(See Figure A-4, Page 1.177, and Figure B-2, Page 1.179.)

1.46

100 Area
184-D Building

NUMBER: 184-D

NAME: Power House

DESCRIPTION: Identical with 184-B except contains five boilers and has three stacks.

STATUS: In use.

1.47

100 Area
185-D Building

NUMBER: 185-D

NAME: Thermal Hydraulic Laboratory

DESCRIPTION: Identical with 185-B in construction. This building and 189-D can be considered as a single unit housing mechanical development, thermal hydraulic laboratories, and shop facilities. Refer to 189-D description.

STATUS: In service.

REFERENCE DRAWING: W-71742

1.48

100 Area
186-D Building

NUMBER: 186-D

NAME: Water Treatment Building

PURPOSE: Originally intended for demineralization system for reactor cooling water but never so used.

DIMENSIONS: 670 x 128 x 87 ft; 85,760 ft² total area

Building: 670 x 50 x 68 ft

Clearwell: 545 x 55 x 30 ft (20 ft below ground)

Pump Room: 70 x 26 x 36 ft (20 ft below ground)

DESCRIPTION: This two-story building has reinforced concrete foundations and floors, steel framing, and concrete block walls. Roof is concrete tile with built-up gravel surface. The clearwell area and pump building adjoin the 185-D Building on the east side and share a common wall with it.

APPURTENANCES: Waste acid reservoir

REFERENCE DRAWING: W-70863

(See Figure B-3, Page 1.180.)

1.49

100 Area
189-D Building

NUMBER: 189-D

NAME: Experimental Laboratory

DIMENSIONS: 307 x 55 x 53 ft high

Office: 420 ft²

Storage: 6400 ft²

Laboratory: 10,490 ft²

Common: 2890 ft²

DESCRIPTION: A steel framed, concrete block wall structure with reinforced concrete foundation and floor, and concrete slab-roof with built-up tar and gravel surface. The 189-D Building is parallel to and has a common wall with the 185-D Building.

The 189-D Building was originally intended to house refrigeration equipment which was considered of possible necessity at the time of construction. These facilities were never used for the original purpose and the building has since been outfitted for other uses. The original pedestal foundations and well pits have been removed and filled and the building now has a plane floor. At the present time the 185-D and 189-D buildings may be considered as a single facility about one-third of which is used as a mechanical development laboratory with flow mock-ups, graphite lattice mock-ups, etc. Another third is occupied by Hanford Laboratories thermal-hydraulics laboratory which has facilities for heating test specimens with up to 4000 kw dc at pressures of 2500 psig and water flows of 250 gal/min. Facilities exist for boiling burnout, fog cooling, transient heat transfer, and flow instability studies. The remainder houses rather extensive service and craft shop facilities and serves as storing area. The 189-D Building has a 50 ton bridge crane that serves most areas of the building.

STATUS: In use.

REFERENCE DRAWING: W-71743

1.50

100 Area
190-D Building

NUMBER: 190-D

NAME: Main Pump House and Annex

DESCRIPTION: Almost identical to 190-B Building

STATUS: In service

1.51

100 Area
195-D Building

NUMBER: 195-D

NAME: Vertical Safety Rod Tower

PURPOSE: Experimental laboratory for testing vertical safety rods and associated components.

DIMENSIONS: 18 x 18 x 120 ft high; 324 ft² total area

DESCRIPTION: This building has a reinforced concrete foundation and floor, corrugated metal wall over steel framing, and precast concrete roof built-up with tar and gravel surfacing.

STATUS: In service.

1.52

100 Area
1605-D Building

NUMBER: 1605-D

NAME: Guard Tower

PURPOSE: Security Patrol Station

DIMENSIONS: 13.5 x 13.5 x 12 ft high

DESCRIPTION: An elevated one-room, flat roofed structure mounted on a structural steel frame tower 20 ft above the roof of 181-D Building. The building has wood flooring, shake siding and a built-up felt and gravel surfaced roof. The tower has a 3 ft wide walkway and is equipped with a hand operated searchlight mounted on the roof. Access is by an exterior stairway.

STATUS: In use.

1.53

100 Area
1608-D Building

NUMBER: 1608-D

NAME: Waste Water Pump House

PURPOSE: Remove water from reactor sump

DIMENSIONS: 20 x 20 x 15 ft deep

Work Area: 400 ft²

DESCRIPTION: A concrete structure with subsurface concrete floor and foundation and concrete roof with built-up tar and gravel surface. The building contains automatic pumping equipment to remove sump drainage.

STATUS: In service.

1.54

100 Area
1701-D Building

NUMBER: 1701-D

NAME: Gate House

PURPOSE: Serves as area badge house

DESCRIPTION: Identical with 1701-B Building

STATUS: In service.

1.55

100 Area
1702-D Building

NUMBER: 1702-D

NAME: 105 Area Badge House

PURPOSE: Provides entrance to exclusion area

DESCRIPTION: Identical with 1702-B Building

STATUS: In service.

1.56

100 Area
1703-D Building

NUMBER: 1703-D

NAME: Technical Office Building

PURPOSE: Provide offices for area administrative and technical personnel.

DIMENSIONS: 171 x 33 x 20 ft high

Offices: 4150 ft²

Common: 1850 ft²

DESCRIPTION: A one-story wooden frame structure on concrete foundation with concrete floor, asbestos shake siding, and gabled roof with composition shingles.

STATUS: In service. About 10% of the building is currently used by Hanford Laboratories' personnel.

1.57

100 Area
1704-D Building

NUMBER: 1704-D

NAME: Office Building

PURPOSE: Provide offices for area administrative and technical personnel.

DESCRIPTION: Identical with 1704-B.

STATUS: In service. Houses reactor operating and research and engineering personnel.

1.58

100 Area
1707-D Building

NUMBER: 1707-D

NAME: Change House

PURPOSE: Originally used as a change house this building now provides office facilities.

DESCRIPTION: Identical with 1707-B

STATUS: In service by Hanford Laboratories personnel.

1.59

100 Area
1707A-D Building

NUMBER: 1707A-D

NAME: Maintenance Changehouse

PURPOSE: Provides locker and shower facilities

DESCRIPTION: Identical with 1707A-B

STATUS: In service by reactor operating personnel.

1960

100 Area
1709-D Building

NUMBER: 1709-D

NAME: Fire Headquarters

PURPOSE: Now used as technical laboratory for radiation protection and
for ambulance parking.

DESCRIPTION: Identical with 1709-B.

STATUS: In service.

1. 61

100 Area
1713-D Building

NUMBER: 1713-D

NAME: Store-Room and Warehouse

PURPOSE: Now provides technical office and laboratory space.

DESCRIPTION: Identical with 1713-B

APPURTENANCES: The 800 ft² 1712-D Building is attached to 1713-D Building and provides instrument equipment storage.

STATUS: In service.

1715-D
1715-D

1.62

100 Area
1715-D Building

NUMBER: 1715-D

0-00 1000 000

NAME: Oil and Paint Storage

1715-D Building

PURPOSE: Storage

1715-D Building

DESCRIPTION: Identical with 1715-B

1715-D Building

STATUS: In service.

1715-D Building

1.63

100 Area
1716-D Building

NUMBER: 1716-D

NAME: Automotive Repair

PURPOSE: Provide garage and office facilities

DESCRIPTION: Identical with 1716-B.

STATUS: In service.

1.64

100 Area
1717-D Building

NUMBER: 1717-D

NAME: Area Maintenance and Offices

DESCRIPTION: Almost identical with 1717-B Building.

STATUS: In use.

1. 65

100 Area
1719-D Building

NUMBER: 1719-D

NAME: First Aid

PURPOSE: Provides First Aid facilities for area.

DESCRIPTION: Identical with 1719-B except for annex.

The 1719-D Annex is a 38 x 12 ft flat-topped building of similar construction which serves as a storage building for janitorial supplies.

STATUS: In service.

1.66

100 Area
1720-D Building

NUMBER: 1720-D

NAME: Patrol Headquarters

PURPOSE: Serves as patrol and security headquarters.

DESCRIPTION: Identical with 1720-B.

STATUS: In service.

1.67

100 Area
1722-D Building

NUMBER: 1722-D

NAME: Paint Shop and Riggers Loft

DESCRIPTION: Identical with 1722-B.

STATUS: In service.

1.68

100 Area
1760-D Building

NUMBER: 1760-D

NAME: Office Building

DIMENSIONS: 119.5 x 33 x 27 ft high; about 8000 ft² total area.

DESCRIPTION: A two-story wood frame structure with drop siding, concrete footing, concrete block foundation, wood flooring, and hipped roof with composition shingles. The bulk of the building is in offices. A conference room occupying part of the first floor is currently in use as a large office area.

STATUS: In use.

1.69

100 Area
105-DR Building

NUMBER: 105-DR

NAME: Reactor Building

DIMENSIONS: 268 x 187 ft; 50,120 ft² total area

Office: 1410 ft²

Shops: 910 ft²

Work Area: 38,100 ft²

Storage: 1680 ft²

Laboratory: 1310 ft²

Common: 14,290 ft²

DESCRIPTION: Similar to 105-B except for minor variations in layout.

STATUS: In service.

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1.70

100 Area
107-DR Building

NUMBER: 107-DR

NAME: Effluent Water Retention Basin

DESCRIPTION: Similar to 107-B.

STATUS: In service.

1.71

100 Area
117-DR Building

NUMBER: 117-DR

NAME: Filter Building

DESCRIPTION: Identical with 117-B Building.

STATUS: In service.

1.72

100 Area
183-DR Building

NUMBER: 183-DR

NAME: Filter Plant

DIMENSIONS:

	<u>Size, ft</u>	<u>Area, ft²</u>	<u>Floor Space, ft²</u>
Head House	110 x 80	8,800	26,400
Filter Bldg	560 x 52	29,120	
Work Area:	43,700 ft ²	Laboratory: 250 ft ²	
Storage:	1090 ft ²	Common: 600 ft ²	

DESCRIPTION: Similar to 183-B except no clearwells. Transfer of water from 190-DR is by gravity.

APPURTENANCES: Four 3,750,000 gal tanks in the open area between the 183-DR and 190-DR buildings.

STATUS: In service.

(See Figure A-4, Page 1.177, and Figure B-2, Page 1.179.)

1.73

100 Area
190-DR Building

NUMBER: 190-DR

NAME: Main Pump House

PURPOSE: Provide primary cooling water for DR-Reactor.

DIMENSIONS: 420 x 120 ft

Office: 325 ft²

Work Area: 60,600 ft²

Common: 2420 ft²

DESCRIPTION: Single story steel frame building on concrete foundation with concrete floors, pressed steel and transite siding, and concrete roof with tar and gravel surfacing. The 190-DR Building houses a number of electrically driven 10,000 gal/min pumps used for reactor cooling. It is similar in function to the other 190 buildings.

STATUS: In service.

1.74

100 Area
1608-DR Building

NUMBER: 1608-DR

NAME: Waste Water Pump House

DESCRIPTION: Similar to 1608-D except for size and detail of equipment.

STATUS: In service.

1.75

100 Area
1702-DR Building

NUMBER: 1702-DR

NAME: 105 Area Badge House

PURPOSE: Provides entrance to exclusion area.

DESCRIPTION: Identical with 1702-B

STATUS: In service.

1.76

100 Area
1713-DR Building

NUMBER: 1713-DR

NAME: Warehouse

PURPOSE: Storage of essential materials, spare parts, and testing equipment.

DIMENSIONS: 100 x 40 x 16 ft high; 4000 ft² total area

DESCRIPTION: Single story, temporary construction, frame structure on concrete foundation with concrete floor, ship-lap siding, and gable wooden roof covered with tar paper and roll roofing.

APPURTENANCES: Wooden unloading platform 100 x 10 x 4 ft high (floor level).

STATUS: In service.

1.77

100 Area
1714-DR Building

NUMBER: 1714-DR

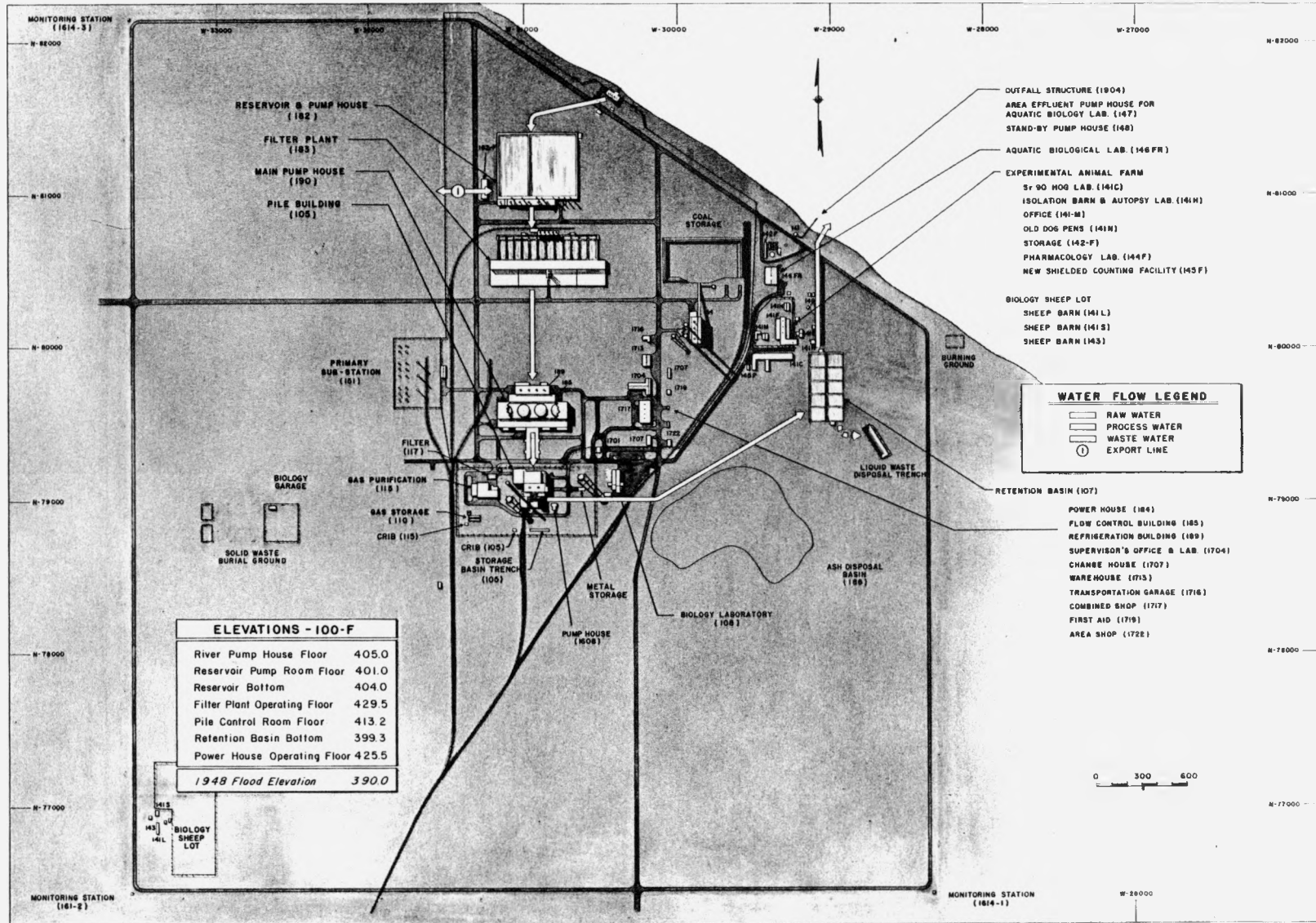
NAME: Equipment Storage

DIMENSIONS: 40 x 80 ft; 3200 ft² total area

DESCRIPTION: A sheet metal "Butler" building on a concrete slab. This building is used only for storage and is not equipped with any services.

STATUS: In use.

ALBERT MICHLAND, WASH.



100-F AREA

1.78

100 Area
103-F Building

NUMBER: 103-F

NAME: Fresh Metal Storage

PURPOSE: Pallet storage of fuel elements prior to use in the reactor.

DESCRIPTION: Identical with 103-B.

STATUS: In service.

1.79

100 Area
105-F Building

NUMBER: 105-F

NAME: Reactor Building

PURPOSE: Provides housing for nuclear reactor, and directly associated equipment used in reactor operation.

DESCRIPTION: Almost identical with 105-B.

STATUS: In use.

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1.80

100 Area
106-F Building

NUMBER: 106-F

NAME: Contaminated Equipment Storage

DESCRIPTION. Identical with 106-B.

STATUS: In service.

1.81

100 Area
107-F Building

NUMBER: 107-F

NAME: Effluent Water Retention Basin

PURPOSE: Provide transient retention of reactor cooling water prior to its return to the Columbia River.

DESCRIPTION: Identical with 107-B except smaller gate house area.

APPURTENANCES: Outfall system to river.

STATUS: In service.

NUMBER: 108-F

NAME: Biology Laboratory

PURPOSE: Provide office and laboratory space for Hanford Laboratories' Biology Laboratory.

DIMENSIONS: Offices: 2950 ft²
Laboratories: 8100 ft²
Work Area: 3196 ft²
Common: 16,837 ft²

DESCRIPTION: This building consists of the 108-F laboratory building which was part of the original area construction and an annex which was added in 1950. The original building is a rectangular four-story, steel frame and concrete block structure having concrete foundation and floors. The roof is of concrete tile with built-up tar and gravel surface. Total area is about 20,000 ft². The new annex, about 11,000 ft², was added in 1961. This three-story rectangular addition is of block construction and adjoins the older building. The complete facility contains 39 offices, 47 laboratories, a heavily shielded Co⁶⁰ source room, 18 rooms for handling small animals, a 920 ft² conference room, and a 982 ft² biology library. Normal laboratory services and utilities are provided. The instrument room and small animal quarters are mechanically air-conditioned.

STATUS: In service.

REFERENCE DRAWING: W-74382

1.83

100 Area
108-FC Building

NUMBER: 108-FC

NAME: Electrical and Glass Shops

DIMENSIONS: 21.5 x 45 ft

Offices: 200 ft²

Work Area: 760 ft²

DESCRIPTION: A single story, metal building on a reinforced concrete slab. Building is heated by electric space heaters and has two evaporative coolers. Utilities include compressed air, propane, hydrogen, oxygen, hot and cold water, and sanitary drain. Electrical system provides 220 and 110 v.

STATUS: In service. Also offices radiation monitoring personnel.

1.84

100 Area
115-F Building

NUMBER: 115-F

NAME: Gas Recirculation

PURPOSE: Houses gas circulating pumps, and other equipment related
to reactor gas coolant system.

DESCRIPTION: Identical with 115-B.

STATUS: In use.

1.85

100 Area
117-F Building

NUMBER: 117-F

NAME: Exhaust Air Filter Building

PURPOSE: Filters ventilation air from the confinement zone of the 105-F Reactor Building prior to its discharge to atmosphere through the 105-F stack.

DESCRIPTION: Identical with 117-B.

STATUS: In service.

NUMBER: 141-F

NAME: Animal Farm

DESCRIPTION: The 141 Animal Farm consists of eight buildings designed as an integrated facility for radiobiological experiments with large animals. A particular feature of the facility is a separate sewage system for handling radioactive wastes.

The 141 Buildings are:

141-B, a 1620 ft² two-story metal barn for storage of feed.

141-C, a 4900 ft² single story metal building with concrete floors used for long term feeding and housing of large animals. The building includes 200 ft² of laboratory space.

141-F, a 4900 ft² building of concrete block construction with concrete floor and concrete animal pens both inside and outside the building. Facilities are duplicated to make cleaning easier. Building is connected to special sewer system and has 440 y outlets for electric space heaters.

141-H, a 1280 ft² concrete block building containing six laboratories. It is outfitted to serve as an isolation barn and for large animal post-mortem examinations.

141-M, a 1280 ft² building, containing offices and lunchroom, and serving the administration requirements of the Animal Farm.

141-N, a 410 ft² concrete block building housing sewage pumps. It also has a conveyor system for transferring solid material to outside pits.

141-P and 141-S, small metal buildings of about 400 ft² area used for housing sheep and swine. They have dirt floors.

STATUS: All buildings in service.

1.87

100 Area
142-F Building

NUMBER: 142-F

NAME: Storehouse

DIMENSIONS: 1120 ft²

DESCRIPTION: A single-story all metal building with reinforced concrete foundation and floor. This building has no services except electric lights and receptacles.

STATUS: In service.

1.88

100 Area
144-F Building

NUMBER: 144-F

NAME: Inhalation Laboratories

PURPOSE: Houses facilities for exposing animals to particulate material.

DIMENSIONS:

Offices: 370 ft²

Laboratories: 1040 ft²

Work Area: 790 ft²

Common: 1050 ft²

DESCRIPTION: A rectangular one-story, 3250 ft² concrete block building. In addition to lunch room and diet preparation kitchen, this building contains one large office and six laboratory rooms plus six indoor and outdoor animal runs. The building is heated by steam coils in a fresh air system plus electric wall heaters. Cooling is accomplished by one evaporation cooler on roof. The large inhalation laboratory and the metabolic cages have their own air exhaust. In addition to the usual services, this building has a "fresh air" system for emergency use in contaminated areas.

STATUS: In use.

1.89

100 Area
144-R Building

NUMBER: 144-R

NAME: Dog Kennel Runs

DESCRIPTION: A single-story, 1400 ft², corrugated transite shed on a reinforced concrete slab. The building is heated electrically and cooled by an evaporative cooler.

STATUS: In service.

1.90

100 Area
145-F Building

NUMBER: 145-F

NAME: Animal Monitoring Laboratory

PURPOSE: Houses whole body counter for determining radioactive burden of experimental animals.

DIMENSIONS: 18 x 24 ft
Offices: 400 ft²
Common: 225 ft²

DESCRIPTION: A concrete building specifically designed to provide a low background environment for the whole body counter. Walls are 1 ft thick and construction is partially below grade. Heating and cooling unit is mounted on the roof. Electrical power is the only utility available.

STATUS: In service.

1.91

100 Area
146-FR Building

NUMBER: 146-FR

NAME: Radioecology and Aquatic Biology Laboratory

DIMENSIONS:

Offices: 1160 ft²

Laboratories: 3740 ft²

Work Area: 630 ft²

Common: 3600 ft²

DESCRIPTION: A single-story rectangular concrete block building with concrete floor containing facilities and equipment for work with all types of aquatic life. Fish rearing troughs are in the building and ponds in the adjacent area.

APPURTENANCES: Fish rearing ponds and small pump houses for removal of effluent water from aquatic biology laboratory.

STATUS: In service.

1.92

100 Area
149-F Building

NUMBER: 149-F

NAME: Biology Warehouse

PURPOSE: Material storage and boathouse

DIMENSIONS: 24 x 28 x 12 ft; 700 ft² total area

DESCRIPTION: Single-story wood frame structure, asbestos shake siding, wood floor and foundation. Gable roof with rolled roofing. No utilities except electricity.

STATUS: In service.

1.93

100 Area
181-F Building

NUMBER: 181-F

NAME: River Pump House

PURPOSE: Pump raw river water to water treatment plants or area
reservoir.

DESCRIPTION: Almost identical with 181-B.

STATUS: In use.

1.94

100 Area
182-F Building

NUMBER: 182-F

NAME: Reservoir and Pump House

PURPOSE: Provide reserve water for reactor cooling and raw export
water for 100-200 Area intertie system.

DESCRIPTION: Identical with 182-B.

STATUS: In service.

(See Figure B-1, Page 1.178.)

1.95

100 Area
182-FA Building

NUMBER: 182-FA

NAME: Pump Test Facility

DIMENSIONS: 40 x 80 x 18 ft high; 3200 ft² total area

DESCRIPTION: Single-story steel frame building with aluminum siding, and concrete foundation, floor, and pump well. Roof has opening for introduction of large pieces of equipment. A pump test stand with piping connections, valves, gages, etc. is suitable for pumps with capacities to 12,000 gal/min. Test performance characteristics can be studied under a variety of controlled conditions. In addition to normal services the building is served by a 15 kva power transformer.

STATUS: In service but used only intermittently.

1,968

100 Area
183-F Building

NUMBER: 183-F

NAME: Filter Plant

PURPOSE: Houses water treatment and filtering facilities and provides reservoir capacity for treated water.

DESCRIPTION: Almost identical with 183-B.

STATUS: In use.

(See Figure A-4, Page 1.177, and Figure B-2, Page 1.179.)

1.97

100 Area
184-F Building

NUMBER: 184-F

NAME: Power House

PURPOSE: Provide steam and emergency electric power.

DESCRIPTION: Identical with 184-B.

STATUS: In use.

1.98

100 Area
185-F Building

NUMBER: 185-F (See also 189-F.)

NAME: Water Treatment Plant

PURPOSE: Originally intended as a deaerating plant but never used for this purpose.

DIMENSIONS: 307 x 48 x 60 ft

Work Area: 10,880 ft ²	Storage: 4170 ft ²
Laboratory: 970 ft ²	Common: 840 ft ²
Shops: 1750 ft ²	

DESCRIPTION: Steel and concrete block structure, reinforced concrete foundation, precast concrete slab roof with built-up tar and gravel surfacing. The building lies between the 189-F and 190-F Buildings and shares a common wall with each. The original mounting pedestals for the deaerators have been removed so that a large expanse of flat area exists. In recent years the building has been modified so that essentially all of it is useable. There are two mezzanines; one has been outfitted as a lunch room; the other provides storage space. Building services are limited.

STATUS: The 185-F Building is now in use as a central shop and storage building.

1.99

100 Area
189-F Building

NUMBER: 189-F (See also 185-F.)

NAME: Refrigeration Building

PURPOSE: Originally intended to house refrigeration facilities for the reactor cooling water.

DIMENSIONS: 229 x 53 x 53 ft high; 15,100 ft² total area

DESCRIPTION: A steel framed concrete block building built on a reinforced concrete foundation. Concrete floor and concrete slab roof with built-up tar and gravel surface. Services include steam, compressed air, and 25 ton overhead crane. In addition, the building has a pipe trench and a tank pit 13 ft below grade. The pipe trench is covered by a steel grating so that essentially all floor space is useable. Large roll-type doors at each end accommodate large trucks for loading and unloading.

The 189-F and 185-F Buildings may be considered as a common facility divided into two large rooms by a concrete block wall.

STATUS: Partially in use as a shop and storage area for slightly contaminated equipment.

1.100

100 Area
190-F Building

NUMBER: 190-F

NAME: Main Pump House and Annex

PURPOSE: Provide primary coolant water for F-Reactor.

DESCRIPTION: Identical with 190-B.

STATUS: In service.

1.101

100 Area
646-F Building

NUMBER: 646-F

NAME: Radioecology Field Laboratory

DIMENSIONS: 20 x 40 ft

DESCRIPTION: An all-metal, insulated building on a reinforced concrete slab. Contains normal services and provides space for laboratory equipment used in conjunction with ecological studies on the neighboring terrain which includes several acres of land and two small lakes.

STATUS: In use.

1. 102

100 Area
1608-F Building

NUMBER: 1608-F

NAME: Waste Water Pump House - Lift Station

PURPOSE: Remove water from reactor sump.

DIMENSIONS: 36 x 34 x 20 ft high

Work Area: 1640 ft²

DESCRIPTION: Similar to 1608-D.

STATUS: In service.

1. 103

100 Area
1701A-F Building

NUMBER: 1701A-F

NAME: Gate House

PURPOSE: Serves as area badge house and security patrol station.

DIMENSIONS: 20 x 32 ft; 640 ft² total area

DESCRIPTION: Single-story concrete building with concrete floors and flat concrete roof with tar and gravel surface. This building has sanitary services and lunchroom.

STATUS: In service.

1.104

100 Area
1704-F Building

NUMBER: 1704-F

NAME: Office Building

PURPOSE: Provide offices for area administrative and technical personnel.

DESCRIPTION: Almost identical with 1704-B.

APPURTENANCES: A 16 in. reinforced concrete vault about 19 x 15 ft
which has been used as office space.

STATUS: In service.

1.105

100 Area
1705-F Building

NUMBER: 1705-F

NAME: Pharmacology Laboratory

DIMENSIONS: 20 x 56 ft; 1600 ft² total area

DESCRIPTION: Steel Quonset hutment with concrete foundation and floor.

APPURTENANCES: Green house 312 ft² in area and small boiler house.

STATUS: In service.

1.106

100 Area
1707-F Building

NUMBER: 1707-F

NAME: Change House

PURPOSE: Originally provided shower and locker room facilities, now used
as patrol headquarters and maintenance change house.

DESCRIPTION: Almost identical with 1707-B

STATUS: In service.

1.107

100 Area
1707A-F Building

NUMBER: 1707A-F

NAME: Office Building

PURPOSE: Provides office, conference room, and classroom space.

DESCRIPTION: Identical with 1707A-B.

STATUS: In service.

1.108

100 Area
1713-F Building

NUMBER: 1713-F

NAME: Office Building

PURPOSE: Provides offices for technical personnel and drafting operation.

DESCRIPTION: Almost identical with 1713-B.

STATUS: In service.

1.109

100 Area
1716-F Building

NUMBER: 1716-F

NAME: Automotive Repair

PURPOSE: Provide garage facilities.

DESCRIPTION: Identical with 1716-B.

STATUS: In service.

1.110

100 Area
1717-F Building

NUMBER: 1717-F

NAME: Combined Shops

PURPOSE: Provide area maintenance.

DESCRIPTION: Almost identical with 1717-B

APPURTENANCE: Concrete block gas cylinder storage facility.

STATUS: In service.

1.111

100 Area
1719-F Building

NUMBER: 1719-F

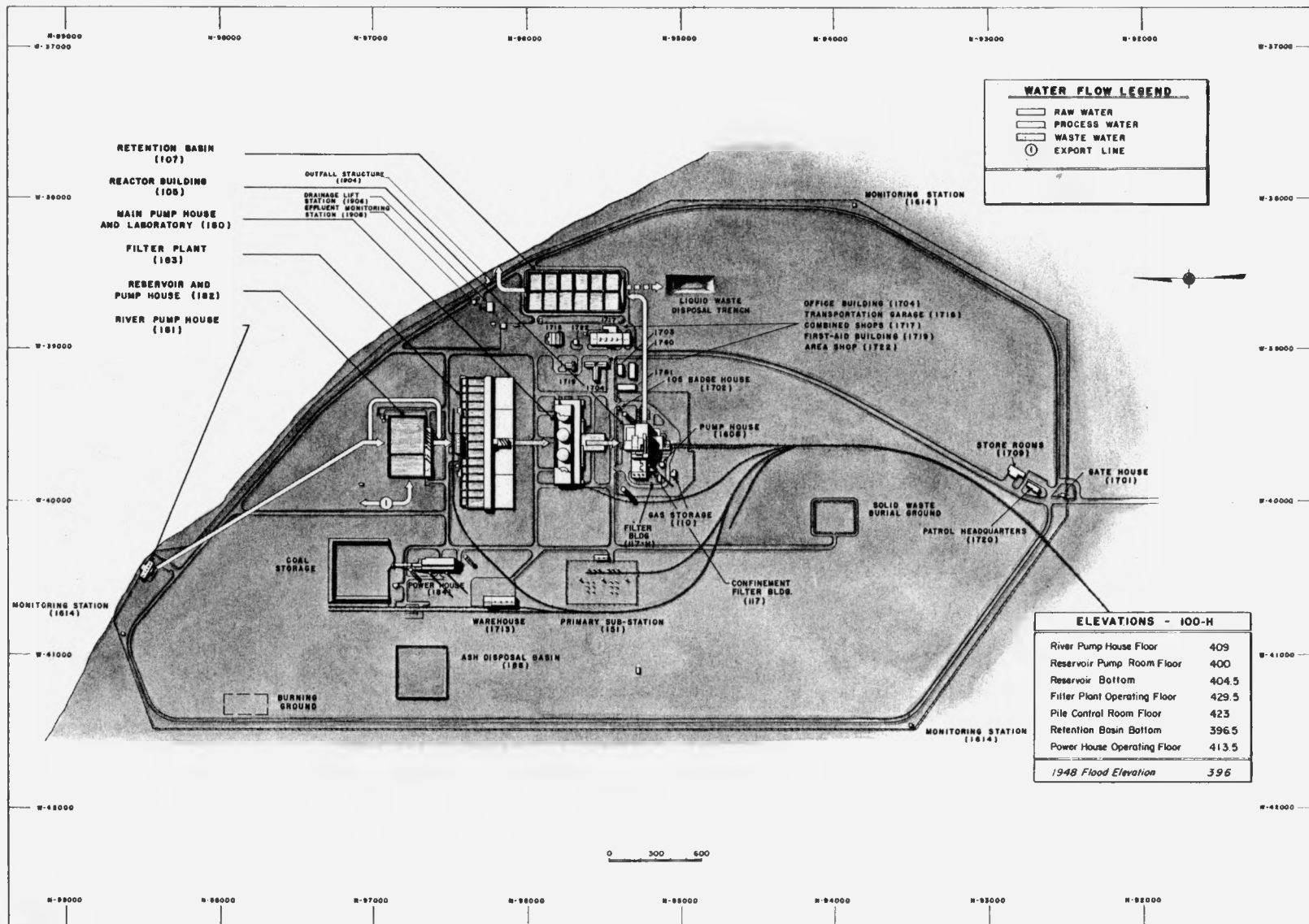
NAME: First Aid

PURPOSE: Provides First Aid facilities for area.

DESCRIPTION: Identical with 1719-B

STATUS: In service.

ARCEGE RICHLAND, WASH.



100-H AREA

1.112

100 Area
105-H Building

NUMBER: 105-H

NAME: Reactor Building

DIMENSIONS: 363 x 298 ft.

Office: 2200 ft²

Shops: 840 ft²

Work Area: 46,920 ft²

Storage: 3560 ft²

Laboratory: 3980 ft²

Common: 17,140 ft²

DESCRIPTION: Similar to 105-B except for minor variations in layout and detail.

STATUS: In service.

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1.113

100 Area
106-H Building

NUMBER: 106-H

NAME: Storage

PURPOSE: Provide storage for contaminated equipment.

DIMENSIONS: 50 x 25 x 12 ft high

Storage: 1250 ft²

DESCRIPTION: A galvanized-iron Quonset hutment with plywood flooring.
No services except electricity for lights and receptacles.

STATUS: In service.

1.114

100 Area
107-H Building

NUMBER: 107-H

NAME: Effluent Water Retention Basin

DIMENSIONS: 280 x 620 ft; capacity 18 million gal.

Gate House: 22 x 12 x 9 ft

DESCRIPTION: Similar to 107-B facility.

APPURTENANCES: Small pump house and crib for disposal of effluent water to ground.

STATUS: In use.

17115

100 Area
117-H Building

NUMBER: 117-H

NAME: Exhaust Air Filter Building

DESCRIPTION: Identical with 117-B.

STATUS: In use.

1.116

100 Area
181-H Building

NUMBER: 181-H

NAME: River Pump House

DIMENSIONS: 125 x 54 ft

Office: 260 ft²

Work Area: 8140 ft²

Common: 170 ft²

DESCRIPTION: Similar to 181-B.

STATUS: In use.

1.117

100 Area
182-H Building

NUMBER: 182-H

NAME: Reservoir and Pump House

DIMENSIONS: Pump House: 373 x 49 x 22.5 ft
Reservoir: 438 x 245 x 15 ft deep
Capacity: 10 million gal

DESCRIPTION: Similar to 182-B.

STATUS: In use.

(See Figure B-1, Page 1.178.)

1.118

100 Area
183-H Building

NUMBER: 183-H

NAME: Filter Plant

DIMENSIONS:

	<u>Size, ft</u>	<u>Area, ft²</u>
Head House	134 x 63	8,510
Filter Bldg	858 x 40	34,100
Pump Room	134 x 37	4,960
Office: 420 ft ²	Storage: 4290 ft ²	
Work Area: 54,800 ft ²	Common: 2750 ft ²	
Laboratory: 500 ft ²		

DESCRIPTION: Similar to 183-B.

STATUS: In use.

(See Figure A-4, Page 1.177, and Figure B-2, Page 1.179.)

1.119

100 Area
184-H Building

NUMBER: 184-H

NAME: Power House

DIMENSIONS: 200 x 60 x 80 ft high

Office: 170 ft²

Storage: 150 ft²

Work Area: 54,420 ft²

Common: 1320 ft²

DESCRIPTION: Similar to 184-B.

APPURTENANCES: A 1250 ft² building housing pumps for lifting waste water to the river.

STATUS: In use.

1.120

100 Area
190-H Building

NUMBER: 190-H

NAME: Main Pump House

DESCRIPTION: Similar to 190-B except in size and pumping system.

STATUS: In use.

1.121

100 Area
1608-H Building

NUMBER: 1608-H

NAME: Waste Water Pump House - Lift Station

DESCRIPTION: Similar to 1608-D except for size, 1150 ft².

STATUS: In use.

1.122

100 Area
1701-H Building

NUMBER: 1701-H

NAME: Gate House

DESCRIPTION: Similar to 1701-B except larger, 1450 ft².

STATUS: In use.

1.123

100 Area
1702-H Building

NUMBER: 1702-H

NAME: 105 Area Badge House

DESCRIPTION: Similar to 1702-B except for size, 225 ft².

STATUS: In use.

1.124

100 Area
1703-H Building

NUMBER: 1703-H

NAME: Office Building

PURPOSE: Provide offices for area administrative and technical personnel.

DIMENSIONS: 106 x 36.5 x 26 ft high

Office: 1740 ft²

Common: 2130 ft²

DESCRIPTION: A single-story frame structure with asbestos shake siding. Concrete block foundation, wood floor, gabled roof with composition shingles.

STATUS: In use.

1.125

100 Area
1704-H Building

NUMBER: 1704-H

NAME: Office Building

PURPOSE: Provide office facilities for area administrative and technical personnel.

DIMENSIONS: 154 x 37 x 20 ft high; 90.5 x 37 x 20 ft high

Office: 5220 ft²

Storage: 100 ft²

Common: 3730 ft²

DESCRIPTION: A single-story, "T" shaped wood frame structure with asbestos shake siding, concrete block foundation, wood flooring, gable and hipped roof with composition shingles.

STATUS: In use.

1.126

100 Area
1709-H Building

NUMBER: 1709-H

NAME: Office Building

PURPOSE: Provide office space for area personnel.

DIMENSIONS: 112 x 58 x 12 ft high

Office: 1260 ft²

Storage: 2480 ft²

Work Area: 360 ft²

Common: 1020 ft²

Shops: 250 ft²

DESCRIPTION: A single-story frame structure with asbestos shake siding, concrete floor and foundation, gabled roof with composition shingles.

STATUS: In use.

1.127

100 Area
1713-H Building

NUMBER: 1713-H

NAME: Warehouse

PURPOSE: Material storage and spare parts warehouse.

DIMENSIONS: 156 x 62 ft; 72 x 60 ft

Office: 145 ft²

Storage: 13,650 ft²

DESCRIPTION: An "L" shaped, single-story, steel frame structure with corrugated transite siding. Foundation and floor are concrete and roof is built-up tar and gravel surfacing over flat-prefabricated concrete tile.

APPURTENANCES: Railroad spur with adjacent 4 ft high concrete unloading platform.

STATUS: In use.

1.128

100 Area
1715-H Building

NUMBER: 1715-H

NAME: Oil and Paint Storage

DIMENSIONS: 32 x 23 x 20 ft high
Storage: 740 ft²

DESCRIPTION: A wood frame structure with asbestos shake siding,
concrete floor, gable roof with composition shingles.

STATUS: In service.

1.129

100 Area
1716-H Building

NUMBER: 1716-H

NAME: Office and Garage

DIMENSIONS: 93 x 76.5 x 20 ft high

Office: 480 ft²

Storage: 600 ft²

Work Area: 4630 ft²

Common: 1490 ft²

DESCRIPTION: A steel frame structure with corrugated transite siding, concrete floor and foundation, flat wood roof with built-up tar and gravel surface. Equipped for service station function, light maintenance and repair. Approximately one-half of the building has been converted to shops for maintenance, calibration, and repair of electrical and electronic instruments.

STATUS: In use.

NUMBER: 1717-H

NAME: Central Maintenance Shops

PURPOSE: Provides centralized service facilities for certain 100-Area maintenance requirements.

DIMENSIONS: 248 x 82 x 20 ft high

Offices: 1110 ft²

Storage: 4650 ft²

Shops: 13,025 ft²

Common: 1550 ft²

DESCRIPTION: A concrete and steel structure with corrugated transite walls, concrete foundation and floor, flat prefabricated concrete tile roof with built-up tar and gravel surface. The building was completely renovated in 1964 and is in excellent condition. A sprinkler-type fire control system was installed and lighting was up-graded to provide 200 ft candle illumination. The shop area is provided with a monorail system of 3 tons capacity.

The 1717-H Building houses a machine shop, sheetmetal shop, fabrication shop, and carpenter shop that provide services for all of the 100-Area operations. The machine shop is well outfitted with about 50 light to medium duty machine tools and an assortment of inspection equipment. The facility includes a tool crib and material storage area. The sheetmetal shop is outfitted with shears; breaks; and rolling, forming, and bending equipment. It also contains a forge and extensive welding facilities.

The fabrication shop is outfitted for fabrication and repair of reactor system components particularly those associated with water treatment and pumping systems.

STATUS: In use.

(See Figure B-4, Page 1.181.)

1.131

100 Area
1719-H Building

NUMBER: 1719-H

NAME: First Aid

DIMENSIONS: 55 x 17.5 x 18 ft high; 43.5 x 29.5 x 18 ft high
Office: 460 ft² Storage: 100 ft²
Work Area: 945 ft² Common: 460 ft²
Laboratory: 315 ft²

DESCRIPTION: A single-story, "T" shaped wood frame structure with asbestos shake siding, concrete foundation and floor, and wood gable roof with composition shingles. Facilities include first aid room, examination room, laboratory, ward, office and sanitary facilities.

STATUS: In use.

1. 132

100 Area
1720-H Building

NUMBER: 1720-H

NAME: Patrol Headquarters

PURPOSE: Provides office and associated facilities for area security patrol.

DIMENSIONS: 90.5 x 32 x 15 ft high

Office: 520 ft²

Work Area: 1150 ft²

Common: 1300 ft²

DESCRIPTION: A single-story wood frame structure with concrete foundation and floor, asbestos shake siding, gable roof with composition shingles. Facilities include locker, assembly, supply, wash and shower rooms, offices, and radio room.

APPURTENANCES: Emergency lighting generator building of frame construction.

STATUS: In use.

1.133

100 Area
1722-H Building

NUMBER: 1722-H

NAME: Paint Shop

DIMENSIONS: 1500 ft²

Work Area: 620 ft²

Storage: 810 ft²

Common: 70 ft²

DESCRIPTION: A single-story frame structure with concrete foundation and floor, asbestos shake siding, gable roof with composition shingle surfacing. The building has a 6 ft wide concrete unloading dock along one end. In addition to typical painting equipment the 1722-H Building is outfitted for metal-spraying and has complete sign painting facilities.

STATUS: In use.

1. 134

100 Area
1760-H Building

NUMBER: 1760-H

NAME: Office Building

DESCRIPTION: Similar to 1760-D.

STATUS: In service.

1. 135

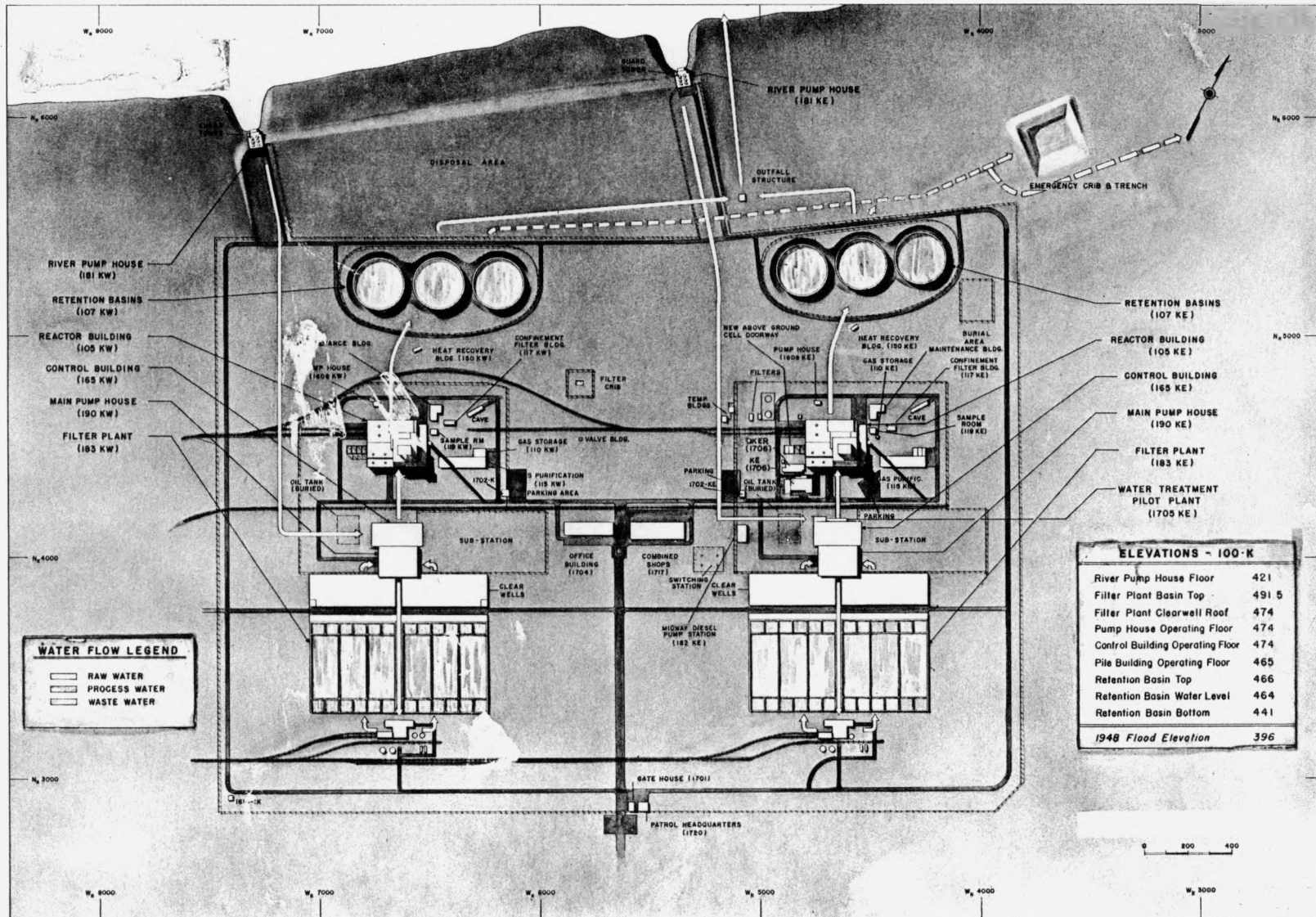
100 Area
1761-H Building

NUMBER: 1761-H

NAME: Office Building

DESCRIPTION: Identical to 1760-H Building except for slight differences
in lay-out.

STATUS: In service.



100-K AREA

1.136

100 Area
182-K Building

NUMBER: 182-K

NAME: Emergency Water Pumping

DIMENSIONS: 2610 ft²

DESCRIPTION: A steel framed structure with concrete foundation and floors, transite walls, and roof of insulated steel decking with built-up tar and gravel surfacing. The building houses diesel engine driven pumping gear and associated equipment for emergency reactor cooling. Water can be pumped from either the KE or KW clearwells to either of the K-Reactors.

APPURTENANCES: Oil storage

STATUS: In service.

1. 137

100 Area
1701-K Building

NUMBER: 1701-K

NAME: Area Badge House

PURPOSE: Security and Personnel Dosimetry

DIMENSIONS: 49 x 51 x 13.5 ft high

Work Area: 1240 ft²

Laboratory: 775 ft²

Common: 490 ft²

DESCRIPTION: A single-story concrete and steel frame structure with corrugated transite walls, concrete foundation and floor, and flat prefabricated cement board roof with built-up asphalt and gravel surfacing. The 1701-K Building adjoins the 1720-K Building, the east wall being common to both.

STATUS: In use.

1.138

100 Area
1704-K Building

NUMBER: 1704-K

NAME: Administrative Building

PURPOSE: Provide office space and First Aid Center

DIMENSIONS: 201 x 61 x 13 ft high; 12,160 ft² total area

Office: 8410 ft²

Common: 3750 ft²

DESCRIPTION: A single-story concrete and steel frame structure with corrugated transite siding and concrete foundation and floor. Flat roof with four-ply asphalt and gravel surfacing over Cemesto board and 1/4 in. steel plate.

STATUS: In use.

1. 139

100 Area
1717-K Building

NUMBER: 1717-K

NAME: Maintenance Shops

PURPOSE: Houses maintenance shops and light equipment maintenance facilities.

DIMENSIONS: 176 x 61 x 13 ft high; 10,740 ft² total area

Office: 710 ft²

Storage: 2050 ft²

Work Area: 1140 ft²

Common: 2050 ft²

Shops: 4850 ft²

DESCRIPTION: A single-story concrete and steel frame structure with corrugated transite siding, concrete foundation and floor, flat prefabricated Cemesto board roof with built-up asphalt and gravel surfacing. The building houses carpenter, millwright, welding, and painting shops for routine area maintenance as well as typical service station facilities and equipment for light automotive maintenance. (The central 100-Area shops are in the 1717-H Building.)

STATUS: In use.

REFERENCE DRAWING: H-1-19707

1. 140

100 Area

1720-K Building

NUMBER: 1720-K

NAME: Patrol Headquarters

PURPOSE: Provides facilities for security patrol, duplicating, and mail operations.

DIMENSIONS: 74 x 50 x 13 ft high
Office: 640 ft²
Work Area: 1720 ft²
Common: 1340 ft²

DESCRIPTION: A single-story concrete and steel frame structure with corrugated transite siding, concrete foundation and floor, Cemesto board or concrete slab roof with built-up asphalt and gravel surfacing. The 1720-K Building adjoins the 1701-K Building, the west wall being common to both.

STATUS: In use.

1. 141

100 Area
105-KE Building

NUMBER: 105-KE

NAME: Reactor Building

PURPOSE: Houses reactor and associated equipment.

DIMENSIONS: 275 x 213 x 120 ft high; 58,675 ft² total area
Office: 1040 ft² Shops: 1350 ft²
Work Area: 29,340 ft² Storage: 7760 ft²
Laboratory: 1270 ft² Common: 18,840 ft²

DESCRIPTION: A concrete and structural steel multistory structure having reinforced concrete or transite siding, precast reinforced concrete or insulating concrete roof with built-up asphalt and gravel surfacing.

The building is similar to the "smaller-reactor" buildings and contains the reactor, control room, offices, conference room, lunchroom, change room, spent fuel storage areas, ventilation systems, and certain test facilities. The building is zoned for control of airflow from office and service areas to potentially contaminated zones from which it is exhausted through an external filter system.

APPURTENANCES: 300 ft reinforced concrete exhaust stack. Railroad spur entering the building. 150-KE heat exchanger for utilizing reactor effluent water heat for space heating.

STATUS: In use.

REFERENCE DRAWING: H-1-14386

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1.142

100 Area
107-KE Building

NUMBER: 107-KE

NAME: Effluent Water Retention Basin

PURPOSE: Contain reactor effluent water before return to the Columbia River.

DIMENSIONS: 250 ft diameter x 25 ft deep

DESCRIPTION: Three steel tanks, each of 8.4 million gal capacity, built on a reinforced concrete base.

APPURTENANCES: Outfall system to river. Crib system.

STATUS: In use.

1. 143

100 Area
115-KE Building

NUMBER: 115-KE

NAME: Gas Recirculation

PURPOSE: Houses gas circulating pumps and associated equipment for reactor gas coolant system.

DIMENSIONS: 113.5 x 34 ft; 3880 ft² total area

DESCRIPTION: A single-story reinforced concrete structure with reinforced concrete foundation and floor, corrugated transite slab roof with built-up asphalt and gravel. The building contains circulating gas blowers, gas dryers, filters, heat exchangers, and related instruments and piping.

APPURTENANCES: A 54 x 24 ft reinforced concrete building, the 110-KW Building, for gas storage.

STATUS: In use.

1.144

100 Area
117-KE Building

NUMBER: 117-KE

NAME: Filter Building

DESCRIPTION: Identical with 117-B Building.

STATUS: In use.

1.145

100 Area
165-KE Building

NUMBER: 165-KE

NAME: Power Control Building

PURPOSE: Provide housing for power house, control room, valve pit, and electrical switchgear for water supply system.

DIMENSIONS: 240 x 110 x 15 ft
Office: 540 ft²
Work Area: 42,560 ft²
Common: 9700 ft²

DESCRIPTION: A single-story concrete structure with reinforced concrete floors, walls, and poured roof with built-up asphalt and gravel surfacing.

The building consists of three parts: The pump room and valve pit with steel grating floor providing work area; the electrical area consisting of two concrete floors; the oil fired steam plant; and control room.

APPURTENANCES: Adjacent 230 kv switchyard. Subsurface oil storage bunkers and oil pump facilities, 166-KE.

STATUS: In use.

REFERENCE DRAWING: H-1-20869

1.146

100 Area
181-KE Building

NUMBER: 181-KE

NAME: River Pump Station

PURPOSE: Provide facilities for transfer of water from Columbia River to filter plant.

DESCRIPTION: This facility is an open air, reinforced concrete pad about 62 x 72 ft at ground level with subsurface pump wells. Electrically driven deep well pumps are mounted on the pad and are controlled remotely from the 165-KE Building control room.

APPURTENANCES: Small Guard Station mounted on top of 181-KE facility, 1605-KE Building.

STATUS: In use.

REFERENCE DRAWING: H-1-24472

NUMBER: 183.1-KE

NAME: Head House and Chlorine Building

PURPOSE: Water Treatment

DIMENSIONS: Head House: 136 x 31 x 20 ft high; 70 x 60 x 20 ft high
Chlorine Building: 95 x 35 ft
Office: 180 ft² Storage: 4760 ft²
Work Area: 37, 930 ft² Common: 640 ft²
Laboratory: 800 ft²

DESCRIPTION: The head house is a single-story, "T" shaped structure with reinforced concrete foundation and floor, structural steel frame walls with corrugated transite siding, transite roof with built-up asphalt and gravel surfacing. The facility contains a laboratory and sample room, chlorinator room, switch gear room and operational area housing chemical feed equipment, storage tanks, water softeners, heat exchangers, pumps, etc.

The chlorine building is a reinforced concrete building with two railroad spurs entering the building.

APPURTENANCES: 183.2-KE: Flocculation and subsidence basins consisting of open air-reinforced concrete basins, mixing chambers, agitators, flumes, etc. Total area of this facility is about 288,000 ft².

183.3-KE: A reinforced concrete basin containing about 65,000 ft² of filter area.

183.4-KE: Two 9 million gal enclosed reservoirs.

183.5- and 183.6-KE: Two 925 ft² "feeder" buildings. Cross-tie to KW area.

STATUS: In use.

REFERENCE DRAWING: H-1-23824

(See Figure A-4, Page 1.177.)

1.148

100 Area
190-KE Building

NUMBER: 190-KE

NAME: Main Pump House

PURPOSE: Provide primary coolant for KE-Reactor.

DIMENSIONS: 142.5 x 182.5 x 30 ft high; 26,000 ft² total area

Work Area: 47,510 ft²

Common: 120 ft²

DESCRIPTION: A single-story building with concrete basement, reinforced concrete floors, and structural steel and corrugated transite walls. Roof is corrugated cement transite on steel girders with 2 in. foam glass insulation and asphalt-gravel built-up surface.

The building houses process and service water pumps and ventilation equipment.

APPURTENANCES: One 15 ton and one 25 ton bridge crane with, respectively, 45 ft and 75 ft bridges.

STATUS: In use.

REFERENCE DRAWING: H-1-20607

1.149

100 Area
1702-KE Building

NUMBER: 1702-KE

NAME: 105 Area Badge House

DESCRIPTION: Similar to 1702-B.

STATUS: In use.

1. 150

100 Area
1706-KE Building
1706-KER Building

NUMBER: 1706-KE
1706-KER

NAME: Testing Facilities

PURPOSE: Provide out-of-reactor facilities in support of in-reactor test loops and single-pass tubes.

DIMENSIONS: 1706-KE: 56 x 100 ft
1706-KER: 27 x 80 ft above grade; 66 x 80 ft below grade
Office: 250 ft² Laboratory: 13,140 ft²
Work Area: 1640 ft² Common: 110 ft²

DESCRIPTION: The 1706-KE and 1706-KER Buildings are separate structures south of the 105-KE Reactor. They are both single story concrete and steel frame structures with corrugated transite siding, concrete floors, and flat roof with built-up asphalt and gravel surfacing over cement board and 1/4 in. steel plate.

The 1706-KE Building has a full basement with half subbasement. It provides water treatment facilities and instrumented supply systems for eight KE-Reactor tubes used for studies of corrosion and effects of water treatment parameters on effluent activity.

The 1706-KER Building contains four shielded cells below grade, each housing the water treatment, heat exchange, pumping, and remote instrument equipment for each of the four in-reactor loops. These loops are capable of operation to 285 C at 1600 psig. Loop materials are Zircaloy-2 and carbon steel or Zircaloy-2 and stainless steel with in-reactor portions to 2.7 in. ID.

In addition to the above in-reactor facilities, extensive out-of-reactor facilities exist which include several carbon steel loops, single pass corrosion test loops, and a supercritical loop.

APPURTENANCES: The 1706-KEL Laboratory, a 2700 ft² building adjoining the 1706-KER Building. About half of this facility is used for instrument development pertinent to water treatment and corrosion control. The remaining part is outfitted for handling corrosion coupons that may be mildly contaminated.

STATUS: Currently in use. However, projected use of the KER loops does not extend beyond 1964.

REFERENCE DRAWINGS: KE, H-1-24145; KER, H-1-20366

1.151

100 Area
1713-KE Building

NUMBER: 1713-KE

NAME: Shop Building

DIMENSIONS: 20 x 40 ft

DESCRIPTION: Sheetmetal "Butler" building with concrete floor and footing.

STATUS: In use, primarily for storage.

1.152

100 Area
1713-KER Building

NUMBER: 1713-KER

NAME: Warehouse

DESCRIPTION: Identical with 1713-KE Building.

STATUS: In use.

1.153

100 Area
105-KW Building

NUMBER: 105-KW

NAME: Reactor Building

DESCRIPTION: Almost identical with 105 KE. Differs somewhat in test facilities.

STATUS: In use.

(See Figures A-1, 2 and 3, Pages 1.175 and 1.176.)

1.154

100 Area
107-KW Building

NUMBER: 107-KW

NAME: Effluent Water Retention Basin

DESCRIPTION: Identical with 107-KE Building.

STATUS: In use.

1.155

100 Area
115-KW Building

NUMBER: 115-KW

NAME: Gas Recirculation

DESCRIPTION: Identical with 115-KE Building.

STATUS: In use.

1. 156

100 Area
117-KW Building

NUMBER: 117-KW

NAME: Filter Building

DESCRIPTION: Identical with 117-B Building.

STATUS: In use.

1. 157

100 Area
165-KW Building

NUMBER: 165-KW

NAME: Power Control Building

DESCRIPTION: Identical with 165-KE Building.

STATUS: In use.

18158

100 Area
181-KW Building

NUMBER: 181-KW

NAME: River Pump Station

DESCRIPTION: Identical with 181-KE Building.

STATUS: In use.

1.159

100 Area
183.1-KW Building

NUMBER: 183.1-KW

NAME: Head House and Chlorine Building

DESCRIPTION: Identical with 183.1-KE Building.

STATUS: In use.

(See Figure A-4, Page 1.177.)

19160

100 Area
190-KW Building

NUMBER: 190-KW

NAME: Main Pump House

DESCRIPTION: Identical with 190-KE Building.

STATUS: In use.

1. 161

100 Area
1702-KW Building

NUMBER: 1702-KW

NAME: Exclusion Area Badge House

DESCRIPTION: Identical with 1702-KE Building.

STATUS: In use.

1.162

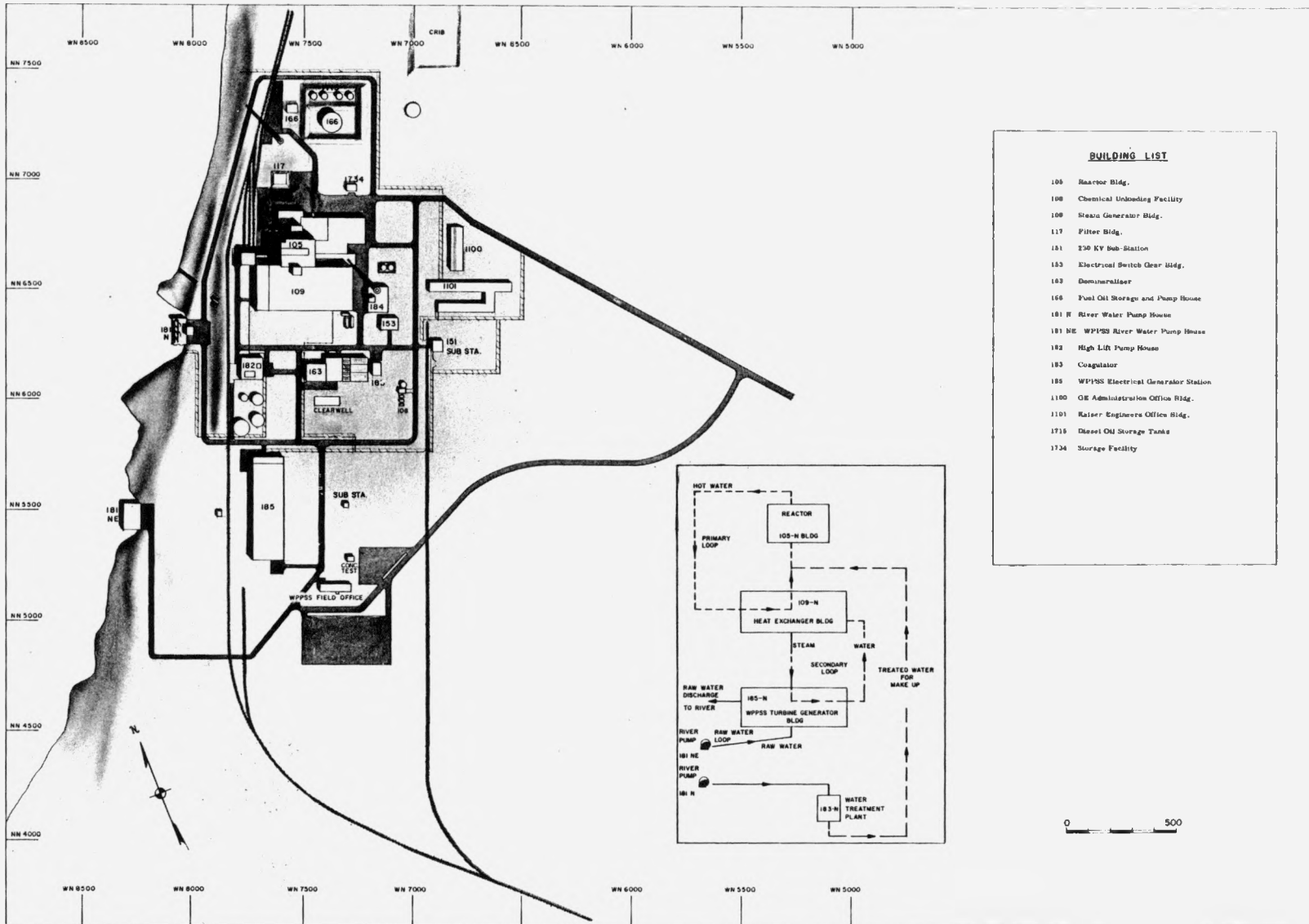
100 Area
1713-KW Building

NUMBER: 1713-KW

NAME: Warehouse

DESCRIPTION: Identical with 1713-KE Building

STATUS: In use.



0 500

100-N AREA

NUMBER: 105-N

NAME: Reactor Building

PURPOSE: Houses N-Reactor and certain auxiliary equipment

DIMENSIONS: 452 x 259 ft with stepped roof to 70 ft; 183 x 70 ft basin and transfer area extend west at southwest corner.

29 Offices: 5030 ft²

4 Shops: 10,870 ft²

Storage: 3180 ft²

Common: 5030 ft²

Process, Operating
and Fuel Storage: 140,000 ft²

DESCRIPTION: The 105-N Building is a reinforced concrete and structural steel building with channeled steel siding. The reactor is contained within a reinforced concrete enclosure which serves as a confinement zone capable of withstanding moderate overpressures. This enclosure also contains the control rod systems, inlet and outlet pipe galleries, exhaust fans, elevators for servicing the front and rear faces, a gallery beneath the reactor for various monitoring purposes, and receiving basin for spent fuel elements. Surrounding the reactor enclosure on three sides are rooms housing auxiliary facilities and supporting services. These include offices, common facilities, the main control room, electrical control rooms, shop area, ventilation supply rooms, gas dryer and cooler rooms, instrumentation rooms, metal preparation and storage facilities, spent fuel storage, examination facility, and transfer area.

On the fourth side of the confinement enclosure, to the rear of the reactor, is the 109-N Heat Exchange Building which shares a common wall with the 105-N Building.

As in the other reactor buildings a zoned ventilation system is provided so that air flow is maintained in the direction of areas having the greatest potential risk of contamination. The control room has its own refrigerated air conditioning system.

APPURTENANCES: 1734-N Building: a 900 ft² structure for storage of gas bottles.

117-N Filter Building and Stack: for discharge of reactor ventilation air. The 117-N Building is a 4290 ft² structure similar in construction and function to the other 117 Buildings.

A 900,000 gal chemical waste storage tank for decontamination solutions, crib, and tile field.

1.164

100 Area
105-N Building

A three track railroad spur enters the irradiated fuel storage and transfer wing.

STATUS: Currently used as production only system but will supply steam for 800,000 kilowatt Washington Public Power Supply System generating station.

REFERENCE DRAWINGS: 105-N, H-1-27601 through H-1-27615
117-N, H 01-28401 and H 01-28402

NUMBER: 109-N

NAME: Heat Exchange Building

PURPOSE: Provides means for dissipation of reactor process heat.

DIMENSIONS: 206 x 383 x 39 ft high

3 Offices: 810 ft²

2 Shops: 2130 ft²

Common: 1200 ft²

Processing Area: 123,000 ft²

DESCRIPTION: The 109-N Building is a reinforced concrete, structural steel building with channeled steel siding. It is immediately adjacent to and shares a common wall with the south wall of the 105-N Building.

The 109-N Building contains a large pipe gallery on the north side which receives the primary reactor coolant system piping from the reactor for distribution into five separate cells each housing two large heat exchangers, a primary circulating pump and associated piping. A sixth cell contains a heat exchanger system for the moderator cooling system. The pipe gallery and steam generator cells are located in a reinforced concrete enclosure which, as in the case of the reactor, defines a confinement zone.

Located outside of the confinement zone are the pump drive systems, dump condensers for disposal of export steam, condensate return pumps, other auxiliary equipment, a small chemical laboratory, and water sampling and monitoring facilities. A Service Bay has facilities for decontaminating the primary coolant system and contains the heating and ventilation equipment, shop areas, office and common space.

APPURTENANCES: A dump tank for emergency discharge of primary coolant is located west of the 109-N Building.

Sealwell and outfall system to return condenser cooling and condensate water to the Columbia River.

STATUS: Currently used to dissipate reactor heat to the Columbia River until such time as the WPPSS generating system becomes operative.

REFERENCE DRAWINGS: H-1-30741 through H-1-30747

NUMBER: 163-N

NAME: Demineralization Plant

PURPOSE: Provides demineralized water for reactor primary coolant system.

DIMENSIONS: 82 x 78 ft x 40 ft high

Office: 540 ft²

Shop: 540 ft²

Common: 510 ft²

Process, Laboratory, and Other: 10,475 ft²

DESCRIPTION: The 163-N Building is of typical reinforced concrete and structural steel construction. It is immediately west of the 183-N Building, with which it shares a common wall. The 163-N Building contains equipment for demineralizing filtered and treated water, degassing it, and pumping it to a 1 million gal demineralized water storage tank. The plant also contains auxiliary equipment for regeneration of the ion exchange resin demineralizing agent, chemical storage, a water control laboratory, and control systems for both the 163-N and 183-N Buildings.

STATUS: In use.

REFERENCE DRAWINGS: H-01-31150

1.167

100 Area
166-N Building

NUMBER: 166-N

NAME: Fuel Oil Storage Tank

DESCRIPTION: A 1,375,000 gal tank for storage of fuel oil used in the 184-N Building. The 166-N Building is immediately adjacent to the 1715-N Building.

APPURTENANCES: A small pump house for transferring fuel oil to the day storage tank and from the fuel unloading site is located west of the storage area.

STATUS: In use.

REFERENCE DRAWING: H-01-29305

1.168

100 Area
181-N Building

NUMBER: 181-N

NAME: River Pump House

PURPOSE: Provides raw Columbia River water to the 183-N Water Treatment Plant.

DESCRIPTION: The river pumphouse is a reinforced concrete structure which supports six remotely operated, vertical deepwell pumps with submerged bowls and impellers. Four of the pumps are electrically driven and are intended for normal service. The remaining two, for emergency use, are powered by diesel engines. The electrically driven pump motors are not enclosed; however, a small structure of about 270 ft² area houses the diesel engines and certain controls and instrumentation.

STATUS: In use.

REFERENCE DRAWINGS: H-01-31200, H-01-31201.

NUMBER: 182-N

NAME: High-Lift Pump House

PURPOSE: Provides cooling water for 105-N and 109-N systems.

DIMENSIONS: 107 x 97 ft x 20 ft

Office: 110 ft²

Shop: 520 ft²

Common: 350 ft²

Process Area: 9130 ft²

DESCRIPTION: The 182-N Building is a reinforced concrete and structural steel structure with channeled steel walls. The building houses pumps for injecting demineralized water into the primary and secondary cooling systems and pumps for supplying cooling water to the rupture monitor and moderator cooling systems. The 182-N Building also houses diesel driven emergency water pumps for various applications, the potable water supply tank, fire supply system, air compressors, and receivers.

APPURTENANCES: One million gallon demineralized water storage tank; 800,000 gal filtered water storage tank; 200,000 gal emergency raw water tank; and 500,000 gal "after-heat-removal" tank for supplying water to steam generators during reactor shutdown.

STATUS: In use.

1.170

100 Area
183-N Building

NUMBER: 183-N

NAME: Filter Plant

PURPOSE: Provides treated and filtered water for process applications.

DIMENSIONS: 102 x 84 ft x 20 ft high
Process Area: 12,000 ft²

DESCRIPTION: The 183-N filter plant consists of a chemical treatment facility, flocculation basins, and filter system which utilizes a process similar to that used in the other Hanford reactors. Water from the filters flows by gravity to a 400,000 gal clearwell from which it is transferred to the filtered water storage tank near the 182-N pumping building.

APPURTENANCES: A chemical unloading station, the 108-N facility is located east of the 183-N Building. This facility consists of a 900 ft² chemical pumping building and storage tanks and bunkers for materials used in the water treatment and demineralizing process; e.g., sulfuric acid, sodium hydroxide, etc.

STATUS: In use.

REFERENCE DRAWINGS: 183-N, H-01-31159 through H-01-31161
108-N, H-01-31320

1.171

100 Area
184-N Building

NUMBER: 184-N

NAME: Power House

PURPOSE: Provides electrical power for routine and emergency use and process steam.

DIMENSIONS: 112 x 96 ft x 70 ft high

2 Offices: 275 ft²

Common: 490 ft²

Process Area: 9100 ft²

DESCRIPTION: The 184-N Building is a reinforced concrete and structural steel building with channeled steel siding. It houses a 15,000 kw turbine generator which is either driven by reactor generated steam or by its own oil fired 575,000 Btu/hr boiler.

The building also contains associated equipment, air compressors, and compressed air receivers.

APPURTENANCES: A fuel oil day storage facility providing for routine operation only--two 35,000 gal tanks.

STATUS: In use.

REFERENCE DRAWINGS: H-01-31050 through H-01-31053.

1. 172

100 Area
1100-N Building

NUMBER: 1100-N

NAME: Office Building

PURPOSE: Provides office space for area administrative and technical personnel.

DIMENSIONS: 199 x 35 ft x 28 ft high
55 Offices: 14,330 ft²
Conference-Lunchroom: 800 ft²
Common: 3220 ft²

DESCRIPTION: A two-story frame structure on concrete foundation and floor. This building is a barracks type structure and is of semi-permanent nature.

STATUS: In use. May be improved or replaced within the next few years.

1. 173

100 Area
1101-N Building

NUMBER: 1101-N

NAME: Office Building

PURPOSE: Provides office space for our administrative and technical personnel.

DIMENSIONS: Two wings: one 400 x 40 x 20 ft; one 290 x 40 x 20 ft
83 Offices: 23,875 ft²
Conference-Lunchroom: 820 ft²
Common: 2030 ft²

DESCRIPTION: A single-story frame structure on concrete foundation and floor. Semi-permanent construction. Originally used as an office building by the construction contractor during the area construction period. Building is "h-shaped."

STATUS: In use. May be replaced or modified within the next few years.

1.174

100 Area
1715-N Building

NUMBER: 1715-N

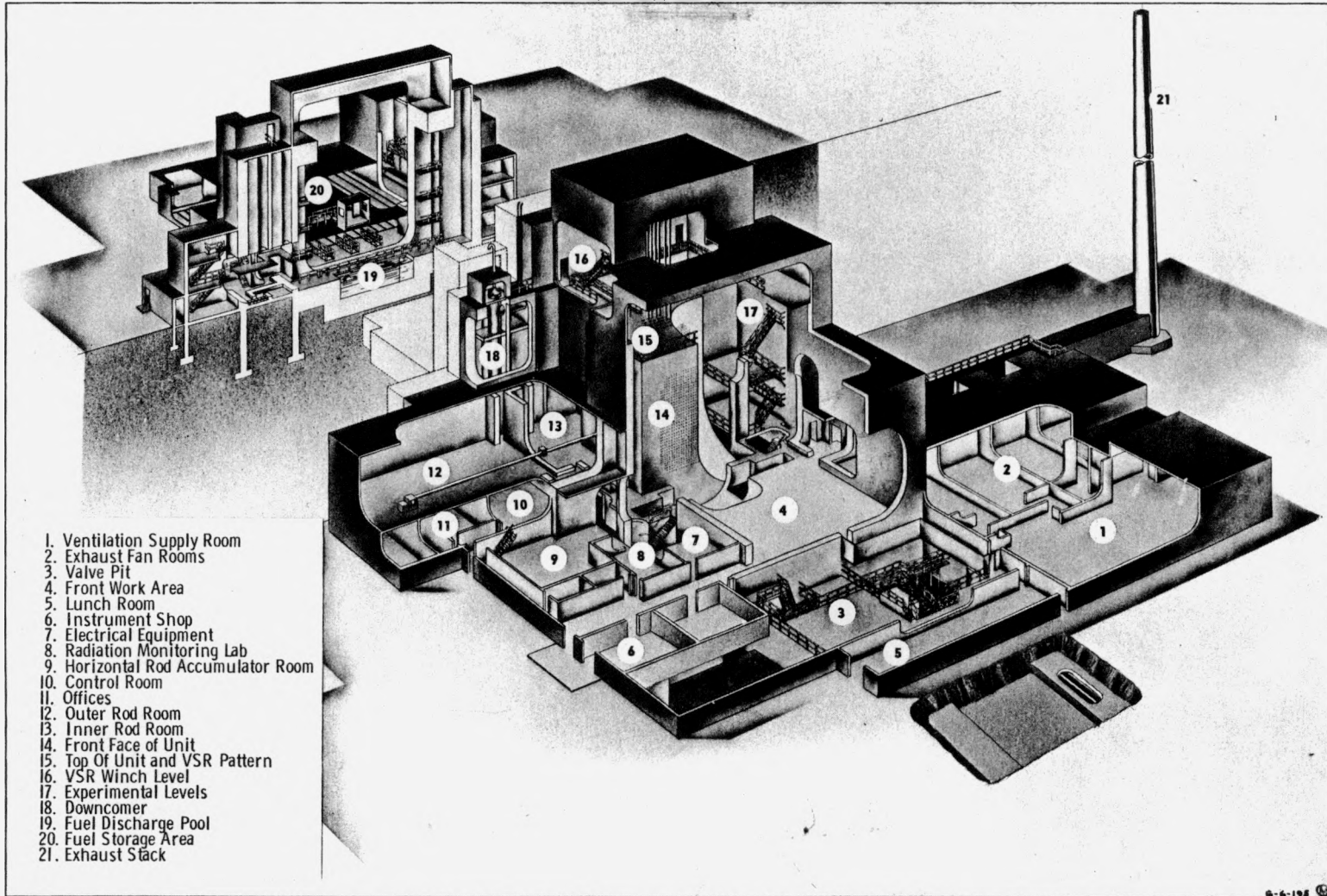
NAME: Diesel Oil Storage Tank

DESCRIPTION: Four 105,000 gal tanks for storage of diesel oil used in emergency pumping systems. The tanks are enclosed by a concrete wall sufficiently high to contain the tanks' contents. The 1715-N facility is immediately adjacent to the 166-N fuel oil storage tank.

STATUS: In use.

APPENDIX A

SELECTED BUILDING PHOTOGRAPHS



1. 175

FIGURE A-1
 Cutaway of Typical Reactor Building

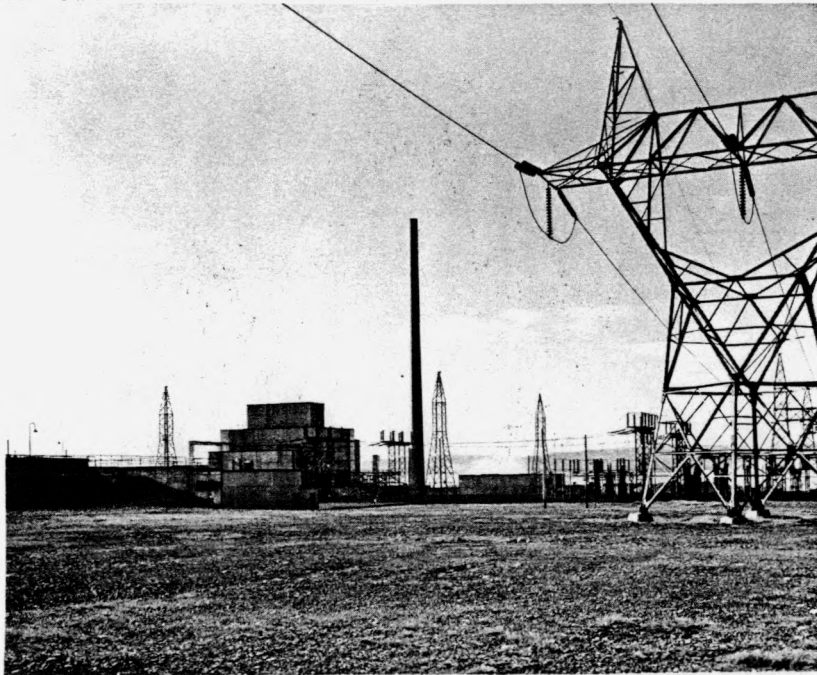


FIGURE A-2
Typical Reactor

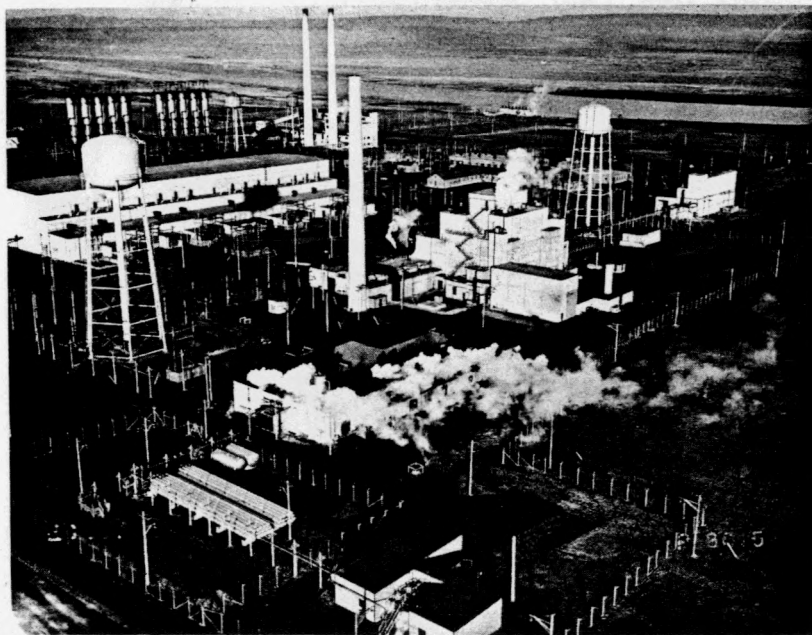


FIGURE A-3
Typical Reactor Site
(Pump house, power house, reactor building, water treatment, etc.)

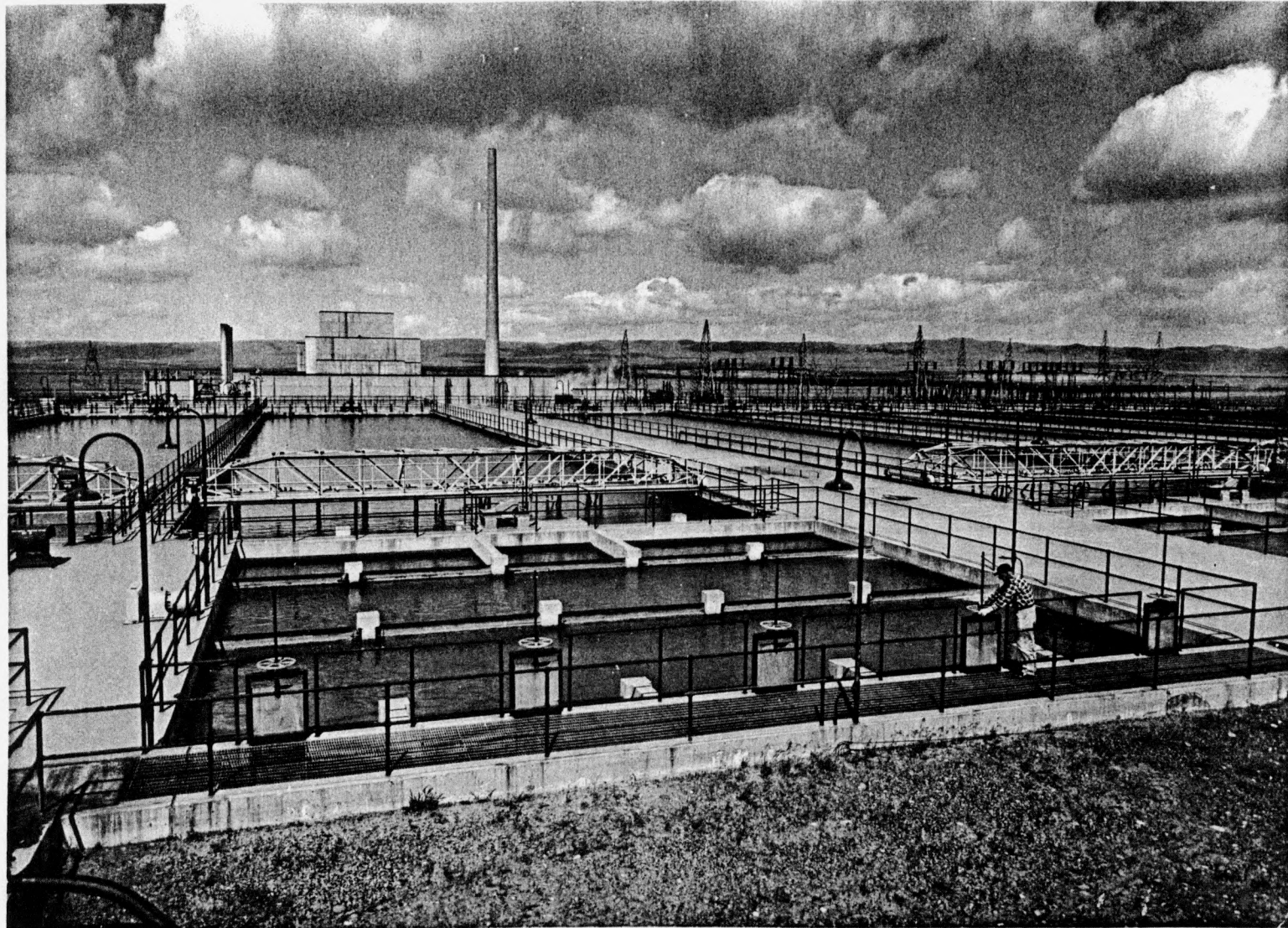
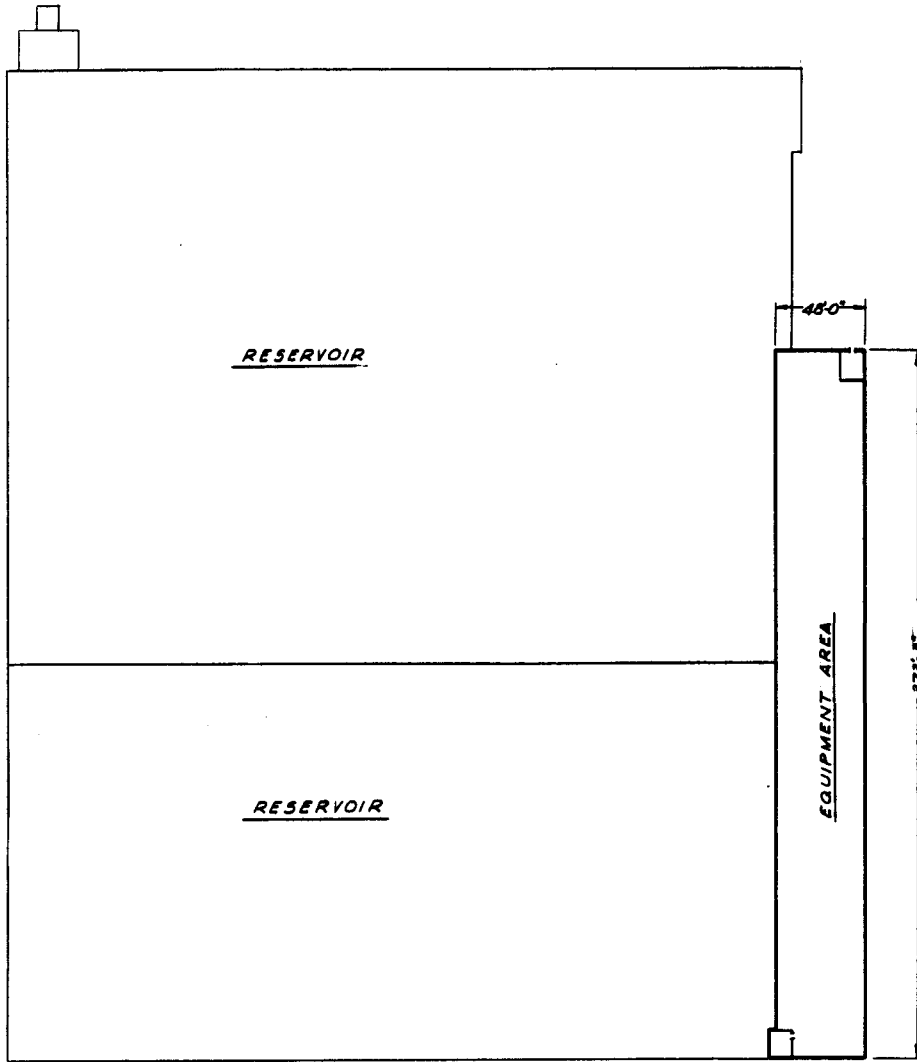


FIGURE A-4
Typical Water Treatment System with Reactor in Background

APPENDIX B

SELECTED BUILDING FLOOR PLANS

1.178



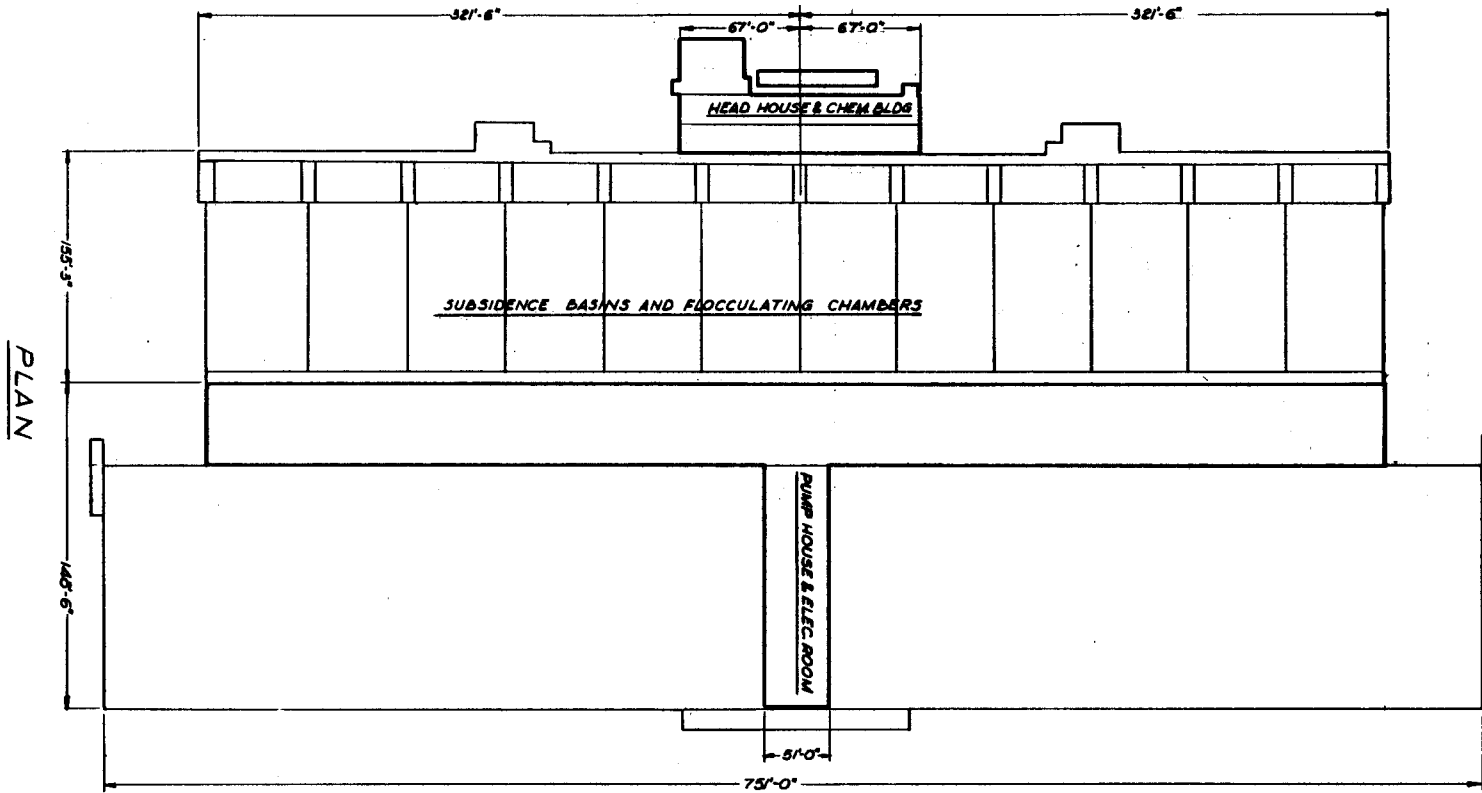
PLAN

182 BLDG

SCALE: 0 10 20 30 40 FT

FIGURE B-1

Reservoir and Pump House, 182-B, D, F, and H

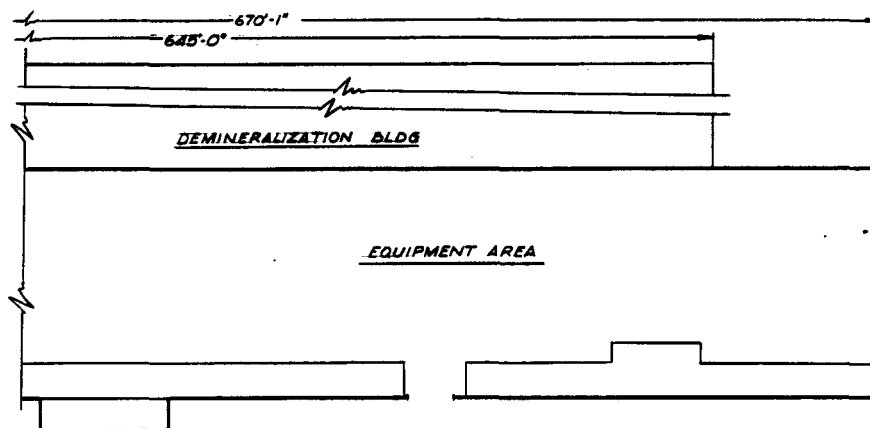
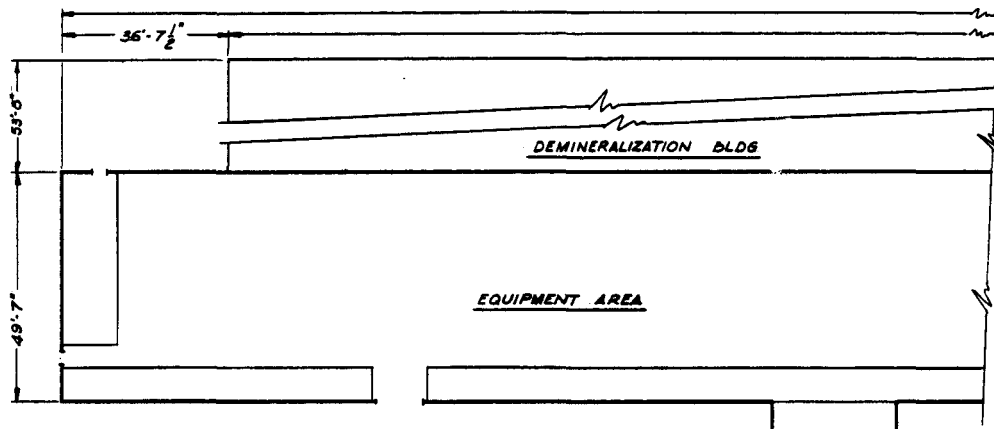


1.179

183 BLDG
SCALE: 0 20 40 FT

FIGURE B-2
Filter Building, 183-B, C, D, DR, F, and H

1. 180



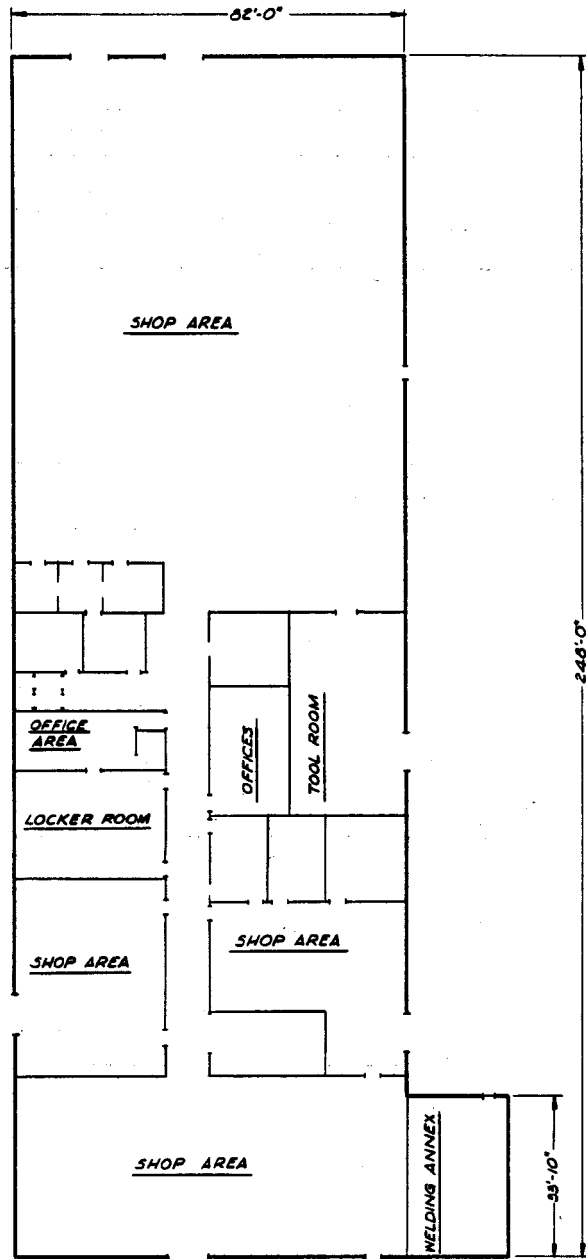
FLOOR PLAN

186 BLDG

SCALE: 0 4 8 12 16 FT

FIGURE B-3
Water Treatment Building, 186-D

1. 181



FLOOR PLAN

1717-H BLDG

SCALE: 0 4 8 12 16 FT

FIGURE B-4

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