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HAN-41652

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ATOMIC ENERGY COMMISSION
Hanford Operations Office
"CONSTRUCTION" BOOK

HAN-41652

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ATOMIC ENERGY COMMISSION HANFORD OPERATIONS OFFICE

"CONSTRUCTION" BOOK

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U. S. ATOMIC ENERGY COMMISSION
HANFORD OPERATIONS OFFICE

CONSTRUCTION PROJECTS OVER \$100,000 COMPLETED AS OF 6-30-51FISSIONABLE MATERIALS

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Directive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>PILE AREA PROJECTS</u>					
100-DR Water Works	Design and construction of a water treatment plant located south of and adjacent to the 100D water plant.	14,564,585		7-12-49	11-30-50
Replace Process Tube Nozzles 105B,D,F, & DR	Replacement of process tube nozzles, step plugs, and gaskets.	386,970	775,000	3-26-50	2-28-51
<u>SEPARATIONS AREA PROJECTS</u>					
Install. of Evaporative Equipment - 1st Cycle & Other Waste - 200W	Design and construction of one distillation unit in 200W with facilities for removal and transfer of wastes.	496,953	489,000	9-11-50	5-17-51
<u>METALS AREA PROJECTS</u>					
Ventilation Control of Airborne Contamination, Bldgs. 313 & 314, Experimental	Construction of facilities for control of airborne contamination in Bldgs. 313 & 314 where slug preparation work is done.	184,183	540,000	8-14-48	6-30-51
<u>P-10 PROJECTS</u>					
P-10-A Expansion	Alterations to and removal of equipment from the 108B Bldg. to allow for an expanded P-10 Program.	217,232	300,000	3-5-50	1-31-51
<u>MISC. SHOPS, LABORATORIES & OFFICE BLDGS.</u>					
Security Fences - All Areas	Replacement of existing security fences of wooden posts and woven wire with 42,000 ft. of chain link fence on	368,807	246,800	1-4-49	6-30-51

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CONSTRUCTION PROJECTS OVER \$100,000 COMPLETED AS OF 6-30-51

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Directive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>TRANSPORTATION PROJECTS</u>					
Railroad Connection of Richland	South Construction of single track railroad extension from point of connection with plant railroad to Union Pacific main line. Also includes steel span overcrossings & trestle approaches over Hwy. 410 & Yakima R. <u>ELECTRICAL PROJECTS</u>	1,916,569		8-11-48	7-14-50
Conversion to Automatic Dial System - Richland	Install a 4,000 line dial exchange in Richland.	473,348	470,500	11-6-48	8-31-50
Overall Plant Telephone System	Construct a new telephone exchange building in the 300 Area with 300 additional lines and expand the telephone system throughout the plant.	1,470,093	1,232,000	4-1-48	2-1-51
Misc. Projects Under \$100,000		505,539			
234-5 Product Metallurgy Plant, Phases II & III	Completion of laboratories and installation of remote mechanical line.	4,934,860	\$6,255,000	12-15-49	6-30-51
Misc. Projects Under \$100,000		91,972			
<u>MUNICIPAL FACILITIES</u>					
Swimming Pool - Columbia Playfield	Construction of 200 x 75 ft. swimming pool and bathhouse.	**100,462	50,000	10-19-50	6-8-51
<u>UTILITIES FACILITIES</u>					
Benton-Richland 115 KV Power Line	Construction of 12 miles of 115 KV transmission line from the Midway - Walla Walla line to Richland with	1,448,098	913,000	7-20-48	10-28-50

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U. S. ATOMIC ENERGY COMMISSION HANFORD OPERATIONS OFFICE

CONSTRUCTION PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-51

FISSIONABLE MATERIALS

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Directive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
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SEPARATIONS PROCESS PROJECTS

Acid Dispensing System - Bldgs. 222 T & B	Provide dispensing system for nitric and sulfuric acids.	9,815	9,000	4-7-50	
Settling Tanks for Section 5 Wastes - Bldgs. 222 T&B	Revision of drainage system for cell drainage wastes. Latter will combine with second cycle wastes, permitting solids to settle before discharge into cribs.	16,672	35,000	3-20-51	6-29-51
Complete Parallel Opera- tions for 200 T & B Plants	Installation of equipment and services to accomplish dual supply of precipitated solutions to Section 19 - 221 T & B.	34,788	67,880	8-15-50	11-30-50
Rearrangement of F-Cell Equipment 224 T & B	Installation of modifications to "F" cell equipment to permit simultaneous centrifuge operation.	21,014	30,000	7-6-50	11-30-50
Conductivity Meters for F-Cell Drains, Bldgs. 221 T & B	Fabrication and installation of wire conductivity meters with remote control installation and other associated features.	12,613	21,700	11-22-50	4-10-51
Additional Waste Storage Facilities - 200E	Construction of six underground steel lined concrete waste storage tank, each having a capacity of 758,000 gallons.	27,293	75,000	Cancelled	

P-10 PROJECTS

P-10-B Cold Facilities	Portion of second floor of 108B Bldg. partitioned off to provide space for cold experimental facilities.	86,720	95,000	2-5-50	12-29-50
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CONSTRUCTION PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-51

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Directive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
	<u>MISC. SHOPS, LABORATORIES & OFFICES (Cont'd.)</u>				
<u>200 Area (Cont'd.)</u>					
Construction and Installation of Fission Counter - 222 T	Installation and construction of analytical equipment in laboratory 222T to determine composition of isotopes.	12,254		2-50	6-23-50
Install Laboratory Equipment, 271 T & B	Installation of two hoods & nine pieces of laboratory furniture in lab. rooms of Bldgs. 271 T&B. Reconnection of existing utilities & rearrangement of lighting fixture and service outlets.	9,963		5-4-50	10-13-50
<u>700 Area & Other</u>					
Alterations to 722-A Bldg.	Remodeling 722-A, General Maint. Shop, Bldg. to provide suitable office & machine space for the Manufacturing Accounting Div.	18,104		7-11-50	8-18-50
<u>Construction</u>					
Warehouse for Automotive & Heavy Equipment Parts - White Bluffs	Construction of a warehouse for automotive and heavy equipment parts at White Bluffs.	7,964	11,290	8-50	1-11-51
Pipe Shop Alterations - White Bluffs	Installation of 4 monorails, placement of concrete slab for one monorail and removal of wooden tower outside the pipe shop.	5,299		5-50	6-16-50
Addition to Existing Fire Station - North Richland	Installation of 20'x18' hutment adjacent to fire station for sleeping quarters & construction of corridor connecting hutment with apparatus floor.	3,905		9-24-49	7-6-50
<u>H.I. Instruments</u>					
H.I. Operation Division - Survey Instruments	Procurement, fabrication and assembly of parts for additional health monitoring instruments.	64,689	85,000	7-17-49	1-15-51

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CONSTRUCTION PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-51

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Directive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>ELECTRICAL PROJECTS (Cont'd.)</u>					
Miso. Service Additions - Process Areas, Elect. Distr. System	FY 1951 costs for installation of miso. electrical distribution service additions in the process areas.	27,015		7-1-50	6-30-51
Add'l. Telephone Service Extensions - Process Areas	FY 1951 costs for installation of miso. telephone service additions in the process areas.	15,061		7-1-50	6-30-51
Auxiliary Hood Enclosure for Part I, Bldg. 234-5	Design, construction and installation of a ventilated hood and a sampling system; extension of valve controls and chemical lines.	33,546	49,000	9-6-50	4-4-51
Loading Facilities for Recycled Materials, Bldg. 234-5	Provide facilities consisting of a monorail, hoist, loading hood recycle cans and other equipment in Bldg. 222T.	24,633	19,000	9-17-50	4-1-51
Auxiliary Ventilation for Dry Box Hoods, Bldg. 234-5	Revise ventilation system in order to minimize health hazards which occur during maintenance operations on this equipment.	11,518	49,000	12-4-50	3-21-51
Add'l. Unit to Supplement Operation of Hood 25 - Bldg. 234-5	Changes and additions to process hoods #25 and #26 to permit additional capacity.	22,275	25,500	9-6-50	2-16-51
<u>IND MEDICINE</u>					
Underground Geological and Hydrological Investigation Program	This work comprises geologic mapping and interpretation and the exploratory drilling of 10 test wells and geologic investigation.	38,996	150,000	3-2-50	6-30-51

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CONSTRUCTION PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-51

Title	Description	Total Cost	First Directive Amount	Construction Starting Date	Construction Completion Date
<u>MUNICIPAL FACILITIES</u>					
Installation of Irrigation Laterals with Sprinkler Units to Complete Irrigation Systems - Carmichael & Spalding	Supplement presently authorized mains with facilities to provide snap-on and pop-up systems for 36 acres.	41,422	63,400	7-21-50	Spalding 11-14-50 Carmichael 5-11-51
Levee Irrigation - Newton Street to Gowen Avenue	Install underground pop-up irrigation sys. on grassed levee from Newton Street north to drainage ditch, approx. 200' south of Gowen Avenue.	7,010	7,600	11-24-50	1-23-51
Grass Seeding - Marcus Whitman School and Frankfort Playground	Top soiling, grading, fertilizing & grass seeding five acres of Marcus Whitman School playground area and $\frac{3}{4}$ acres of Frankfort playground.	7,292	7,100	11-1-50	6-30-51
Parking Lot - Columbia Playfield	Construction of parking lot for 272 cars south of baseball stands consisting of 4" base course double shot and cover, and asphalt, with curbs & gutters and walks between lanes.	19,973	17,500	9-11-50	5-15-51
Automatic Traffic Signals	Installation of 13 automatic traffic signals.	19,293	19,900	10-10-50	1-12-51
* Work authorized & installation accomplished under IR-33.					
Duane Avenue Improvement	Increase width of Duane Ave. from 27' to 36' from by-pass highway to Gillespie, 5,035 lineal feet. Resurface with asphalt and provide drainage and catch basins.	88,720	70,500	9-11-50	12-13-50
Casey Street Improvement	Construct 5,200 lineal feet of concrete curb and gutter; 2,600 lineal feet reggrading and resurfacing and 4 ft. concrete sidewalk; and 1,650 lineal feet of storm drain sewers.	67,283	58,300	9-11-50	12-8-50

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CONSTRUCTION PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-51

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Directive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>MUNICIPAL FACILITIES (Cont'd.)</u>					
Expansion of Parking Areas	Grading & oiling of parking space north of Swift and west of Gilmore.	2,528		5-5-51	5-10-51
Library Building - Richland	Alterations to the building formerly occupied by Richland Motors for use as a community library building.	97,986	88,000	9-5-50	4-5-51
<u>UTILITIES FACILITIES</u>					
Fencing - Water Reservoirs	Construct 5,200 lineal feet of 6' stack fence around two water recharge basins and install ten foot access gate in fence at each basin.	7,585			
Alterations & Additions - Bldg. 1182	Add 2 office rooms, convert boiler room to a rest room & other minor alterations to Bldg. 1182, a field headquarters for operation & maintenance of the Richland water supply.	4,714			
Extend Water & Sewer to Tract Houses	Extend the municipal water system to 11 tract houses and deepen the wells at 8 other tract houses.	4,919	7,400	not determined	4-19-49
Extend Water, Sewer & Elec. Lines to Churches	Extend utilities to approved sites for churches.	7,148		not determined	6-30-51
Electricity Metering - Richland Schools	Installation of electricity meters in Richland school buildings.	3,526			
Miso. Service Additions - Richland Elec. Distr. System (1951)	Installation of those miscellaneous changes in the electrical distribution system which are required because of changes in consumer demand during FY 1951.	54,066	85,000	7-1-50	
Add'l. Customer Service Extensions - Richland	Installation of miscellaneous service additions during FY 1951.	32,487	46,000	7-1-50	

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U. S. ARMED FORCES COMMISSION
NATURAL SCIENCE OFFICE

CONSTRUCTION PROGRAM OVER \$100,000 COMPLETED AS OF 6-30-52

Table	Description	Total Cost	Plant Investment Amount	Construction Starting Date	Construction Completion Date
<u>PILE AREA PROJECTS</u>					
Construction of 100 HR	Construction of 105 HR Building.	30,912,978	30,700,000	12-2-47	4-6-49
2000 sq ft Line 1057 to 777 Buildings	125 0.2. pipe line, diversion bay, collecting system, and replacement of section of tile field.	299,095	287,000	4-13-48	3-4-49
Vertical Rod Replacement	Replace rods and gaskets with stainless steel and chromium plated carbon steel assemblies of fundamentally the same design.	199,354	200,600	12-13-48	2-10-50
Gold & Gold Representative Pile (P-12)	Three small non-chain reacting piles for conduct of basic research exper- iments in pile design problems.	142,803	392,000	1-3-50	Transferred to Res. & Develop. Program
<u>RESEARCH AREA PROJECTS</u>					
1001 Waste Storage - 1001 (2112)	16 tanks and necessary diversion lines and pipe lines.	5,856,727	4,000,000	6-30-47	8-30-49
Waste Scale-Up and Construction Units	Construction of waste scale-up and construction units. Modify 300 B4g. for installation of experimental equipment, construction of waste disposal cells, and storage facilities.	919,278	A - 198,000 B - 740,000	8-29-47	12-30-48
Waste Test Plant (Cancelled)	Waste test area consisting of a test plant including and an analytical and plant analytical laboratory with auxiliary facilities.	5,780,025	13,100,000 (Cancelled; Mr. Ed. to 5,000,000)	1-6-49	Cancelled 4-4-49

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CONSTRUCTION PROGRAMS OVER \$100,000 COMPLETED AS OF 6-30-62

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>Plant Investive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>RESEARCH AREA PROGRAMS, Cont'd</u>					
Rehabilitation and Re- building 301 Building	Work on explosion damage combined with necessary additions.	221,000	227,000	12-13-49	1-31-50
ALA Facilities (Cancelled)	Facilities for RALA production.	372,551	2,946,000	2-4-50	Cancelled 5-8-50
<u>P-10 PROGRAMS</u>					
Facilities for Process- ing Irradiated BB-15 and BB-65 Slugs	Installation of facilities in 100B Bldg. for handling and drying slugs. Alter- ation of 100B Bldg. and installation of extraction facilities including vacuum furnaces and special high vacuum glass process lines.	240,714	228,000	12-12-48	3-12-49
P-10 Second Phase	Conversion of 100B Bldg. and installation of facilities for the manufacture of P-10 slugs.	209,518	207,000	12-13-49	1-31-50
<u>REC. SERV. LABORATORIES & OFFICES</u>					
300 Area					
Total Casting Facilities	Addition of a 20' bay to an existing building at Hanford for a metal casting shop. Project includes shop equipment.	181,592	149,000	2-22-47	7-2-48
401 Services-300 Area	Steam plant, reboilers III and fences, and additional water supply.	854,618	366,600	7-9-47	7-1-49
Optional Shop & 300 Area Electrical Shop - Bldg. 708	Concrete block addition to Bldg. 3171 approximately 3600 sq. ft. Optional portion shut free - all air conditioned.	116,551	82,000	2-19-48	3-4-49
Additional Offices -	Office building 300 Area - adjacent to	172,529	97,600	3-2-48	2-28-49

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CONSTRUCTION PROGRAMS OVER \$100,000 COMPLETED BY 6-30-52

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Expenditure Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>Construction Facilities</u>					
Construction Camp (North Richmond)	Development of construction camp facilities in North Richmond.	19,933,430	15,000,000	8-1-47	12-16-48
Contractor's Yard - North Richmond	Construction of offices, shops, ware- houses and miscellaneous facilities for construction subcontractors.	3,000,578	3,298,000	8-1-47	2-29-49
Green Generating Facil- ities - 3000 Area - Bldg. 3046	Construction of building and instal- lation of two 100,000 lb. steam/water boilers and associated facilities.	2,011,303	1,900,000	6-7-48	2-28-49
Construction of 101 Area	Facilities for machining, lay-up and storage of graphite.	2,213,898	2,167,000	10-4-47	12-9-48
Construction of Central Shops - White Shiffs	General shop area for construction - White Shiffs.	4,612,344	4,650,000	3-18-48	12-15-48
<u>700 AREA & OTHER</u>					
Building of New Office Space (760 Bldg.)	8 sections 24' x 72' moved from Newford and set up in Richmond as the 760 Bldg.	268,974	113,900	5-15-47	6-15-48
Combined Maintenance Shops - 700 Area	Construction of the combined main- tenance shops in the 700 Area.	177,646	170,700	7-11-47	10-27-48
Enlarge Patrol Head- quarters	Enlargement of Room H-4 to provide jail, arrestal, and emergency generator room.	164,087	104,000	8-18-47	10-28-48
Consultant's Office, 61-762	Buildings moved from Passes Naval Air Station and erected in Richmond - building houses F.B.I., A-3's, etc.	331,241	272,000	10-25-47	10-28-48
		194,976	140,000	10-28-47	10-15-48

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CONSTRUCTION PROGRAMS OVER \$100,000 COMPLETED AS OF 6-30-50

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>Plant Director's Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>TRANSPORTATION FACILITIES</u>					
Rehabilitation of Plant Railroad	Track relocated west of Mahanadi; ties replaced as required; some plates installed; some reballasting.	2,450,600	3,200,000	3-4-48	1-1-50
Construction of Yabum Highway, Ip-Pass Highway Highway Improvements	Construction of Ip-Pass Highway and bridge across Yabum River.	644,090	900,000	3-20-48	2-4-49
Improvement of IHS Airport	Runway and repair shop improvements. Installation of additional lighting.	155,091	106,000	8-10-49	12-31-49
Less. Projects Under \$100,000		1,732,790			
<u>Special Test Wells</u>					
Experimental Animal Farm	Drill 72 test wells in 200 Acres. Construction of an experimental animal farm in 100-7 Acres, consisting of barns, office space, stables, a waste disposal system, and a stock control field.	176,570	195,000	2-24-47	4-1-50
Less. Projects Under \$100,000		395,660	206,000	5-12-49	2-28-50
		70,999			

INDUSTRIAL FACILITIES

Schools

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CONSTRUCTION PROGRAM OVER \$100,000 COMPLETED AS OF 6-30-52

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>Placed In Service</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>MICHIGAN FACILITIES - Cont'd</u>					
<u>Schools - Cont'd</u>					
Expanding Grade School	Construction of Expanding Elementary School with a capacity of 5th pupils.	1,666,536	1,227,000	5-15-48	2-1-49
Additions to Marcus Whitman School	Expansion of Marcus Whitman Elementary School providing capacity for 320 additional students.	660,233	476,000	5-11-48	5-15-49
Additions to Louis Clark School	Expansion of Louis Clark Elementary School to provide additional capacity for 248 pupils.	299,578	261,000	5-11-48	4-25-49
<u>Public A. Schools</u>					
Construction of Storm Sewer System, Dynam St.	Approximately 3000' of sewer, street re-improvement and widening with curbs, sidewalks and gutters.	160,121	39,000	7-1-48	11-12-48
<u>Buildings</u>					
Design of Water and Sewerage Facilities	Design of water and sewerage facilities for Richmond and North Richmond. (Design not used.)	201,892	505,000	8-15-47	4-1-49
Construction of Water & Sewerage Facilities	Relayment of water supply and sewerage system for Richmond and North Richmond.	5,293,561	7,600,000	11-9-47	5-11-49
Additions to Village Sewer Distribution Grid	Regrading storm lines from 700 Area to Columbia High School and Girard School Jr. High.	157,344	144,000	9-20-48	11-29-48
<u>Public - Cont'd</u>					

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CONSTRUCTION PROJECTS OVER \$100,000 COMPLETED AS OF 6-30-50

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>Planned Initiative Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
450 Replacement Houses (Present)	450 Modern houses.	5,057,326	4,900,000	7-25-47	6-24-48
Third Housing Addition Ranch Type	1000 Ranch-type houses.	13,844,920	16,000,000	3-30-48	11-15-49
Additional Men's Barracks (6)	More buildings (300 type) from Phase.	279,110	200,000	10-20-47	2-15-49
5 Bayonet Houses	Construction of five duplex houses including equipment and utilities.	161,611	87,000	4-30-48	10-15-48

COMMERCIAL FACILITIES

Commercial Facilities Area	Expansion of existing central business district, and development of light industrial areas, new central commercial area, and neighborhood shopping areas.	1,203,130	2,000,000	9-0-48	9-1-49
Unl. Projects Under \$100,000		1,000,000			

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U. S. Atomic Energy Commission
Nuclear Commission Office

PERMANENT FUND FROM 1949-1950 CONSTRUCTION ACCOUNT 6-20-50

since 1947

Title	Description	Total Cost	Plant Materials Amount	Construction Starting Date	Construction Completion Date
Test Hole Facilities	Reconstruction and installation of four up test hole tubes, and three sample test instruments.	7,793	7,900	3-0-47	9-4-47
30-7 Area Effluent Line Replacement	Replacement of damaged pipe.	23,318	49,290	12-01-46	4-4-49
Procurement for Pile Area	Intended for procurement of artificial equipment and material for Pile Area up, only graphite pressure vessels of which were changed to inventory.	17,011	7,565,000	1-6-48	12-31-49 PI filed status all work compl.
Procurement for Pile Area	Same as Pile Area up.	15,996	5,000,000	1-6-48	12-31-49 PI filed status all work compl.
Building of 305 Neck-Up, Line Tube Neck-Up Bldg.	Construction of a building and asso- ciated facilities to house a 9 tube test unit.	37,541	26,000	3-29-48	12-29-48
Openings Facilities	Provision of facilities for safely opening cans containing irradiated metal samples.	6,309	7,000	4-27-48	4-30-48
Neck-Up Facilities for Intelligence Studies	Reconstruct Bldg. 311 for 1950 operation area. Install necessary equipment.	49,639	47,700	11-29-48	4-13-49
Installation of Front View Shield Monitor Caps	Procurement and installation of 6000 shielded monitor caps with a fitted shielding member on D, D, F & H Piles.	11,903	80,000	3-27-50	12-1-50

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- 2 -

PROJECT 1964 TOTAL \$100,000 COMPLETED AS OF 6-30-62

Title	Description	Total Cost	First Expenditure Amount	Construction Starting Date	Construction Completion Date
	PLAS AREA PROJECTS, Cont'd				
Gas Tube Test Unit	Reinstallation two sets of tube housing blades. These units provide facilities to determine present mechanical con- dition of materials due to distortion and movement.	27,575	26,900	8-21-49	3-31-50
	SEMI-ANNUAL PROJECTS PROJECT				
Revisions of Second cycle Superheater	Provide facilities for discharge of steam and future wastes into ground.	97,007	194,200	3-5-47	6-15-48
Mod'l Facility for Stor- age of Sodium Hydroxide	Mod'l tanks moved from the 100 Area for installation in XII T & B.	15,530	14,650	6-27-47	12-15-47
Mod'l 605 MW Storage facilities XII T & B	Buying and reinstallation of 1 tank and installation of 6 additional tanks.	33,044	57,000	7-16-47	5-7-48
Alterations to Six Periscopes	Alterations to six periscopes assemblies on XII T Bldg. 75-ton crane to increase support tube diameters, rebuild mirror mounts, and coat lenses.	8,087	7,200	8-15-47	12-30-48
Alterations to Existing Lighting System - Bldg. 72 N & V	Installation of 31 1000-watt Flood lights and 98 300-watt fluorescent lamps in machine, sheet metal, and corridor shop areas.	5,344	6,600	9-18-47	4-23-48
Install 5/6 Galle Waste into Ground	Design and construction of 5/6 waste disposal system.	12,282	34,000	3-8-48	9-15-48
Install Waste Facili- ties	Installation in XII T Bldg. of facil- ities for processing of waste ma-	11,892	23,000	7-27-48	12-22-48

DECLASSIFIED

- 3 -

PROPOSED LABS TOTAL \$100,000 ESTIMATED AS OF 6-30-50

Table	Description	Total Cost	First Investive Amount	Construction Starting Date	Construction Completion Date
<u>300 Area</u>	<u>NEW. BLDG. LABORATORY & OFF. AREA</u>				
Inventory Addition 6 Building	Construction of additional wing of 4,500 sq. ft. to house labs and offices.	97,996	79,900	12-15-46	11-25-47
Instruments for Temporary File Space	Erection of Prefabricated in 300 Area to provide additional office space.	14,506	19,900	12-19-46	7-31-47
Additions to 3717 Instru- ment Shop	Addition of 2500 feet of space to outfit- ting shop to provide space for maintenance and manufacturing of instruments.	55,177	90,000	4-3-47	3-30-48
New Instruments for Medical Development Division	Erection of 3 instruments adjacent to 301 Bldg. for use as offices and drafting rooms by Chemical Development Division.	7,488	12,000	8-24-47	11-25-47
Chemical Library and File, Bldg. 3702	Moved three sections from Sanford Admin. Bldg. to 300 Area; included necessary connections.	66,904	64,000	9-20-47	2-28-48
Bldg. 3703A 2-story Addition	Construction of a building to house a 2 MW X-ray machine.	36,138	22,000	9-26-47	9-2-49
Automatic & Manual Fire Alarm, Bldg. 3706-3717	Installation of automatic and manual fire alarms.	6,356	5,450	12-9-47	7-8-48
Additions to Bldg. 3707A	Alterations of lunch room, additions including air conditioning, heating, lighting, etc.	5,605	3,600	11-20-47	2-27-48
Alternate Source 300 Area Water Supply	Installation of two parallel 6" lines of iron pipe 7000 feet from 300 Area grid system to 300 Area well	24,809	27,256	11-3-48	12-28-49

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DECLASSIFIED

PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-50

Title	Description	Total Cost	First Disbursal Amount	Construction Starting Date	Construction Completion Date

WPA. INSTR. LABORATORIES & OFFICES. SURVEYW.I. Instruments44'1 H.I. Instruments
(All Areas)Procurement of materials and fabrication
of instruments.

102,000

2-7-47

3-15-48

44'1 H.I. Instruments

Procurement of additional instruments,
development and fabrication of instru-
ments at Hanford shops.

97,200

3-25-48

2-28-50

TRANSMISSION PROJECTSTransmission Extension -
Liverland AirportExtension of the runway, provision of
additional lighting.

9,325

-

2-15-47

Relocation of WPA Trunk
Route of 1000 Area

Revised alignment of track.

57,700

8-25-47

12-19-47

Electrically Operated
Overhead Doors, 1131
Gas GarageInstallation of five electrically
operated doors.

5,500

9-12-47

6-15-48

Sprinkler System Loca-
tive Storage Bldg.Installation of sprinkler system at
Liverland Locomotive Works.

8,200

1-13-48

9-24-48

Valley Bridge Over Yakima
RiverConstruction of timber trestle for
Bailey unit.

63,150

4-20-49

5-25-49

HAZARDOUS PROJECTSIncrease Capacity of
100 Area Telephone
ExchangeInstallation of 100 additional lines
for 300 Area exchange.

30,000

18,422

9-11-49

Radio Communication for

Installation of new transmission on 600 Area

34,000

11-4-47

9-11-49

DECLASSIFIED

PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-50

Table	Description	Total Cost	First Dispositive Amount	Construction Starting Date	Construction Completion Date
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MANHATTAN PROJECT, CONT'D

Air Conditioning & Toilet Facility at B.Y. Telephone Building

NY Telephone Cable, installed to Connecticut

Installation of air conditioning equipment and toilet facilities at B.Y. telephone exchange building.

Installation of a cable from Highland telephone exchange to the south side of Hudson River and connection with the cable installed by the Kenosha Valley Telephone Company.

9,907	9,700	10-16-47	2-20-48
39,960	30,000	9-18-48	6-29-48

Artistic Funds and Related Facilities for New Laboratory (Pt.2)

UNCLASSIFIED PROJECTS, CONT'D

Construction of 13 ponds and associated facilities in the 100F Area.

Erection of hutment and packaged green-house, and laboratory equipment for botanical research - concrete floor and oil fired boiler.

Provided Building 602A with water line for domestic and fire protection use.

18,201	19,150	1-14-47	7-15-47
32,256	10,100	10-20-48	3-11-49
20,502	13,900	10-27-48	3-14-49

Water Supply for Microbiological Station

UNCLASSIFIED PROJECTS

Reconstruction of base, surface and

16,925	22,700	5-2-47	9-23-47
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PROJECTS UNDER \$100,000 COMPLETED AS OF 6-30-50

<u>Title</u>	<u>Description</u>	<u>Total Cost</u>	<u>First Disbursive Amount</u>	<u>Construction Starting Date</u>	<u>Construction Completion Date</u>
<u>MUNICIPAL FACILITIES - CONT'D</u>					
Lighted Soft Ball Park, Richland	Construction of a lighted soft-ball park with wooden bleachers.	25,157	20,670	4-9-48	8-4-48
Construction and Improv- ement of Richland Parking grounds	Construction and expansion of parking lots in village residential areas.	49,222	50,900	9-17-48	11-5-48
Curb and Sidewalk West of George Washington Hwy	Concrete curb and gutter and 4' side- walk between Abbe and Millington Sts. with necessary catch basins and culvert.	23,322	26,800	4-24-48	6-3-48
Patching and Seal Coating Village Streets	Patching and seal coating of approx. 100,000 lineal feet - stoneville 6000 tons crushed aggregate.	79,673	78,600	10-30-48	6-30-48
Design of Richland Jr. High School	Design of a Jr. High Facility to accommodate all Richland Junior high pupils. Design not used.	61,529	56,840	2-22-47	6-7-48 (Terminated)
Grading and Resurfacing in Glendon Road	Grading and resurfacing Vandusen Road from Ry-Pass Highway to Yakima Bridge.	66,913	104,000	7-21-49	11-23-49
Restoration of Irrigation which 6 miles upstream of Richland	Reconstruction and lining with concrete of approximately 600 feet of ditch.	48,701	49,000	1-11-49	5-6-49
Improvement of Meeting Facilities - Snoo-Jones	Installation of new rubber controls and steel bumper.	6,622	13,355	12-23-48	9-19-49
Wells and Clark School Fire Damage	Repair work accomplished on 10 class- rooms, corridors and utilities.	45,605	46,000	11-22-48	1-2-49
Glendon Avenue Improve-	Provision of approximately 425 feet	8,339	12,600	8-6-49	11-23-49

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PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-52

Table	Description	Total Cost	First Disbursive Amount	Construction Starting Date	Construction Completion Date
<u>HOUSING PROGRAM</u>					
Units M-13 Conversion to apartments (Part 2)	Alterations to Units M-13 to provide ten apartments.	33,544	12,450	12-19-46	6-2-47
Alterations to Kitchens in Type Houses	Remodeled and improved kitchens in 34 type houses.	11,075	15,960	7-1-47	4-15-48
Re-roofing of Roofs - Houses	Re-roofed the roofs of 1330 pre- fabricated houses.	54,546	69,200	9-8-47	1-2-48
Remodel & Reconstruction of House 1-577	Remodeled and repaired existing tract house.	9,558	7,000	7-28-48	10-28-48
Walkways & Steps for placement Houses	Provided steps and walkways for 450 Hudson houses.	53,851	70,280	7-28-48	10-15-48
Other Like Poles Village Housing	Supplied for Hudson, Ranch Type, and some A-J houses.	52,770	46,961	11-24-48	6-1-49
Extension of Water Service Tract House	Connected five tract houses to water main.	5,801	7,400	3-10-49	12-21-49
Attic Roofs Insulation 9 Present Houses	Insulation of attic heat ducts with 1/2" thickness of fireproof insulation.	14,508	44,280	12-5-49	1-20-50
<u>COMMERCIAL FACILITIES</u>					
Remodel Building 126	Conversion of temporary fire station for Red Cross use.	5,200	5,000	3-13-47	4-21-47
Alterations to Equipment Room - Commercial Laundry	Construction of an addition of 300 sq. ft. to the Commercial Laundry, replace- ment of equipment & repairs to floors.	6,966	8,000	7-14-47	3-15-48
Alterations to House's	Revised building to provide space for	26,054	27,000	1-12-48	4-6-48

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HAN-41652

PROJECTS LESS THAN \$100,000 COMPLETED AS OF 6-30-52

Title	Description	Total Cost	First Expenditure Amount	Construction Starting Date	Construction Completion Date
Transformer Station for Library Addition to Feed are up	<u>COMMERCIAL FACILITIES, CONT'D</u>	5,924	4,000	2-13-48	4-15-48
Additions to Highland Post Office	Installed transformer station and per- formed related work to provide power for bakery.				
Architect Engineers for Commercial Feedl.	Construction of an additional wing of fireproof construction.	37,707	27,300	3-9-48	1-7-49
	Design of seven commercial buildings, one of which was deleted from the contract.		29,750	6-23-47	5-14-48

Tabled
Costs
Costs

COST OF SCHOOL CONSTRUCTION
IN WASHINGTON STATE
FEBRUARY 1950

School	School District	Type School	State Standard Capacity	Total Cost	Average Cost Per Pupil
Jane Addams	Shoreline (Seattle)	Jr. High School	^{1/} 1,000	\$2,325,350	\$2,325
<u>Chief Joseph</u>	<u>Richland</u>	<u>Jr. High School</u>	750	1,800,000 ^E	2,400
Highland	Cowiche	High "	300	595,411	^{2/} 1,984
Overlake	Bellevue	High "	600	1,268,225	2,113
Westlake	Kirkland	High "	600	1,689,035	2,815
Ridgecrest	Shoreline (Seattle)	Elementary	420	735,907	1,752
Washington	Sunnyside	Elementary	650	656,137	^{3/} 1,009
Minneahaha	Vancouver	Elementary	360	542,653	1,507
	Ellensburg	Elementary	450	751,035	^{4/} 1,668
Viewridge	Seattle	Elementary	390	635,362	1,629
<u>Jason Lee</u>	<u>Richland</u>	<u>Elementary</u>	600	1,027,000 ^E	1,712

^{1/} Now expect to house 1200.

^{2/} No auditorium, shops not adequate.

^{3/} No gymnasium. Auditorium is not large enough to handle all of student body at one time.

^{4/} No auditorium.

E Estimate

Source: Washington State Department
of Public Instruction.



COST COMPARISONS

WASTE STORAGE FACILITIES

Tank Farm	Indicated (I) or Final Cost	Indicated (I) or Final Completion Date	Number of Tanks	Individual Capacities (Gallons)	Total Capacities (Gallons)	Construction Cost Per	
						Tank	Gallon
241-T	\$ 3,000,000	10-30-44	12 4	528 530,000 55,000	6,580,000	\$ 241,641* 25,076	\$ 0.456
241-U	3,000,000	12-1-44	12 4	528 530,000 55,000	6,580,000	241,641* 25,076	0.456
241-B	3,000,000	1-19-45	12 4	528 530,000 55,000	6,580,000	241,641* 25,076	0.456
241-C	2,900,000	1-26-45	12 4	528 530,000 55,000	6,580,000	233,587* 24,240	0.441
241-BX #	2,200,000	3-15-48	12	528 533,000	6,396,000	183,333	0.344
241-TX ###	5,850,000	7-1-49	18	758,000	13,644,000	325,000	0.429
241-BY ###	2,650,000	12-22-49	12	758,000	9,096,000	220,833	0.291
241-S ##	2,300,000(I)	9-26-51	12	758,000	9,096,000	191,667	0.253
241-TY ##	2,100,000(I)	2-20-52 (I)	6	758,000	4,548,000	350,000	0.462
Total	\$27,000,000				69,100,000		\$ 0.391 Average

* Unit costs for tanks computed by prorating total project costs on the basis of tank capacities.
 # Morrison-Knudsen -- Lump sum.
 ## Fred J. Early -- Lump sum.
 ### Morrison-Knudsen -- CPFF.

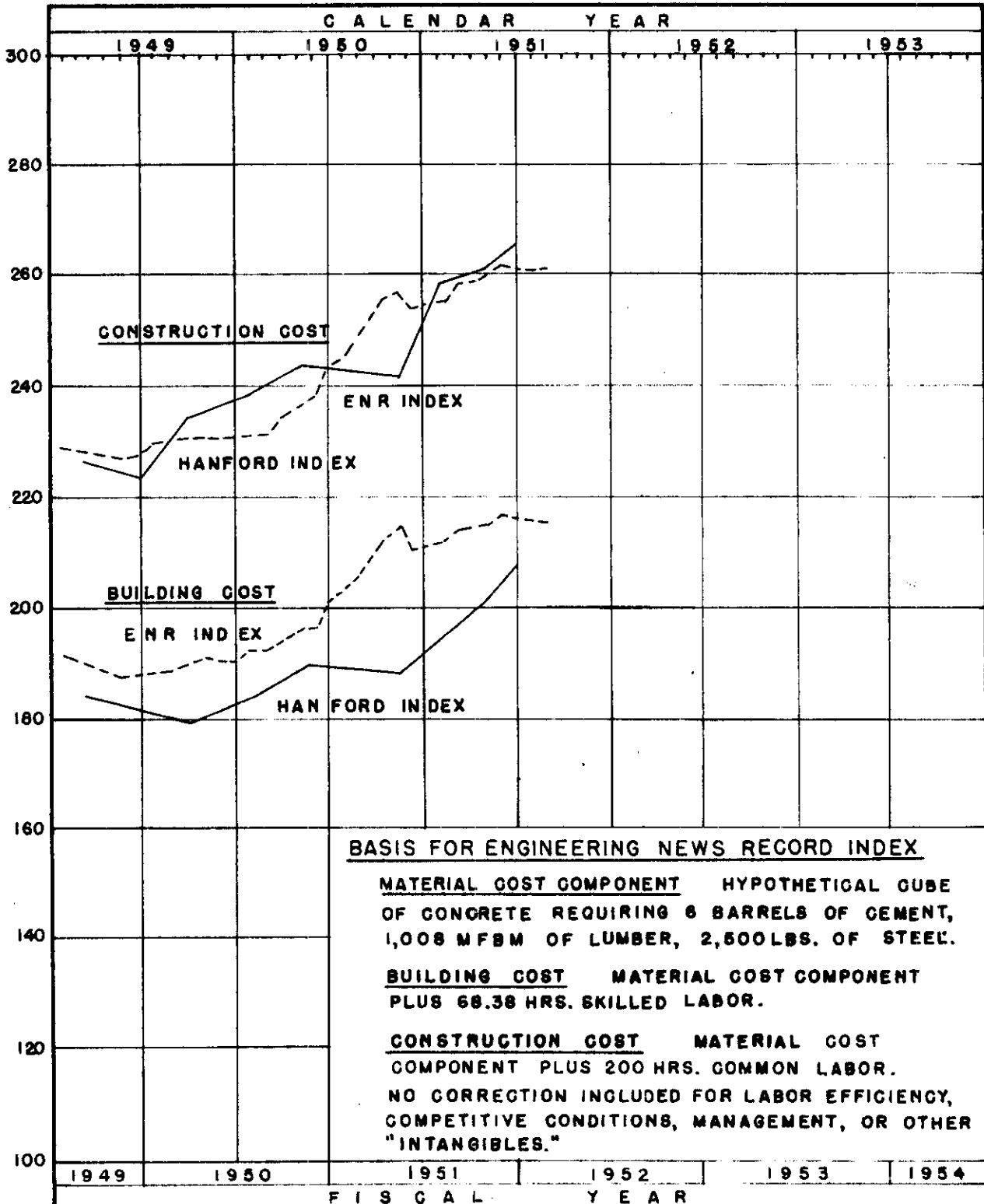
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COMPARISON OF HANFORD CONSTRUCTION AND BUILDING COSTS WITH THOSE OF VARIOUS CITIES

(1926 = 100)



SOURCE ENGINEERING NEWS RECORD, AEC BUILDING AND CONSTRUCTION COST INDICES.

COMPARISON OF HANFORD CONSTRUCTION AND BUILDING COSTS WITH
THOSE OF VARIOUS CITIES

	ENR 20 CITIES AVERAGE (1923 = 100)						HANFORD					
	Construction Costs			Building Costs			Construction Costs			Building Costs		
	1949	1950	1951	1949	1950	1951	1949	1950	1951	1949	1950	1951
January	229.5	231.0	255.1	191.9	192.5	211.9	-	238.2	258.9	-	184.0	194.0
February	228.5	231.0	258.0	190.8	192.7	214.6	-	-	-	-	-	-
March	228.2	234.8	258.6	190.5	194.6	215.1	226.2	-	-	184.4	-	-
April	227.6	236.5	258.9	189.9	196.1	215.6	-	243.5	261.0	-	190.0	201.0
May	226.9	238.7	261.4	188.6	196.9	217.3	-	-	-	-	-	-
June	227.8	243.5	260.9	188.8	201.6	216.6	223.3	-	265.6	181.2	-	207.3
July	229.6	246.0	260.7	188.9	203.7	216.4	-	-	-	-	-	-
August	229.9	250.3	260.9	189.6	206.6	216.3	-	-	-	-	-	-
September	230.6	255.0	-	190.2	212.3	-	234.5	-	262.7	179.8	-	209.1
October	230.9	256.9	-	191.1	214.2	-	-	241.8	-	-	188.4	-
November	230.8	253.7	-	190.7	210.2	-	-	-	-	-	-	-
December	230.9	254.2	-	190.9	210.9	-	-	-	-	-	-	-

Note: The following key material and labor components are employed in computing the above indices:

Construction Costs - 1 1/4 tons of structural steel, 6 bbls of cement, 1088 feet of pine or fir, and 200 hours of common labor.

Building Costs - 68.38 hours of skilled labor are substituted for common labor.

Efficiency, mileage, custom-made equipment are not reflected; therefore, these comparisons are no good for final cost.

HB/10-51

AEC-HOO-Budget Division

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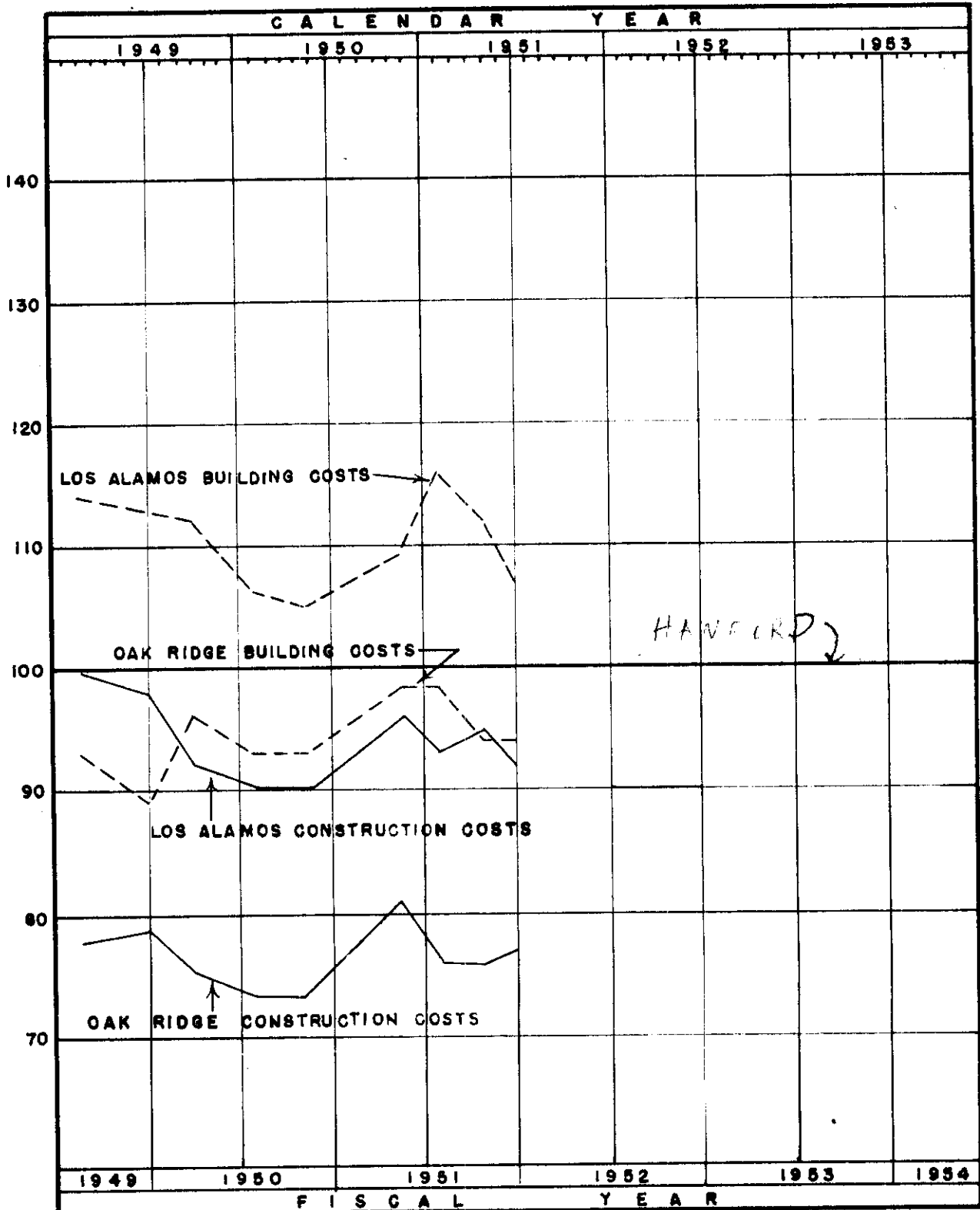
HAN-51652

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88

DECLASSIFIED COMPARISON OF AEC CONSTRUCTION AND BUILDING COST BY AREA

HANFORD = 100



SOURCE AEC BUILDING AND CONSTRUCTION COST INDICES (BASED ON
ENGINEERING NEWS RECORD CONSTRUCTION COST INDEX)

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COMPARISON OF AEC CONSTRUCTION AND BUILDING COSTS BY AREA
HANFORD = 100

<u>AEC Construction</u> <u>Costs by Area</u>	<u>1949</u>			<u>1950</u>			<u>1951</u>		
	<u>March</u>	<u>June</u>	<u>Sept.</u>	<u>Jan.</u>	<u>April</u>	<u>Oct.</u>	<u>Jan.</u>	<u>April</u>	<u>June</u>
Oak Ridge, Tenn.	.78	.79	.75	.73	.73	.81	.76	.76	.77
Schenectady, N.Y.	.94	1.06	1.01	1.00	1.02	1.11	1.01	1.05	1.04
Chicago, Ill.	1.12	1.13	1.08	1.11	1.11	1.15	1.05	1.17	1.06
Los Alamos, N.M.	.99	.98	.92	.90	.90	.96	.93	.95	.92
Brookhaven, N.Y.	1.19	1.19	1.18	1.17	1.20	1.28	1.19	--	--
Idaho Falls, Idaho			.96	.95	.95	.99	.93	.99	.96
Dana, Indiana			1.12				1.07	1.04	.97
Paducah, Ky.								.97	.91
Augusta, Ga.								.71	.71
Amarillo, Tex.									.91
Fernald, Ohio									.96

AEC Building Costs
by Area

Oak Ridge, Tenn.	.93	.89	.96	.93	.93	.98	.98	.94	.94
Schenectady, N.Y.	1.03	1.05	1.07	1.05	1.09	1.19	1.13	1.11	1.11
Chicago, Ill.	1.03	1.06	1.09	1.07	1.06	1.07	.98	1.12	1.12
Los Alamos, N.M.	1.14	1.13	1.12	1.06	1.05	1.09	1.16	1.12	1.07
Brookhaven, N.Y.	1.05	1.10	1.17	1.15	1.20	1.27	1.26	--	--
Idaho Falls, Idaho			1.01	.98	.99	1.04	1.01	1.08	1.02
Dana, Indiana			1.28				1.02	1.03	1.01
Paducah, Ky.								1.07	.98
Augusta, Ga.								.95	.99
Amarillo, Tex.									1.07
Fernald, Ohio									1.50

Source: "AEC Building and Construction Cost Indices" (issued periodically and based on Engineering News Record Cost Indices).

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HOO UNIT PRICES -- BUILDING CONSTRUCTIONNOTE: Applicable for average conditions. GO EASY.

		LUMP SUM BID			CPFF SUBCONTRACTOR DIRECT COST			
		Mater-	Labor	Total	Mater-	Equip-		
Unit		ial			ial	Labor	ment	Total
Earthwork								
Excav. (Mach.)	C.Y.			.35	.03	.22 ^{.23}	.17	.42 ^{.43}
Backfill "	C.Y.			.30	.09			
Borrow "	C.Y.			.30 ^{.41}				
Grading "	C.Y.			.40				
Structural								
Conc. incl. forming, stripping & curing	C.Y.	7.50	7.50	55.00				*102.50
Steel @ 125 C.Y.	C.Y.	6.00	6.00	12.00	15.00			19.00 23.50
Conc. Block	Each	.35	.50	.85				
Struct. Steel	Ton			320.00	325.00			450.00
Lumber	MBM	85.00	85.00	170.00				
Miscellaneous								
Plaster (3 coat on metal lath)	S.Y.	2.00 1.50	2.50	4.00	4.50			
Wallboard (hardwall) (gypsum)	S.F.	.10	.10	.20				
Roofing (3 ply on conc.)	Sq.	8.00	13.00	21.00				
Painting (3 coat)	S.Y.	.55	.26	.81				
Mechanical -								
Utility lines incl. excav. & backfill								
8" Sewer Pipe	L.F.			2.75				
10" " "	L.F.			3.10				
12" " "	L.F.			3.60				
24" " "	L.F.			9.15				
6" Water Pipe	L.F.			3.75				
8" " "	L.F.			4.75				
24" " "	L.F.			23.00	24.00			
Plumbing Fixtures (Avg.)	Each			250.00	275.00			

* This figure has varied from \$60.00 to \$200.00, depending upon complexity of placement. The figure shown is the average for 33,400 cubic yards of concrete placed on 2028 through 3/31/51.

HAN-41652

V-G

RATIO - INDIRECT CONSTRUCTION
COSTS TO DIRECT COSTS

0 Head, computer
& Kato!

Overhead Distribution

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CONSTRUCTION COST ACCOUNTING

The system of cost collection and distribution presently in use by the Design and Construction Division was devised during the fall of 1949 and put into operation with the start of construction of the DR Waterworks in December of 1949.

Under this system, each CPFF construction subcontractor maintains his own cost ledgers and distributes his own overhead charges to the projects upon which he is engaged. Every effort is made to charge costs directly to projects, rather than to prorate them among projects. The following types of cost are considered as overhead and distributed to projects monthly on the basis of direct construction labor cost incurred during the month:

CPFF Management	Business Tax
Purchasing & Expediting	First Aid & Medical Charges
General Construction Supervision	White Bluffs Office Maintenance
Accounting, General	Shop Equipment and Small Tool
Timekeeping and Payroll	Amortization & Repair
Engineering Services	Utilities & Communications
General Office Services	3000 Area Office Rental
Personnel Services	Construction Equipment Servicing,
Processing Time	Usage and Idle Time

The General Electric Design and Construction Division accumulates costs by the following units:

Staff Divisions

- Management
- Contracts
- Accounting
- Administration
- Engineering Services
- Construction Services

Line Divisions

- Power & Mechanical
- Reactor
- Separations

Construction Camp

DECLASSIFIED

Staff Division costs are liquidated monthly to the Staff Divisions, to Line Divisions and to construction projects on the basis of services performed for the customer divisions. Line Division Costs are charged monthly to the projects upon which each Line Division is engaged. Costs of the Construction Camp operation are charged to construction projects monthly on the basis of total construction cost incurred during the month.

Instances where construction work is performed by General Electric Company's own forces (sometimes referred to as minor construction), other than the Design and Construction Division, costs, including indirect manufacturing expense (IME), are recorded against individual projects in accordance with the company's established manufacturing accounting procedures.

AEC-HOO-Finance Division

AMW:JRJ

Sept. 7, 1950

Sheet 2 of 2 Sheets

DECLASSIFIED

SCHEDULE OF OVERHEAD INCURRENCE --- THREE MAJOR CONSTRUCTION PROJECTS

AS OF JULY 31, 1950

	Direct Costs			Total*	Overhead	% Overhead	
	Subcontractor		Equip. Usage			To Direct Labor	To Direct Cost
Labor	Material						
7/31/50 1950	\$ 3,385,606 498,568	\$ 3,888,763 820,981	\$ 241,001 36,286	\$ 7,715,227 1,380,325	\$ 2,179,115 222,598	64.4% 144.6	28.2% 16.1
tion Plant							
7/31/50 1950	\$ 1,510,961 521,783	\$ 1,214,680 452,736	\$ 112,874 31,825	\$ 2,991,184 1,051,028	\$ 1,004,542 239,313	66.5% 45.9	33.6% 22.8
nd Plant tory							
7/31/50 1950	\$ 420,024 88,280	\$ 286,788 62,125	\$ 16,809 4,385	\$ 757,836 175,053	\$ 224,378 39,457	53.4% 144.6	29.6% 22.5

design costs.

percentage difference between overhead rates for July and for the construction period are explained by the increase in construction costs with overhead costs increasing more slowly. For example, operating costs of the camp remain relatively stable. As construction forces increase, the ratio of camp costs to direct labor will increase.

HAN-41652

Handwritten notes:

HF-N-41652 V-H.

COMPARISON - ORIGINAL PROTECT
ESTIMATES VS. FINAL (OR
INDICATED FINAL) COST.

10/1/52

HAN-41652

DECLASSIFIED

GENERAL ELECTRIC COMPANY

Hanford Works - Design & Construction Divisions

SUMMARY OF MAJOR CONSTRUCTION PROJECTS

Same as 10.

Line	Actual Costs to Apr. 30, 1949									
	Construction			Labor & Mat'l.			Indirect Costs			Total Indicated Costs
	Total Construction	Total Project Cost	Engineering Design	Engineering Labor & Equip. Usage	Construction	Total Construction	Construction	Construction	Costs	
0-1)	\$ 8,550,000	\$ 8,750,000	\$ 110,048	\$ 8,639,907	\$ 3,478,008	\$ 12,117,915	\$ 12,227,963	\$ 12,227,963	\$ 12,227,963	\$ 12,227,963
0-2)	1,378,000	1,438,000	29,353	1,651,064	806,566	2,457,630	2,486,983	2,486,983	2,486,983	2,486,983
0-3)	4,829,000	4,900,000	15,267	4,999,283	22,391	5,021,676	5,036,943	5,036,943	5,036,943	5,036,943
0-4)	1,176,000	1,227,000	47,141	1,201,751	392,472	1,594,223	1,641,364	1,641,364	1,641,364	1,641,364
0-5)	2,166,504	2,166,504	19,293	1,498,004	651,983	2,149,987	2,169,280	2,169,280	2,169,280	2,169,280
0-6)	3,160,500	3,298,000	32,032	2,109,379	1,099,885	3,209,264	3,241,296	3,241,296	3,241,296	3,241,296
0-7)	1,845,800	1,900,000	2,996	1,519,299	455,598	1,974,897	1,977,893	1,977,893	1,977,893	1,977,893
0-8)	4,649,500	4,650,000	473	3,058,007	1,561,084	4,619,091	4,619,544	4,619,544	4,619,544	4,619,544
0-9)	3,210,049	3,320,708	103,000	2,936,000	1,008,000	3,944,000	4,047,000	4,047,000	4,047,000	4,047,000
1-6)	30,945,353	31,650,212	359,603	27,612,656	9,475,987	37,088,683	37,448,286	37,448,286	37,448,286	37,448,286
0-10)	15,325,000	16,000,000	233,000	12,563,000	341,000	12,904,000	13,137,000	13,986,000	14,009,000	14,009,000
0-11)	5,338,000	5,338,000	-	4,011,000	944,000	4,955,000	4,955,000	5,226,000	6,902,000	6,902,000
0-12)	14,622,500	15,000,000	120,000	13,998,000	5,214,000	19,212,000	19,332,000	19,338,000	19,736,000	19,736,000
0-13)	7,291,050	8,760,324	1,679,000	11,751,000	5,303,000	17,054,000	18,733,000	19,275,000	24,950,000	24,950,000
0-14)	4,878,261	5,100,000	43,000	4,344,000	1,458,000	5,802,000	5,845,000	5,845,000	5,864,000	5,864,000
0-15)	37,400,000	38,700,000	765,000	21,929,000	6,556,000	28,485,000	29,250,000	29,486,000	31,882,000	31,882,000
0-16)	96,300,000	97,335,000	1,730,000	36,680,000	11,777,000	48,457,000	50,187,000	52,545,000	81,809,000	81,809,000
0-17)	1,711,500	1,786,000	67,000	2,734,00	735,000	3,469,000	3,536,000	3,711,000	3,809,000	3,809,000
0-18)	3,642,500	3,656,500	9,000	1,319,000	550,000	1,869,000	1,878,000	1,913,000	3,643,000	3,643,000
0-19)	7,811,334	8,127,526	269,000	1,434,764	442,236	1,877,000	2,146,000	2,772,000	16,260,000	16,260,000
0-20)	194,320,145	199,803,350	4,915,000	110,763,764	33,330,236	144,084,000	148,999,000	154,117,000	202,864,000	202,864,000
0-21)	\$225,265,498	\$231,453,562	\$5,274,603	\$138,376,460	\$42,796,223	\$181,172,683	\$186,447,286	\$191,565,286	\$240,312,286	\$240,312,286

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- (a) At the beginning of the present major construction program, cost estimates were prepared on the basis of:

- (1) Construction contractor's labor, material, overhead and profit.
- (2) Contingencies - 10%.
- (3) Engineering and design - 5%.
- (4) Field expense and engineering - 5%.

Later when the cost system had been fully developed, cost estimates were consistent therewith on the basis of:

- (1) Engineering design.
- (2) Construction direct labor.
- (3) Construction direct material.
- (4) Major equipment usage.
- (5) Indirect costs.

In order to make a comparison of the earlier estimated costs with the actual recorded costs, it has been necessary to estimate the amount of indirect costs included in the earlier estimates. As indicated above, the earlier estimates provided for the construction contractor's overhead only and did not make provision for other indirect costs that are now being recorded against individual projects, such as:

- (1) Costs incurred by GE in the general administration of the construction program including management, procurement, accounting, timekeeping and payrolls, personnel, safety, fire protection, patrol, security, industrial medical, first aid, etc.
- (2) Net cost of operating the construction camp at North Richland.

These items account in large part for the overrun in indirect costs shown above.

- (b) Lump sum contract with the result that contractors indirect costs are included in the "Labor, Material and Equipment Usage" classification.
- (c) Includes project for RR connection south of Richland at project estimate of \$351,000 and estimated total cost of \$5,150,000.

General Notes:

- (1) This schedule does not include engineering or combined engineering-development projects nor does it include construction costs of the cancelled radar test-plant which amounted to \$1,385,000. 15 such projects are not included.
- (2) Chronology of Pile Area Directive & Budget Amounts:

	DR	H
Original Directive 1/6/48	\$5,750,000	\$5,750,000
1948 Budget Allowance	\$5,200,000	\$5,244,000
1950 Budget Allowance	\$5,200,000	\$2,500,000*
Present Directive Amount	\$5,200,000	\$2,500,000

*Reduction of H allowance in 1950 due to withdrawing White Bluffs and 101 Shaps from H Area

HAN-41652

V I. Hanford Construction Program -
Budgeted Amounts Vs Estimated Final Costs
Schedule A

Current Subcontractor Estimates

Future reports are discontinued.CONSTRUCTION COMMITMENTS AND EXPENDITURES
UNDER CONTRACT W-31-109 ENG. 52

From July 1, 1947 thru September 30, 1951

<u>Cost-Plus-A-Fixed Fee Subcontractor - Active</u>		<u>Commitments</u>	<u>Expenditures</u>
G-133	Guy F. Atkinson & J. A. Jones Construction Company	174 322 107.76	169 045 846.74
G-148	Vitro Corporation of America	12 640 361.76	12 421 205.18
G-363	Chas. T. Main	419 432.17	318 352.17
		187 381 901.69	181 785 404.09

Lump Sum Subcontractors - Active

G-182	Combustion Engineering Company, Inc.	749 707.06 *	749 707.06
G-196	Chicago, Milwaukee, St. Paul & Pacific R. R. Company	29 945.50	29 305.00
G-259	J. Gordon Turnbull, Inc.	52 600.00	51 260.86
G-283	Sheppard T. Powell	15 000.00	8 016.61
G-296	The Whiting Corporation	7 500.00	6 800.00
G-302	Fred J. Early Jr. Co., Inc.	1 542 884.56	1 542 199.51
G-304	Leland S. Rosener	393 640.00	286 595.00
G-317	X-Ray Products Corporation	120 827.40	85 496.55
G-344	Sound Construction & Engineering Co.	1 156 289.00	611 813.13
G-352	L. H. Hoffman	2 576 217.38	541 887.20
G-355	Dix Steel Building Company	161 913.00	151 867.92
G-357	Malarkey & Moore	279 566.00	240 097.48
G-359	Montgomery Electric Company	117 622.00	75 618.17
G-361	American Steel & Wire Company	33 913.22	23 380.80
G-362	The Moscow Electric Company	34 430.00	30 520.71
G-367	Fred J. Early, Jr. Co., Inc.	1 195 555.00	619 775.71
G-370	Universal Ball Company	1 500.00	-0-
G-374	Erwen Construction Company	42 264.00	7 032.73
G-379	Industrial Electric Company	109 998.85	50 274.28
G-382	Bumstead - Woolford	564 236.00	-0-
G-384	Sound Construction & Engineering Co.	3 744 213.00	95 477.43
G-386	Northwest Bridge & Tank Company	11 406.35	4 787.94
G-392	X-Ray Products Corporation	29 900.00	7 402.08
G-393	L. H. Hoffman	206 900.00	-0-
G-395	University of Washington	1 195.00	-0-
G-398	Erwen Construction Company	15 827.00	-0-
G-400	The Haloid Company	720.00	-0-
		13 195 770.32	5 219 316.17

Purchase Orders

HWC's	Construction	67 800 599.57	52 384 813.04
HW's	Construction	844 363.34	844 363.34
		68 644 962.91	53 229 176.38

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1747-91052

Lump Sum Subcontractors - CompletedCommitmentsExpenditures

G-137	G.A. Pehrson and Associates	18 700.00	18 700.00
G-138	John S. Villesvik	3 013.50	3 013.50
G-139	J. Brandt Gessel and Associates	10 766.50	10 766.50
G-141	Dewitt C. Griffin and Associates	218 687.12	218 687.12
G-142	John L. Hudson and Associates	4 973 408.57	4 973 408.57
G-143	Catlow Transport Company	313 640.92	313 640.92
G-144	Northwest Hauling Company	155 403.07	155 403.07
G-149	Catlow Transport Company	25 426.00	25 426.00
G-150	J. Gordon Turnbull & Associates	755 857.82	755 857.82
G-150A	J. Gordon Turnbull & Associates	16 075.00	16 075.00
G-150B	J. Gordon Turnbull & Associates	12 000.00	12 000.00
G-152	D.A. Whitley Company	28 046.76	28 046.76
G-153	Roy L. Bair Company	34 447.00	34 447.00
G-157	C.C. Moore and Company, Inc.	355 577.96	355 577.96
G-159	MG Curtis Gravel Company	292 910.95	292 910.95
G-161	J.A. Terteling and Sons, Inc.	369 797.91	369 797.91
G-165	Haughton Elevator Company	391 478.67	391 478.67
G-166	Chicago Bridge and Iron Company	35 454.00	35 454.00
G-167	Great Lakes Carbon Corporation	450 850.04	450 850.04
G-172	Nettleton-Baldwin-Anderson, Inc. and Sound Construction & Engineering Co.	10 032 807.82	10 032 807.82
G-175	X-Ray Products Corporation	127 965.67	127 965.67
G-181	Kelly Well Company	20 836.75	20 836.75
G-183	Link Belt Company	230 058.47	230 058.47
G-189	Alvord, Burdick and Howson	30 000.00	30 000.00
G-192	Raymond Concrete File Co.	15 000.00	15 000.00
G-194	R.G. Strasser Drilling Co.	32 085.50	32 085.50
G-195	Pittsburg-Des Moines Steel Co.	14 950.00	14 950.00
G-197	American Machine and Foundry Co.	25 200.00	25 200.00
G-205	A.C. Grant	48 029.36	48 029.36
G-208	A.B.C. Roofing and Siding Company	49 142.34	49 142.34
G-210	Don L. Cooney, Inc.	222 343.77	222 343.77
G-211	Scott Buttner Electric Co., Inc.	208 187.00	208 187.00
G-217	Graysport Construction Co.	1 498 980.72	1 498 980.72
G-220	Howard P. Foley Company	106 835.89	106 835.89
G-226	Nolse Mortenson Company	42 204.03	42 204.03
G-228	B.K.V. Company	26 068.79	26 068.79
G-230	J. Gordon Turnbull, Inc.	120 426.00	120 426.00
G-234	X-Ray Products Corporation	60 292.52	60 292.52
G-236	J. Gordon Turnbull & Assoc.	101 870.00	101 870.00
G-240	Newport, Kern and Kibbe	26 813.87	26 813.87
G-241	Frederick J. Converse	4 718.00	4 718.00
G-245	J.A. Terteling & Sons, Inc.	1 090 868.80	1 090 868.80
G-250	Jaggar Sroufe Company	15 094.17	15 094.17
G-252	Curtis Gravel Company	41 662.00	41 662.00
G-253	Alvord, Burdick and Howson	3 500.00	3 500.00
G-256	J. Gordon Turnbull & Assoc.	184 934.51	184 934.51
G-262	Edmund P. Erwen	115 777.30	115 777.30
G-264	National Records Management Council	9 500.00	9 500.00
G-265	J.A. Terteling & Sons, Inc.	669 687.56	669 687.56
G-266	Howard P. Foley Company	29 910.58	29 910.58
G-267	Howard P. Foley Company	50 367.85	50 367.85
G-269	J. Gordon Turnbull, Inc.	9 000.00	9 000.00
G-285	Chas. T. Main	59 106.93	59 106.93
G-292	The Fluor Corporation, Ltd.	127 386.51	127 386.51
G-297	Edmund P. Erwen	149 595.85	149 595.85

205

Lump Sum Subcontractors - Completed

G-330	Alvord, Burdick and Howson
G-324	Lewis A. Hopkins
G-338	Newport, Kern, & Kibbe
G-341	Barrett & Logan
G-349	Chas. T. Main
G-356	R & T Plumbing & Heating

Commitments

9 000.00
108 953.00
554.00
12 500.00
103 250.00
<u>1 446.50</u>

Expenditures

9 000.00
108 953.00
554.00
12 500.00
103 250.00
<u>1 446.50</u>

24 298 453.90

24 298 453.90

Cost-Plus-A-Fixed Fee Subcontractors - Completed

G-135	National Carbin Company
G-151	Giffels & Vallet
G-157	C.C. Moore and Co., Inc.
G-160	Morrison-Knudsen Co., Inc.
G-173	J. A. Terteling and Sons, Inc.
G-174	E.I. duPont deNemours and Co., Inc.
G-186	Pacific Telephone and Telegraph Co.
G-190	McNeil Construction Company
G-222	Morrison-Knudsen Company, Inc.
G-274	Chas. T. Main

3 817 152.05
1 965 733.85
892 579.21
3 682 797.22
4 383 776.13
547 593.47
15 308.50
4 653 355.11
1 692 692.12
<u>482 588.19</u>

3 817 152.05
1 965 733.85
892 579.21
3 682 797.22
4 383 776.13
547 593.47
15 308.50
4 653 355.11
1 692 692.12
<u>482 588.19</u>

22 133 575.85

22 133 575.85

Cost-Plus-A-Fixed Fee Subcontractor - Active	187 381 901.69
Cost-Plus-A-Fixed Fee Subcontractor - Completed	22 133 575.85
Lump Sum Subcontractor - Active	13 195 770.32
Lump Sum Subcontractor - Completed	24 298 453.90
Purchase Orders	<u>68 644 962.91</u>

187 381 901.69
22 133 575.85
13 195 770.32
24 298 453.90
<u>68 644 962.91</u>

181 785 404.09
22 133 575.85
5 219 316.17
24 298 453.90
<u>53 229 176.38</u>

315 654 664.67

286 665 926.39

* Subcontractor showing same figure for Commitment and Expenditures are still active as to amount retained and/or material and wage escalation claim.

(AEC-HOO-Finance Division)

HAN-41652



Schenectady Cost
Transfers

Schenectady Cost Transfers

STATEMENT OF ASSETS TRANSFERRED FROM KAPL
IN CONNECTION WITH THE

GENERAL ENGINEERING LABORATORY
ASSISTANCE TO HANFORD PROGRAM

NOVEMBER 30, 1951

	AMOUNT AUTHORIZED	ACCOUNT CHARGED	AMOUNT TRANSFERRED CURRENT MONTH (1)		TOTAL TRANSFERRED TO DATE	PERCENT PHYSICAL COMPLETION (2)
			CHARGES	CREDITS		
	\$1 005 966.62				\$ 852 250.09	
	\$3 434 869.00	1309-375-461	\$ 15 956.83	\$ -0-	\$ 15 956.83	99%
Test Unit	53 300.00	72200	-0-	-0-	47 731.80	100%
le Motor	42 000.00	51100	-0-	-0-	41 576.41	100%
	12 000.00	72200	-0-	-0-	12 146.38	100%
and Consulting Work	10 000.00	1802-375-461	-0-	-0-	5 249.36	
	206 500.00	C-412-01-7601	10 605.65	-0-	108 982.34	70%
	3 441 791.00	1802-375-461	183 322.43	-0-	2 191 142.67	86%
of Control Rod	12 000.00	52721	358.69	-0-	11 388.74	100%
n of Thermal Stresses	1 900.00	52721	191.08	-0-	917.62	15%
liminary Engineering	32 500.00	2211-431-491	972.74	-0-	6 525.29	80%
ing and Construction	5 000.00	1802-375-461	189.40	-0-	347.05	
	3 000.00	P-438-06-9201	8.58	-0-	8.58	10%
Construction	\$7 254 860.00		\$ 211 605.40	\$ -0-	\$ 211 605.40	

PROJECT	AMOUNT AUTHORIZED	ACCOUNT CHARGED	AMOUNT TRANSFERRED		CURRENT MONTH NET	TOTAL TRANSFERRED TO DATE	PERCENT PHYSICAL COMPLETION
			CHARGES	CREDITS			
Program "R" Project	\$ 142 780.00	232-232-657	\$ 6 610.16	\$ -0-	\$ 6 610.16	\$ 128 780.70	96%
Electronics Division	236 250.00	C-339-04-7601	26.45	40.90(3)	14.45	227 056.91	99%
Feasibility of Metal	13 604.00	C-399-00-0000	134.24	-0-	134.24	12 457.05	100%
Nuclear Reactor	2 500.00	180-180-259	76.46	-0-	76.46	894.56	20%
Gas Reaction Test	18 992.00	410-00-0000	3 761.67	-0-	3 761.67	15 758.50	96%
AM	16 000.00	M-819	-0-	-0-	-0-	3 643.90	100%
	18 000.00	C-399-05-7601	1 691.76	-0-	1 691.76	11 973.19	100%
	41 117.00	C-412-01-7601	5 271.60	-0-	5 271.60	30 921.27	95%
	\$ 489 243.00		\$ 17 572.34	\$ 40.90	\$ 17 531.44	\$ 431 486.08	
	\$8 750 069.62		\$ 229 177.74	\$ 40.90	\$ 229 136.84	\$6 998 871.25	

September represents amount booked by KAPL during period September 30 through October 28, 1951.

Engineering Laboratory November 30, 1951.

Amount of Other Applied Material and KAPL ILE.

V A.

General

VOLUME 4

CONSTRUCTION SCHEDULES & MANPOWER

CURRENT SCHEDULES

Second Construction Program at HW
Current Est. for Constr. Projects in Progress or to be authorized in FY 1951
Schedule for Constr. of Major Elements of Program

FORECASTS

Third Survey of Constr. - Manpower Curve
Third Survey of Constr. - Est. Average Construction Employment
Third Survey of Constr. - Est. Cost Incurrence

CONSTRUCTION PROJECTS

INSIDE BARRICADE

Develop. of New Pile Area - R&D Authorization - Statistical Information
Galvanic Corrosion of Waste Lines
HW Laboratory Area - Statistical Information
HI Control & Development Laboratory - Statistical Information
New Pile Area H - Design of Water Plant
P-10 - X - Statistical Information
Pile Technology Building - Statistical Info.
Radiochemistry Building - Statistical Info.
Radiometallurgy Building - Statistical Info.
C-165A - New Pile Area H - Statistical Info.
C-187 - C - Redox Test Plant Area - Statistical Information
C-187 - D - Redox Production Plant - Statistical Information
C-187 - E - Redox Analytical & Plant Assistance Lab. & Associated Waste Disposal Facilities - Statistical Information
C-198 - 234-5 Building Program - Total Costs
C-198 - 234-5 Building Program - Statistical Information
C-206A - Replacement Pile 100-DR - Statistical Information
C-267 - Reconstruction of 101 Area - Statistical Information
C-295 - Enlarging 251 Substation - Add. 13.8 kv Feeders to 200E and 200W
C-337 - Dissolver Off-Gas Filtration for Buildings 221-T and B - Statistical Info.
C-342 - DR Water Works - Statistical Info.
C-349 - Hot Semi-Works - Statistical Info.
C-361 Metal Conversion Facilities - Statistical Information
C-362 - Waste Metal Removal & Recovery Facilities - Statistical Information
C-368 - P-10-B - Statistical Information
C-378 - Iodine Removal Facilities for Dissolver Off-Gas - Statistical Information
C-383 - P-10-A Expansion - Statistical Info.
C-394 - Plot Plan and Utilities HW Lab Area Statistical Information
C-399 - P-10-C Part 1 - Prototype Metal Tritium Extraction Units; P-10-D Hot Development Facilities & Building Modifications

OUTSIDE BARRICADE

Highway Crossing Over Yakima River - Statistical Information
Yakima River Bridge & Approaches - Statistical Information
C-127 - 100 Additional Lines at 300 Area Telephone Exchange
C-138 - Conversion of Richland Exchange to Automatic Dial Operation
C-144 - Add. Tele. Cables for Richland
C-177 - 115 kv Trans. Line & Substations
C-185 UP Railroad Connection
C-265 - Add. Tele. Trunk Cable - Richland to Kennewick
C-276 - Installation of Overall Plant Telephone Facilities
Work to prepare Existing Timber Trestle Across Yakima River to Take Bailey Bridge Units & Erection of Bailey Bridge

CONTRACTOR YARD AND WHITE BLUFFS

Contractor's Yard
C-281 - R - White Bluffs Central Shops - Statistical Information
Plot Plan

CONSTRUCTION STATUS

LIST OF DIRECTIVES

Directives, Chronologically Arranged
Bulletin HA-3
List of Project Sponsors

CONSTRUCTION COST

UNIT COSTS

Current Minutes of Joint Unit Cost Committee
Unit Costs - Hanford
Approximate Average Unit Cost of Concrete
Extract of Unit Costs from Unit Price Contracts (Direct Costs Only)

OVERHEAD DISTRIBUTION

Indirect Manufacturing Expense
Construction Cost Accounting
Schedule of Overhead Incurrence - 3 Major Construction Projects

ORIGINAL ESTIMATES VS. FINAL COST

D&C Summary of Project Costs
D&C Summary of Major Constr. Projects
D&C Reconciliation of Directive Cost

CURRENT SUBCONTRACTOR EXPENDITURES

Weekly Statement of CPFF Subcontractor Expenditures
Commitments & Expenditures under Contract
W-31-109-Eng-52

SCHENECTADY COST TRANSFERS

Statement of Costs Transferred from KAPL

CURRENT D&C COST REPORT

D&C Summary of Expenses
Cost Report on Changes in Plant & Equip.

Current Schedules

Const. Schedules & Manpower

V A.

General

VOLUME 4

CONSTRUCTION SCHEDULES & MANPOWER

CURRENT SCHEDULES

Second Construction Program at HW
Current Est. for Constr. Projects in Progress or to be authorized in FY 1951
Schedule for Constr. of Major Elements of Program

FORECASTS

Third Survey of Constr. - Manpower Curve
Third Survey of Constr. - Est. Average Construction Employment
Third Survey of Constr. - Est. Cost Incurrence

CONSTRUCTION PROJECTS

INSIDE BARRICADE

Develop. of New Pile Area-R&D Authorization-Statistical Information
Galvanic Corrosion of Waste Lines
HW Laboratory Area-Statistical Information
HI Control & Development Laboratory-Statistical Information
New Pile Area H-Design of Water Plant
P-10-X - Statistical Information
Pile Technology Building-Statistical Info.
Radiochemistry Building-Statistical Info.
Radiometallurgy Building - Statistical Info.
C-165A-New Pile Area H - Statistical Info.
C-187-C - Redox Test Plant Area - Statistical Information
C-187-D - Redox Production Plant - Statistical Information
C-187-E - Redox Analytical & Plant Assistance Lab. & Associated Waste Disposal Facilities-Statistical Information
C-198 - 234-5 Building Program-Total Costs
C-198 - 234-5 Building Program-Statistical Information
C-206A - Replacement Pile 100-DR - Statistical Information
C-267 - Reconstruction of 101 Area - Statistical Information
C-295 - Enlarging 251 Substation-Add. 13.8 kv Feeders to 200E and 200W
C-337 - Dissolver Off-Gas Filtration for Buildings 221-T and B-Statistical Info.
C-342 - DR Water Works-Statistical Info.
C-349 - Hot Semi-Works-Statistical Info.
C-361 Metal Conversion Facilities-Statistical Information
C-362 - Waste Metal Removal & Recovery Facilities- Statistical Information
C-368 - P-10-B - Statistical Information
C-378 - Iodine Removal Facilities for Dissolver Off-Gas - Statistical Information
C-383 - P-10-A Expansion-Statistical Info.
C-394 - Plot Plan and Utilities HW Lab Area Statistical Information
C-399 - P-10-C Part I-Prototype Metal Tritium Extraction Units; P-10-D Hot Development Facilities & Building Modifications

OUTSIDE BARRICADE

Highway Crossing Over Yakima River - Statistical Information
Yakima River Bridge & Approaches - Statistical Information
C-127 - 100 Additional Lines at 300 Area Telephone Exchange
C-138 - Conversion of Richland Exchange to Automatic Dial Operation
C-144 - Add. Tele. Cables for Richland
C-177 - 115 kv Trans. Line & Substations
C-185 UP Railroad Connection
C-265 - Add. Tele. Trunk Cable - Richland to Kennewick
C-276 - Installation of Overall Plant Telephone Facilities
Work to prepare Existing Timber Trestle Across Yakima River to Take Bailey Bridge Units & Erection of Bailey Bridge

CONTRACTOR YARD AND WHITE BLUFFS

Contractor's Yard
C-281-R - White Bluffs Central Shops - Statistical Information
Plot Plan

CONSTRUCTION STATUS

LIST OF DIRECTIVES

Directives, Chronologically Arranged
Bulletin HA-3
List of Project Sponsors

CONSTRUCTION COST

UNIT COSTS

Current Minutes of Joint Unit Cost Committee
Unit Costs - Hanford
Approximate Average Unit Cost of Concrete
Extract of Unit Costs from Unit Price Contracts (Direct Costs Only)

OVERHEAD DISTRIBUTION

Indirect Manufacturing Expense
Construction Cost Accounting
Schedule of Overhead Incurrence - 3 Major Construction Projects

ORIGINAL ESTIMATES VS. FINAL COST

D&C Summary of Project Costs
D&C Summary of Major Constr. Projects
D&C Reconciliation of Directive Cost

CURRENT SUBCONTRACTOR EXPENDITURES

Weekly Statement of CPFF Subcontractor Expenditures
Commitments & Expenditures under Contract
W-31-109-Eng-52

SCHENECTADY COST TRANSFERS

Statement of Costs Transferred from KAPL

CURRENT D&C COST REPORT

D&C Summary of Expenses
Cost Report on Changes in Plant & Equip.

Current Schedules

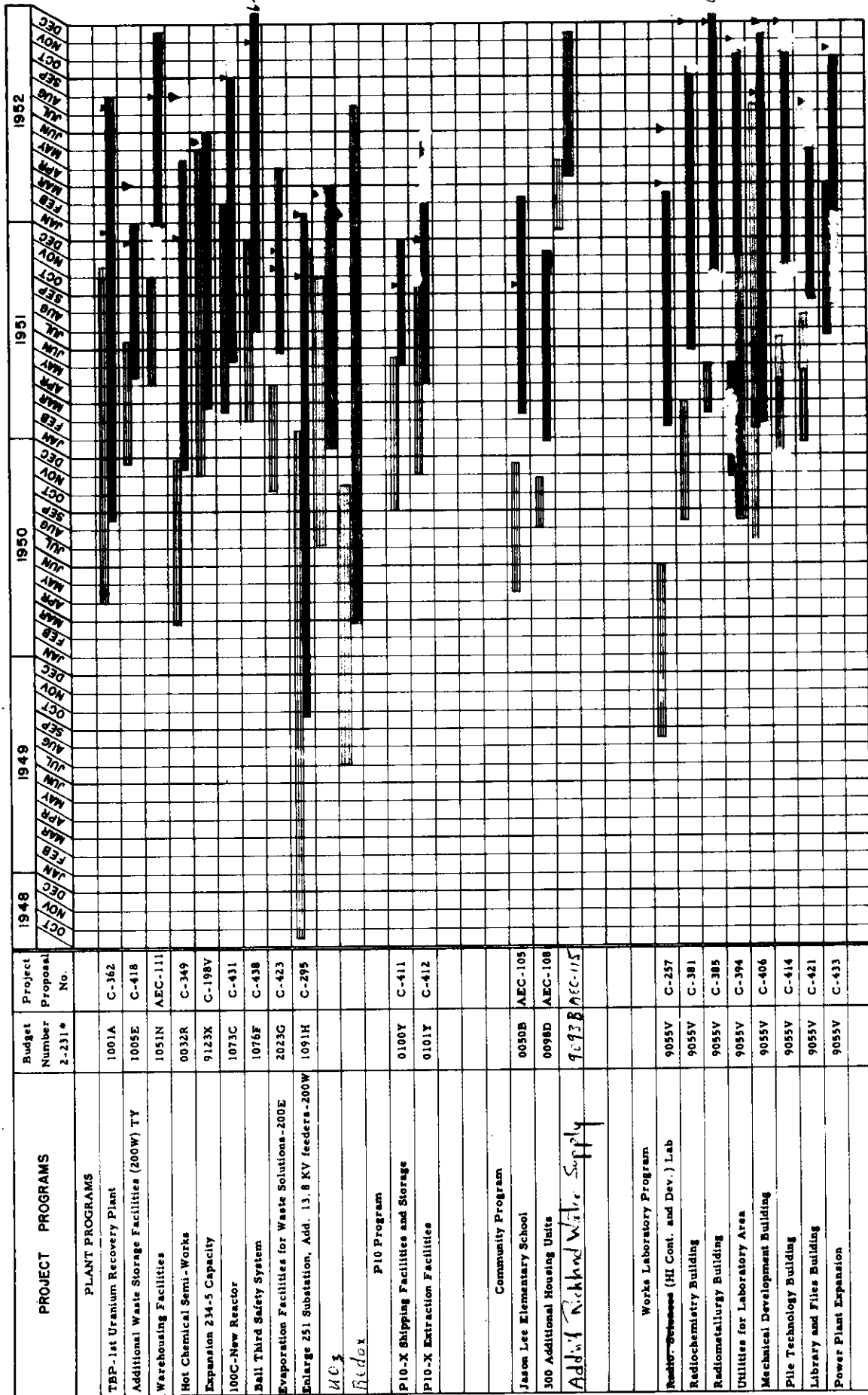
Const. Schedules & Manpower

DESIGN AND CONSTRUCTION SCHEDULE

PROJECTS OVER \$ 500,000 UNDERWAY NOVEMBER 1, 1951

DECLASSIFIED

HAN-41652



*Community Budget Numbers 7-231-

DESIGN
FULL OPERATION
CONSTRUCTION

Physics

200

85

IV A

General - Comparative Data 1946 and 1949



Forecasts

ESTIMATED CONSTRUCTION COST INCURMENTS

Source and Placible Materials, Roads, and Community Construction

	(Amounts in Thousands of Dollars)		
	FY 1952	FY 1953	FY 1954
July	\$ 10,901	\$ 6,777	\$ 1,620
Aug.	11,689	4,782	1,637
Sept.	12,865	4,872	1,367
Oct.	12,848	4,317	843
Nov.	12,863	4,348	632
Dec.	13,263	4,887	200
Jan.	12,452	3,876	86*
Feb.	11,456	3,807	
Mar.	11,207	2,911	
Apr.	10,486	2,628	
May	10,088	2,317	
June	8,425	2,001	
Total	\$138,643	\$46,783	\$ 6,405

~~Actual cost through 6-30-51 - \$76,346~~
~~Currently Estimated Total Cost - \$277,877~~

* To Completion

~~SECRET~~

ESTIMATED CONSTRUCTION COST INCURRENCE

Source and Missionable Materials, Weapons and Community Construction

	<u>F. Y.</u> <u>1952</u>	<u>F. Y.</u> <u>1953</u>	<u>F. Y.</u> <u>1954</u>
	(Amounts in Thousands of Dollars)		
July		\$ 8,569	\$ 1,510
August		7,231	1,415
September		7,310	1,159
October		6,207	979
November		4,893	631
December	\$158,369 (July.-Dec.)	3,712	431
January	12,278	3,134	385
February	11,109	2,510	310
March	10,822	2,486	300
April	10,780	2,409	300
May	10,082	2,289	150
June	9,293	1,857	70
TOTAL	\$222,733	\$52,807	\$ 7,610

NOTE: Total from January 1952 through June 1954 is \$124,811,000.

Data from Sixth Survey of Construction

~~SECRET~~

3000 Ave. J, New York, N.Y.

[illegible]

WAD-4165

FIFTH SURVEY OF THE CONSTRUCTION PROGRAM - AVERAGE EMPLOYMENT
HARTFORD OPERATIONS OFFICE

ESTIMATED AVERAGE CONSTRUCTION EMPLOYMENT ON SITE

		FY-1953													
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June		
140	140	270	270	270	270	270	270	270	270	270	270	270	270	270	270
150	150	210	210	210	210	210	210	210	210	210	210	210	210	210	210
90	90	30	30	30	30	30	30	30	30	30	30	30	30	30	30
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
7	7	5	5	5	5	5	5	5	5	5	5	5	5	5	5
277	388	725	965	850	935	785	770	815	800	840	875	745	645	195	40

colliers	4	10	2	2	2	2	2	2	2	2	2	2	2	2	2
	35	23	8	4	4	4	4	4	4	4	4	4	4	4	4
	80	108	105	125	117	121	121	121	121	121	121	121	121	121	121
	117	112	115	131	131	131	131	131	131	131	131	131	131	131	131

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Construction Data Sheets

AEC - E&C Division
8-1-51
Sheet 1, Sec. I

PROJECT COORDINATORS

Note: Projects are assigned to Sections only, identifying the Section by the name of the Section Chief. Alternate coordinators are not assigned by name, it being the responsibility of the Section Chief to keep currently informed on all projects assigned to his section and to delegate projects within his section according to the workload. In the absence of the Section Chief one of the members of his section will be designated by him to act for him.

<u>Project Number</u>	<u>Directive Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
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SECTION I: MAJOR PROJECTS (REPEATED IN DETAILED LIST)

C-431R-2	HW-222	100-C Facilities	Lowe
C-187D	HW-99	Redox Production Plant	Parker
C-187E	HW-124	Redox Laboratory	Lowe
C-361	HW-158	Metal Conversion Facilities	Parker
C-362	HW-160	Waste Metal Recovery Facilities	Parker
C-349	HW-150	Hot Semi-Works	Parker
All	All	Works Laboratory Area	Lowe
C-413	HW-211	234-5 Expansion	Musser
- -	RSD-1	Chief Joseph Junior High	Reith
AEC-105	RSD-2	Jason Lee School	Reith
AEC-108	AEC-7	300 Houses	Reith
AEC-106	AEC-6	Yakima (Geo. Washington) High-Way Bridge	Brumley
C-448	HW-234	Rehabilitation of 1341 Prefabs	Elkins
- -	- -	Engineering for BPA Service	Crow

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AEC-E&C Division
8-1-51
Sheet 2, Sec. II

<u>Project Number</u>	<u>Directive Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
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SECTION II: ATOMIC ENERGY COMMISSION ADMINISTERED PROJECTS

- -	RSD-1	Chief Joseph Junior High School	Reith
AEC-103	AEC-4	703 Bldg. Addition, Phase I	Reith
AEC-105	RSD-2	Jason Lee Elementary School	Reith
AEC-106	AEC-6	Yakima South Highway Bridge	Brumley
AEC-107	AEC-3	Underground Geological & Hydro- logical Investigation	Musser
AEC-108	AEC-7	Fourth Housing Addition - 300 Family Units	Reith
- -	Benton County	Raising & Widening Access Road Yakima River to Richland "Y"	Brumley
AEC-111	AEC-8	Central Stores Warehouse	Reith
AEC-112	AEC-9	Central Fire Station	Reith
Not Assigned	Not yet Issued	Consolidation of Transportation Facilities (B-1853)	Reith

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AEC- E&C Division
8-1-51
Sheet 3, Sec. III

<u>Project Number</u>	<u>Directive Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
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SECTION III: PROJECTS AUTHORIZED BY HANFORD WORKS DIRECTIVES

C-187D	HW-99	Design & Construction of Redox Production Plant	Parker
C-187E	HW-124	Design & Construction of Redox Analytical & Plant Assistance Laboratory	Lowe
C-192R	HW-130	Remodel Bldg. 108F for Biology Laboratory	Musser
C-198V	HW-12	234-5 Bldg. (Phases II & III)	Musser
C-199	HW-8	Expansion of Sanitary Sewage System - 300 Area	Brumley
C-204B	HW-20	Richland Hospital Additions	Elkins
C-257	HW-65	H.I. Control & Development Lab	Lowe
C-282R	HW-133	Richland Community Dust and Pollen Control Program	Elkins
C-289	HW-91	Additional Laundry Facilities 200 Area - Bldg. 2724	Luckey
C-295	HW-92	Enlarging 251 Substation & Additional 13,8 Feeders	Rhyneer
C-337	HW-137	Disolver Off-Gas Filtration 221 T and B	Musser
C-340	HW-139	P-11 Project, Parts II & III (Part I accepted with exceptions 4-5-50)	Lowe
C-341	HW-145	Additions to Richland Village Electrical Distribution System	Rhyneer
C-346	HW-147	Facilities for Exponential Experiments (P-12)	Lowe
C-349	HW-150	Hot Semi-Works	Parker

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AEC - E&C Division
8-1-51
Sheet 4, Sec. III

<u>Project Number</u>	<u>Directive Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
C-351R	HW-159	Installation of Irrigation System Public Grounds	Elkins
C-353	HW-152	Richland Water Supply	Brumley
C-356R	HW-169	Recreation Facilities - Equip- ment for Schools & Public Parks	Reith
C-357	HW-161	Additional Capacity of Richland Sewage Lift Station	Elkins
C-360	HW-232 Not Yet Issued	Arsonal Bldg., Fire Protection & Sanitary Facilities - Patrol Range	Reith
C-361	HW-158	Metal Conversion Facilities	Parker
C-362	HW-160	Waste Metal Recovery Facilities (TBP)	Parker
C-364	HW-185	Aquatic Biology Building	Lowe
C-371	HW-173	Meteorological Field Stations	Musser
C-376	HW-170	Installation of Irrigation Late- rals with Sprinkler Units to Complete Irrigation Systems - Carmichael Jr. High and Spalding Schools	Elkins
C-377R	HW-179	New Instrument Maintenance and Development Bldg. 300 A	Luckey
C-378	HW-172	Iodine Removal Facilities for Dissolver Off-Gas (200 E&W Areas)	Musser
C-380R	HW-187	Electricity Metering - Village of Richland	Rhynoer
C-381	HW-174	Radiochemistry Bldg. Hanford Works Laboratory	Lowe
C-382	HW-176	Additional Water Supply and Sewage Facilities - Well 1100-D, Duke Field Area	Elkins

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AEC - E&C Division
8-1-51
Sheet 5, Sec. III

<u>Project Number</u>	<u>Directive Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
C-385	HW-182	Design and Construction of Radiometallurgy Bldg. Hanford Works Laboratory	Low
C-394	HW-191	Hanford Works Laboratory Area Plot Plan & Utilities	Low
C-398	HW-198	Experimental Coating Hood, Bldg. 234-5, 200 West	Musser
C-399	HW-199	P-10-C, Part I (Metal Prototype- Unit); P-10-D ("Hot" Development Facilities)	Low
C-400	HW-200	Reroofing, Painting & Siding of 700 Area Bldgs.	Elkins
C-401	Not yet issued	Addition to Bldg. 3702	Musser
C-402	HW-213	Salvage & Recovery of Tele- phone Cable & Exchange Equipment	Rhynoor
C-403	HW-203	New Fences for Distribution & 230 KV Substation	Rhynoor
C-404	HW-201	Primary Electric Power Lines for Hanford Works Laboratory	Rhynoor
C-405	Not yet Issued	Application of Asbestos Siding on A-J Type Houses	Reith
Y-7.5	- - -	Permanent Levees (U.S. Engineers, Walla Walla District)	Brumley
C-406	HW-204	Mechanical Development Building Hanford Works Laboratory	Low
C-407	HW-207	Bathtub, tileboard, and Linoleum Installation 206 Conventional Type Houses	Elkins
C-408	H.-208	Additional Erosion Control and Irrigation of Public Areas - Shelterbelt Planting and Irri- gation	Reith

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AEC - E&C DIVISION
8-1-51
Sheet 6, Sec. III

Project Number	Directive Number	Project Title	Project Coordinator
C-409	HW-206	Riverland Elevated Water Tank	Musser
C-410	HW-205	Inpile Controlled Atmosphere Experimental Facilities	Lowe
C-411	HW-210	P-10-X "J" Slug Storage and Shipping Facilities	Lowe
C-412	HW-209	P-10-X Extraction Facilities	Lowe
C-413	HW-211	Expansion of 234-5 Capacity (RMA & RMB)	Musser
C-414	HW-212	Pile Technology Building - Hanford Works Laboratory	Lowe
C-416R-2	HW-217	Construction Division, D&C Combined Shops	Luckey
C-417	HW-216	Additional Waste Storage Facilities - 200 E Area - 241-BZ (Note: Deferred indefinitely)	Parker
C-418	HW-215	Additional Waste Storage Facilities -200 West Area -241-IV	Parker
C-419	HW-226	Experimental Induction Heating	Lowe
C-420	HW-218	CO ₂ Bulk Storage Facilities 105-E, F and D-DR Areas	Musser
C-421	HW-219	Library and Files Building	Lowe
C-422	HW-223	Skull Recovery Facilities for Bldg. 234-5	Musser
C-423	HW-221	Additional Waste Evaporation Facilities - 200 East Area	Musser
C-424	HW-220	Water Quality Experimental Program	Lowe
G-425R	HW-227	1951 Park Development Program	Reith

Project Number	Directive Number	Project Title	Project Coordinator
C-426	HW-224	Additions and Alterations to Existing Streets and Additional Sidewalk, Curb, and Gutter Construction, Richland - FY 1951	Reith
C-429	Directive not required	Exterior Painting of 243 Conventional Type Houses	Elkins
C-430R	HW-241	Improvement of Lighting 703 Building	Rhyneer
C-431R-2	HW-222	1000 Facilities	Lowe
C-432	HW-225	Air Raid Warning System - Richland - North Richland	Rhyneer
C-433	HW-229	Expansion 300 Area Power House & Pumping Station Facilities	Brumley
C-434R	HW-243	New Bio-Assay Laboratory	Lowe
C-438	HW-230	Ball 3-X Facilities for 105 B-D-DR-F & H	Musser
C-440	HW-231	Alterations 712-A Bldg.	Reith
C-441	HW-246	Solvent Building	Qualheim
C-442	HW-236	X-Ray Machine 3745-A	Lowe
C-443	HW-255	Addnl Line Equip. & Conversion to 4-party Service - Richland Telephone Exchange	Rhyneer
C-444	HW-233	Addnl Unit to Supplement Operation Hood 26	Musser
C-445	HW-237	B-Y Telephone Exchange Addns.	Rhyneer
C-446	HW-239	Addnl. Effluent Disposal Facilities, Bldg. 234-5	Musser
C-447	HW-240	Portable Meteorological Mast	Musser

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AEC - E&C Division
8-1-51
Sheet 8, Sec. III

<u>Project Number</u>	<u>Directive Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
C-448	HW-234	Rehabilitation of 1341 Prefabs	Elkins
C-450	Not yet Issued	Roads & Walks - 700 Area	Brumley
C-451	Not yet Issued	Extension of 300 Area Under- Ground Electric Power Distribution System	Rhyneer
C-452	HW-238	Meteorology Tower Elevator	Musser
C-454	HW-249	Spectrometer Shielding	Musser
C-455	HW-248 Not yet Issued	Replace Two Elevated Storage Tanks in 200 East Area	Musser
C-456	HW-247	Addnl. 13-Quad Telephone Cable from B-Y Exchange to Point "I"	Rhyneer
C-457	HW-256	Pile Tech. Office Building	Lowe
C-462	HW-251	Miscellaneous Service Additions, Richland Telephone Plant, FY 1952	Rhyneer
C-463	HW-252	Miscellaneous Service Additions Richland Electric Distribution System, FY 1952	Rhyneer
C-464	HW-250	Miscellaneous Service Additions Process Area Telephone Plant FY 1952	Rhyneer
C-465	HW-253	Miscellaneous Service Additions Process Area Electrical Distribution System	Rhyneer
C-466	HW-254	230 KV Disconnect Servicing Devices	Rhyneer

AEC - E&C Division
8-1-51
Sheet 9, Sec. IV

Informal Request Number	Project Title	Project Coordinator
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SECTION IV - INFORMAL REQUESTS

IR-18	Vertical Safety Rod - Corrective Design 105-B, D & F	Musser
IR-38	Radio Communication System - Richland Fire Division	Rhynoer
IR-43	Health Monitoring & Storage Facilities - Building 111-B	Musser
IR-45	Procurement of Electron Microscope	Lowe
IR-47	Steam Pit Re-Arrangement in Dormi- tories	Brumley
IR-58	Transformer & Circuit Breaker Oil Reprocessing Facilities	Rhynoer
IR-62	Exterior Painting - Hospital, Medical- Dental, and Municipal Buildings	Elkins
IR-64	Improved Lighting in 705 Building	Rhynoer
IR-67-B	Consolidated Maintenance Shops 200 W	Musser
IR-69	Additional Erosion Control Street Tree Planting	Reith
IR-71	Beta Water Monitors for 107-B, D & F Effluent	Musser
IR-75	Irrigation Ditch Fencing - Wright Avenue to Van Gieson	Brumley
IR-76	Construction of Test Facilities for Charging and Recharging Machines in Connection with Des. & Develop. of New Pile Area "G"	Lowe
IR-77	Non-Routine Maint. Bremerton Houses and Tract House J-641 - N. Richland Construction Camp	Elkins

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AEC - E&C Division
8-1-51
Sheet 10, Sec. IV

<u>Informal Request Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
IR-78	Service Access Panels - U & V Type Precut Houses	Reith
IR-81	Fencing Riverside Park	Reith
IR-82	Miscellaneous Service Additions - Richland Electrical Distribution System	Rhyneer
IR-83	Alteration of Records Service Center to Provide Control Center for Richland Civil Defense	Reith
IR-84	Additional Water, Sewer and Fire Pro- tection Facilities, Richland, Washington	Brumley
IR-85	200-West Area Badge House Addition	Musser
IR-87	Vacuum Leak Detectors, Bldg. 234-5	Musser
IR-88	X-Ray Analysis Facilities for Graphite Studies	Lowe
IR-89	HF Filters for Hood & Exhaust System Building 234-5	Musser
IR-90	Replacement of Dry Waste Disposal Crib - Bldg. 222-T	Musser
IR-92	Additional Water & Fire Protection Facilities Guthrie - Williams 8" Water Main Connecting Loop	Brumley
IR-93	Telephone Cable Line White Bluffs Exchange to Minor Construction Div- ision Shop Area	Rhyneer
IR-95	Final Shapo Machining Equipment, Bldg. 234-5 RG Line	Musser
IR-97	Underwater Repair Facilities	Musser
IR-98	Bond 230 KU Tongent Structures	Rhyneer

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AEC-E&C Division
8-1-51
Sheet 11, Sec. IV

Informal
Request
Number

Project Title

Project
Coordinator

IR-99	Provision of Space for Relocation of IBM Computing Laboratory	Lowe
IR-100	Non-Routine Maintenance - Painting Buildings in Administration Area, North Richland	Reith
IR-101	Retention Basin Sumps, 100 B and F Areas	Musser
IR-102	Special Ventilation Equipment and Partitions, 111-B Building	Musser

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AEC-E&C Division
8-1-51
Sheet 12, Sec. V

<u>Budget Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
B-2033	Redox Plant Modifications for In- creased Production Capacity	Parker
B-544R	Replacement Sewer Line from 105B to 107B	Musser
B-892	Car Puller and Shake-Out	Musser
B-821) B-2000) B-2024) B-2030)	File and File Water Plant Improvements	Musser
B-2031	Turbine and Pump Efficiency Improvement 100 B, D, and F	Musser
B-1966	Ruptured Slug Handling Equipment 105 B, D, F, DR and H	Musser
B-1967	Effluent Water Monitoring Improvements B, D, F, DR and H	Lowe
B-1987	File Atmosphere Handling Facilities	Lowe
B-1829	Settling Tank for Section 5 Wastes Building 222-T and B	
B-1894	Additional Storage Tanks for Liquid Chemicals - 211 Tank Farm	Parker
B-1900) B-1916) B-1998)	Additional Waste Facilities for 224-T and B Concentration Building	Parker
B-1820	Consolidated Maintenance Shops - 200 West	Musser
B-2032	Expansion of 200 West Area Power House	Brumley
B-844	Equipment - Induction, Heating and Slug Transformation	Lowe
B-1822	Ventilation Control of Airborne Contam- ination Buildings 313 and 314	Musser

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AEC - E&C Division
8-1-51
Sheet 13, Sec. V

<u>Budget Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
B-1988	Phase Transformation Determination Equipment	Musser
B-2025) B-2035)	Slug Canning and Inspection Process Improvements	Musser
B-879	300 Area - General Improvements	Lowe
2-231- 2050N	Additional Maintenance Shop Facilities Minor Construction	Brumloy
B-1016	Laboratory Facilities - Special Pile Measurements	Lowe
B-1132	Neutron Monitoring Instrument Calibration Facilities	Musser
2-231- 0089	Miscellaneous Projects Under \$100,000	Brumley
2-231- 2005	Misc. Improvements & Alterations to Existing Plutonium Facilities (1952)	Musser
B-1022	P-10 Storage Room - 100-B Area	Lowe
2-231- 3020D	Redox Plant Additions for Increased Production Capacity	Parker
2-231- 3022E	Additional Waste Storage Facilities	Parker
B-2002	Enlarge Bore of Tube Bearing Blocks - B, D, and F	Lowe
2-231- 3024G	212 Decay Storage Facilities	Parker
B-2042	Stack Gas Purification - 200 Areas	Musser
B-584	Automatic Machining Equipment	Musser
B-1964	Facilities for Swaging Uranium Rolled Rods	Musser

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AEC - E&C Division
8-1-51
Sheet 14, Sec. V

<u>Budget Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
B-2006	Electrical Distribution Headquarters - Process Areas	Rhyneer
B-1853	Consolidation of Transportation Fac- ilities Construction	Reith
B-846	Administration Building - Manufacturing Divisions - 300 Area	Musser
2-231- 3031	Miscellaneous Improvements and Alterations to Existing Plutonium Facilities (1953)	Lowe
2-231- 3032N	Additions to Building 703, Phase II	Reith
B-824	Recovery Processes for Bldg. 234-5	Musser
2-231- 3033N	Central Warehouse, Phase II	Reith
B-884	Duct Level Flooring 234-5	Musser
B-2036	Convert 234-5 Wet Chemical Facilities to Revised Process	Musser
B -1912	Facilities for Final Shape Machining, RMA and RMB	Musser
6-231- 3019	Underground Geological and Hydrological Investigation (1953)	Musser
B-1438	Irrigation Ditch Fencing, South of Carmichael Jr. High	Reith
B-1449	Additional Fire Protection - New School, Hotel and Theatre	Brumley
B-1421) B-1466)	Improvements to Existing Streets	Reith
B-1444) B-1467)	Erosion Control and Development of Public Areas (1952)	Reith

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AEC - E&C Division
8-1-51
Sheet 15, Sec. V

Budget Number	Project Title	Project Coordinator
B-1202	Water Sprinkler System - Hospital Grounds	Reith
B-1425	Roof Replacement - South Reservoir	Brumley
B-1451	Diversion Sewage System - Plant #1 to Plant #2	Brumley
B-2007	Electrical Distribution Pole & Anchor Log Replacements (1952)	Rhyneer
B-1479	Steam Line Pole Replacements (1952)	Brumley
7-231-2032C	Extension of Utility Lines to Additional Churches (1952)	Reith
7-231-1070E	Expansion - Additional Commercial Areas (1951 and 1952)	Reith
B-1470	Richland Control Center - Civil Defense	Reith
B-1471	Air Raid Shelters - Richland	Reith
7-231-2018B	Addition to Lewis and Clark Grade School	Reith
7-231-2019B	Fire Alarm System - Richland School Bldgs.	Rhyneer
7-231-2020B	Dust Removing Equipment - Carmichael Jr. High	Reith
7-231-2021B	Black Top Play Area - Lewis & Clark Grade School	Reith
7-231-2036D	500 Additional Family Dwelling Units	Reith
B-1472	Improvements to Existing Streets (1953)	Brumley
B-1474	Erosion Control and Development of Public Areas (1953)	Reith
B-1476	Concrete Steps & Service Walks to 552 Houses (1953)	Reith
B-1477	Automatic Sprinkler System - Dormitories	Reith

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AEC - E&C Division
8-1-51
Sheet 16, Sec. V

<u>Budget Number</u>	<u>Project Title</u>	<u>Project Coordinator</u>
B-1485	Automatic Sprinkler System - Geo. Wash. Apartments	Reith
B-1481	Well House & Irrigation Pump House Fencing	Brumley
B-1482	Fluoridation Equipment Installation	Brumley
B-1483	Rebuild Parshall Flume - 1182 Water Supply	Brumley
B-2008	Electrical Distribution Pole and Anchor Replacements (1953)	Rhyneer
B-1486	Steam Line Pole Replacements (1953)	Brumley
B-2012	Miscellaneous Service Additions - Richland Electrical Dist. System (1953)	Rhyneer
B-2013	Miscellaneous Service Additions - Richland Telephone Plant (1953)	Rhyneer
7-231- 3013C	Extension of Utility Lines to Additional Churches (1953)	Reith
7-231- 3014E	Expansion - Additional Commercial Areas (1953)	Reith
7-231- 3016B	Maintenance Shop and Warehouse - Richland School District	Reith
7-231- 3017B	Concrete Step Guard Rails - Carmichael Jr. High	Reith
7-231- 3018B	Black Top Play Area - Jefferson Grade School	Reith

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100 Areas


DECLASSIFIEDC PILE AND WATER WORKS
(in B Area)

Project Number C-431 A & B

Directive Number HW-222

Description

Pile Building and pile similar to H Pile -- except 650 M.W. Design Power level.

Water Works -- similar to DR, 62,000 GPM installed equipment. Lines sized for 80,000 GPM. Joint use of misc. features with B pile.

Pile Building:

Steel plate	4,000 tons
Graphite	2,700 tons
Aluminum	26 tons
Cast Iron	1,260 tons
Lead	200 tons
Reinforcing steel	1,000 tons
Structural steel	800 tons
Saran tubing	360,000 feet
Copper tubing	250,000 feet
Stainless steel tubing	90,000 feet
Concrete	22,200 cubic yards
Forms	615,000 square feet
Earth work	50,000 cubic yards

Water Works:

Concrete	70,000 cubic yards
Reinforcing steel	3,000 tons
Earth work	480,000 cubic yards
Forms	750,000 square feet
Structural Steel & Misc. Iron	2,600 tons

Indicated Final Cost: \$63,000,000 - Latest GE Estimate.



AEC-HOO-Eng. and Constr. Division

G. W. Wyss - Sponsor C-431-A/9-51

J. F. Kaufmann - Sponsor C-431-B/9-51


P-10 Facilities

DECLASSIFIED

FINAL PROTOTYPE EXTRACTION LINE (1-10-51) AND INSTRUMENT DEVELOPMENT

Project Number C-399

Directive Number HW-199

Completed August 31, 1951.

100-B Building:

One Prototype Extraction Line of stainless steel, and two extraction furnaces.

Instrument Development Room.

Battery Room for emergency power.

Ventilation fan in an addition to 100-B Building.

Architectural and other necessary changes in piping, electrical, and ventilation systems.

Modification of the existing five glass extraction lines.

Analytical, Development and Health Instrumentation.

Outgassing Furnaces.

Single story wood frame office building -- 106' x 36' -- 3,800 square feet.

200 linear feet of concrete block partitions - 10' high.

600 square feet of floor space for exhaust fan in a one-story building addition.

300 feet ventilation stack.

Piping and electrical services.

300 feet of new ventilation ducts.

Original Estimated Cost: \$1,000,000

Indicated Final Cost: \$1,716,000*

*Overrun due in part to increase in scope.

AEC-HOO-Eng. and Constr. Division
WHLore-Spencer/10-51

DECLASSIFIED

P-10-X EXTRACTION FACILITIES
(108B Building)

Project Number C-412

Description:

To modify and improve existing tritium production and storage facilities.

Metal stripper line to purify air contaminated tritium from metal line.
Modification of glass line No. 2 to purify air contaminated tritium from glass lines.
Second metal extraction line constructed by the Laboratory, held in Schenectady as a spare.
Bomb resistant tritium storage building of reinforced concrete.
Product container outgassing facilities to evacuate and vacuum test stainless steel storage containers.
Hot maintenance and instrument shop for repair of vacuum, electronic, and mechanical equipment.
H. I. facilities for analysis of tritium in urine and air.
Metallurgical facilities to investigate reaction of tritium byproducts upon components of the metal extraction line and to make metallurgical studies of irradiated lithium aluminum alloy slugs.
Provision of the following associated facilities:
Air monitors
Fresh air masks
Slug drying facilities
Casks for irradiated lithium aluminum slugs
Contaminated disposal grounds
Air samplers
Air mask washing facilities
Storage for operating supplies
Laboratory work shop and renovation of womens' lounge
Fire protection facilities

108-B Building:

Basement - Laboratory work shop
First floor - H.I. lab, 475 sq. ft.
Operating Supplies and misc. storage, 900 sq. ft.
Product container outgassing area, 355 sq. ft.
Metallurgical laboratory, 600 sq. ft.
Conversion of existing glass line to stripper.
Second Floor - Air mask washing facilities, 100 sq. ft.
Third Floor - Hot maintenance and instrument shop, 390 sq. ft.
Health Instrument station, 104 sq. ft.
Metal Line stripper
Machinery Platform (4th floor) - Air monitoring & fresh air mask supply system.

Product Storage Building: - 14½' x 27' x 12' high, located northwest of 108-B, to hold 63 vacuum shipping tanks each containing about 25,000 curies of tritium.

(continued)

DECLASSIFIED

Project No. C-412

- 2 -

Original Estimated Cost: \$2,822,000

Present Working Estimate: \$1,550,000 *

*Working estimate is lower because scope of work was changed. Original plan was to put manufacturing type facilities in 108-D to include two metal lines. New plan based on reduced production requirements is to use the prototype metal line in 108-B for production and to build only one other metal line (which will not be installed).

[REDACTED] [REDACTED]

P-10-X "J" SLUG STORAGE AND SHIPPING FACILITIES
PROJECT NUMBER C-411

DECLASSIFIED

Storage of irradiated J Slugs and shipping facilities to Arco where the 235 content will be recovered.

350 storage buckets borrowed from other areas and modified with inserts.
350 bucket hangers and trolleys.
350 stainless steel bucket inserts.
200 stainless steel shipping buckets to hold 66 J slugs each which fit inside offsite shipping casks.
25 hangers for shipping buckets.
4 - 20,000 lb. lead shielded shipping casks.
Modification of one truck-trailer to accommodate shipping casks.
Shipping cask decontamination pad and auxiliary facilities.
H. I. instruments.
5 sets of trailer tie down facilities.
Garrett Freight Lines will do the hauling.

Features:

Fabrication of four 20,000 lb. lead shielded casks.

Minor architectural changes such as moving cask elevator exhaust and construction of concrete slabs on which to place shipping casks.

Original estimated cost: \$2,935,000

Present working estimate: \$270,000*

*Scope of work drastically reduced because critical mass experiments indicate it is safe to ship 66 J slugs in one batch rather than 18 as prescribed by former nuclear safety regulations. This and the reduced production goals, and truck rather than train shipments, make it possible to accomplish transfer of all J slugs to Idaho with 4 rather than 54 shipping casks.

Former plans entailed provision of a \$1,000,000 storage area which is no longer necessary.

[REDACTED]

[REDACTED]

200 Areas

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DECLASSIFIED

234-5 BUILDING PROGRAM

Project No. C-198-V

Directive No. HW-12

PU Production.

Main building is two-story steel-frame and aluminum siding. First and second floors (each 66,000 square feet) are separated by a duct level used for ventilation ducts, piping, and electrical controls.

The project is being constructed in three phases. Phase I, now complete, consists of all building and outside waste disposal and other facility construction and installation of a rubber glove process line. Phase II consists of the installation of certain additional laboratories and shops within the building. Phase III consists of the design, fabrication and installation of a remote mechanical process line and certain auxiliaries. Design and fabrication is being done in Schenectady. Installation is being made in a space provided within the building. Phases II and III were financially closed out as of 6/30-51 with remaining work items being completed on outstanding work orders.

Phase I also included a first aid building, an addition to the 283-W Filter Plant, an addition to the 284-W Boiler House, an office building and two 13.8 Kv power lines; all completed.

Original Estimated Cost:

The original estimated cost was \$6,255,000. This was subsequently increased to \$6,314,000, \$8,760,324, and finally to \$24,950,000.

Cumulative Report for Period Ending June 30, 1951:

Total Cost for Phase I	\$19,112,556
Total Cost for Phases II and III (From Cumulative Report for Period Ending 6-30-51)	<u>4,934,860</u>
Total Cost to 6-30-51 (Recorded on Accountant's Books)	\$24,047,416
<u>Indicated Final Cost:</u>	<u>\$24,207,494</u>

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~~RESTRICTED DATA~~
This document contains restricted data as
defined in the Atomic Energy Act of 1946.

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HAN-41652

EXPANSION OF 234-5 CAPACITY

Project No. C-413

Directive No. HW-211

Hoods and equipment for Tasks IV through VII RMB line, and an additional unit in each of Task IV and Task VII of RMA line. (See Note below for Task description.) Utilizes present building, with alterations.

Estimated 18 tons stainless steel for hoods, etc.

Mezzanine floor construction for hoods and equipment of Task VIII.

Original Estimated Cost: \$5,000,000

Indicated Final Cost: \$6,325,000

NOTE: Tasks referred to above described as follows:

Task IV - Casting
Task V - Machining
Task VI - Pressing
Task VII- Coating
Task VIII - Inspection

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REDOX PRODUCTION FACILITIES

Project Number C-187-D

Directive Number HW-99

Cost-plus-fixed-fee on all, except lump sum on waste disposal facilities.

202-S Production Building
Size

Cells

Crane (canyon)

Crane (silo)

Operating galleries

Silo Sections

Service Areas

Canyon Type Building

476' x 136' (64,736 square feet) -

Reinforced concrete - 5" roof slab
supported by steel roof trusses

9 units - 30' deep

60 ton capacity

10 ton capacity

Both sides of canyon

Contains extraction towers and
aqueous make-up equipmentLocated on north, west, and south
sides and contains switchboard,
offices, storage, compressor and
blower equipment

277-S Mock-Up Building
Size

200' x 83' (16,600 square feet)

Steel with wood siding covered with
asbestos shingles. Has provision for
mock-up of "high" and "low" cells and
silo equipment

276-S Solvent Storage and Make-Up Tanks and Equipment - Carloading spot and
two underground storage tanks and three above ground process make-up tanks
with necessary pumps and piping.

291-S Stack Gas Filters, Tunnel, Exhaust Fans, Control House, and Stack -
Filter 85' x 85', walls and roof of reinforced concrete. Concrete stack
200' high with stainless steel liner 52" in diameter.

211-S Tank Farm

3 units

2 units

3 units

1 unit

9 units

20' x 20' - Acid storage

30' x 30' - Caustic storage

35' x 23' - Salt storage

9' x 9' - Make-up storage

Major construction features:

Excavation - 443,079 cubic yards

Backfill - 170,048 cubic yards

Controlled Backfill - 65,689 cubic yards

Concrete - 45,000 cubic yards

Re-steel - 3,418 tons

Structural Steel - 615 tons

Redox Production Facilities

-2-

DECLASSIFIED

Miscellaneous Steel - 300 tons
Sanitary and Process Sewers - 10,634 linear feet
Copper tubing - 600,000 feet

241-S Waste Disposal Facilities - Twelve 758,000 gallon concrete tanks with steel liners, bottoms and sidewalls, with pipe encasements and retention basin.

Major Construction Features:

Excavation - 450,000 cubic yards
Backfill - 245,000 cubic yards
Concrete - 16,000 cubic yards
Steel Plate and Shapes - 1,375 tons
Reinforcing - 1,500 tons
Stainless Steel Pipe, 3 $\frac{1}{2}$ " - 11,000 feet

Total Original Estimated Cost: \$54,000,000

Total Indicated Cost: \$42,000,000 (more likely \$40,000,000)

Underrun: \$12,000,000

Beneficial Occupancy: July 18, 1951

Accepted by GE Manufacturing Div. August 15, 1951 (with exceptions).

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REDOX ANALYTICAL AND PLANT ASSISTANCE LABORATORY
AND ASSOCIATED WASTE DISPOSAL SYSTEM

Project Number C-187-E

Directive Number HW-24
Modifications 1 through 5

Two story and partial basement (reinforced concrete first floor; metal siding second floor; structural steel framing).

Dimensions

First Floor 324' x 109'	33,000 square feet
Second Floor	25,600 square feet
Basement	2,290 square feet
Tunnels	4,500 square feet
Total area	65,390 square feet

Laboratories and Miscellaneous Facilities

Plant Assistance	4 labs
Analytical	9 labs
Multi-curie	3 labs
Process Research	3 labs

Decontamination area, change area, equipment space, counting room and miscellaneous service facility rooms.

Waste disposal system consisting of a retention basin, crib, open drainage, and neutralizing building.

Major Construction FeaturesStructural

Concrete	4,500 cubic yards
Metal Siding	11,000 square feet
Movable Partitions	52,000 square feet
Structural Steel	306 tons

Mechanical

Heating and Ventilating - 5 supply and 5 exhaust fans	
Galvanized Steel Ductwork	60,000 lbs.
Stainless Steel Ductwork	58,000 lbs.
Piping (all sizes)	36,000 lineal feet
Electrical Circuits (power, lighting, telephone)	70,000 lineal feet (Enough for 280 3 bedroom houses)

Equipment

Cubicles	2
Hoods	137
Junior Caves	15
Tanks (stainless steel)	2
Tanks (mild steel)	2
Laboratory Furniture	365 items

Original Estimated Cost: \$5,207,000

Indicated Final Cost: \$4,926,000

AEC-HOO-Eng. and Constr. Division
CRQualheim-Sponsor/10-91


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TBP-WASTE METAL REMOVAL AND RECOVERY FACILITIES

Project Number C-362

Directive Number HW-160

Description of Structures221-U Bldg. - Canyon type structure containing:Size -- 810' x 85' x 102' high--68,850 sq. ft.--5,000,000 cu. ft. (Approx.)40 Cells -- 13' x 17.5' x 22' deep2 Cranes -- One 75-Ton Remote Control Operation, One 10-Ton Service271-U Bldg. - Service Building adjacent to 221-U--offices, ventilating equipment, and chemical make-up facilities.224-U Bldg. -- Reinforced concrete and concrete block structure.Size -- 60' x 197' x 60' high--11,820 sq. ft.--700,000 cu. ft.6 Cells -- Three floor service and operating section.211-U - Chemical Tank Farm:

9 Tanks (stainless steel)

10' x 14'

6 Horizontal Tanks

1 Stainless steel

9' x 36'

3 Carbon Steel

9' x 36'

2 Carbon Steel

8' x 36'

New Facilities:

Interarea Pipeline - One six-line encasement, four miles long from 200-West to 200-East, where it splits to one three-line and one four-line encasement, each one mile long. Excavation 278,000 cubic yards. 156,000' 3 $\frac{1}{2}$ " O.D. 11 ga wall stainless steel (304 ELC) tubing.

Waste Removal systems at each tank farm.

Blending facilities to blend and acidify waste for transfer consisting of vaults at 241-U, 241-B, 241-C, and 241-TX. Each vault has one 20' x 20' carbon steel, two 14' x 14' and one 10' x 14' stainless steel tank.

Feed and waste intermediate storage in 241-WR Diversion Station -- a vault 127' x 65' x 47' deep, located adjacent to head end of 221-U containing nine 20' x 20' stainless steel tanks.

Additional chemical storage (211-AU), consisting of nine 25' x 30' stainless steel tanks for nitric acid and four 30' x 20' carbon steel tanks for caustic.

(continued)

[REDACTED]
DECLASSIFIED

Project Number C-362

- 2 -

Mock-up Building (277-U), 200' x 56', steel frame with wood sheathing and asbestos siding shingles. Six cells for mocking up process equipment.

Uranium product storage (203-U), two 25' x 30' stainless steel tanks for intermediate storage of TBP and Redox uranium product solution.

Solvent Storage Tank Farm (276-U) located at southwest end of 221-U and consisting of one carbon steel tank 17' x 17' and three stainless steel tanks.

Major Construction Features:

Excavation	600,000 cubic yards
Backfill	520,000 cubic yards
Concrete	42,000 cubic yards
Carbon Steel	4,500 tons
(Includes 43 miles of $\frac{1}{2}$ " to 10" pipe, 2,100 tons of reinforcing steel and 240 tons of structural steel)	
Stainless steel	2,800 tons
(Includes 47 miles of $\frac{1}{2}$ " to 6" pipe)	
Surface to be Amercoated	750,000 sq. ft. (17 A.)
Copper Tubing (Instrumentation)	133 miles

Original Estimated Cost: \$30,600,000 (Pre-scope estimate)

Presently Estimated Cost: \$48,000,000 (Based on design 95% complete)

Current budget submission to Congress -- \$46,900,000.

Indicated Overrun: \$17,400,000.

[REDACTED] [REDACTED]

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HAN-41652

UO₃ METAL CONVERSION

Project Number C-361

Directive Number HW-158

Remodeled part of the 224-U Building.

Has a number of reactors and associated equipment, including 18 furnaces, nitric acid absorber unit, cyclone separator and storage unit.

Metal Conversion is designated as Part A of the project. Segregation of UO₃ by source was designated Part B. Although segregation was cancelled by teletype from Washington, July 30, 1951, a part of Part B work is still required.

Major construction features:
Stainless steel - 120 tons.

Original Estimate: \$3,250,000

Current Budget Amount: \$1,800,000 (Certified)

Presently Estimated Cost: \$2,065,900 -- Part A only.

Indicated Overrun: \$265,900

AEC-HOO-Eng. and Const. Division
HEParker-Sponsor/9-51

 **DECLASSIFIED**

HOT SEMI-WORKS
(200E AREA)

Project Number C-349

Directive Number HW-150

Consists of three process buildings and five auxiliary buildings --
18,925 square feet total floor space.

Hot Process Building, 46' x 80' - 3680 square feet.
Maintenance Shop 56' x 20' - 1120 square feet.
Reinforced concrete design with structural steel and
transite siding lean-to shop.

Cold Process Building, 3-story, steel frame, concrete floors,
walls insulated, metal siding, irregular shape.

Solvent Building - 49' x 20' - 980 square feet. Four story
steel frame, concrete floors and insulated metal siding.

Change House - Cold Shop Building, 60' x 24' - 1440 square feet.

Office Building, 43' x 24' - 1032 square feet.

Gas Preparation Building, 41' x 68' - 2788 square feet.

Air Treatment Building.

Fan House.

Major features:

Excavation - 34,000 cubic yards.
Concrete - 4,500 cubic yards.
Re-steel - 275 tons.
Structural Steel - 200 tons
Stainless Steel - 75 tons
Stainless Pipe - 33,000 linear feet
Carbon Steel Pipe - 15,000 linear feet
Process and Sanitary Sewer - 3,000 feet

Original Estimated Cost: \$2,690,000

Presently Estimated Cost: \$3,335,000 -- Approved by Bureau of Budget.

Indicated Overrun: \$645,000



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EVAPORATOR FACILITIES FOR WASTE SOLUTIONS - 200 EAST

Project No. C-423

Directive No. HW-221

New 3-cell concrete process building, 50'x50'x22' - 55,000 cubic feet.
New 30'x27' single-story steel frame central building.

One 500-gallons-per-hour evaporator. (12'x12' stainless steel tank with 4 removable stainless steel coils.)

One 4,185-gallon stainless feed tank.

Two 4,185-gallon stainless steel catch tanks.

One 776-gallon stainless steel decontaminant tank.

One 500-gallon-per-hour condenser.

One 776-gallon stainless steel scrubber.

Related piping, valves, fittings, pre-heaters and instrumentation.

8,500 linear feet of outside underground process and water lines.

To effect a 5 to 1 volume reduction of first cycle process waste now being placed in underground storage.

Design is to be essentially identical with Project No. C-369-R, recently completed in 200 West Area.

Original Estimated Cost: \$500,000

Indicated Final Cost: \$495,000

AEC-HOO-Eng. and Constr. Division
John M. Musser-Coordinator/10-51

DECLASSIFIED

EVAPORATOR FACILITIES FOR WASTE SOLUTIONS - 200 WEST

Project No. C-369-R

Directive No. HW-167

Description:

New 3-cell concrete process building, 50'x50'x22' high.
New 30'x27' single-story steel frame control building.

One 500-gallons-per-hour evaporator. (12'x12' stainless steel tank with 4 removable stainless steel coils.)

One 4,185-gallon stainless steel feed tank.

Two 4,185-gallon stainless steel catch tanks.

One 776-gallon stainless steel decontaminant tank.

One 500-gallon-per-hour condenser.

One 776-gallon stainless steel scrubber.

Related piping, valves, fittings, pre-heaters and instrumentation.

8,500 linear feet of outside underground process and water lines.

To effect a 5 to 1 volume reduction of first cycle process waste now being placed in underground storage.

Original Estimated Cost: \$487,000

Indicated Final Cost: \$497,923

Completion date: Project was physically completed on May 17, 1951.

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ADDITIONAL WASTE STORAGE FACILITIES - 200 WEST AREA - 241-TY

Project Number C-418

Directive Number HW-215

Six concrete waste disposal tanks with steel liners. Each is 75' x 23'10", 101,345 cubic feet, 758,000 gallons capacity.

Major features:

- Excavation - 228,000 cubic yards
- Backfill - 190,000 cubic yards
- Re-steel - 690 tons
- Tank Steel - 430 tons
- Concrete - 6,500 cubic yards
- Stainless Steel Pipe - $1\frac{1}{2}$ miles

Original Estimated Cost for 9 tanks - \$2,700,000 (Cost per tank \$300,000)

Present Indicated Cost for 6 tanks - \$2,250,000 (Cost per tank \$375,000)

Indicated Underrun - \$450,000 (Per tank \$75,000.-overrun)

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ENLARGING 251 SUBSTATION AND ADDITIONAL 13.8 KV FEEDERS
TO 200 WEST AREA

Project No. C-295

Directive No. HW-92

Existing substation being rebuilt with steel and capacity increased.
New feeder lines added.

Substation Yard Area 400 x 600 feet.
Capacity of substation increased from 18,750 to 37,500 KVA.
Weight of steel to be erected - 138 tons.
Concrete required - 100 cubic yards.
Length of single circuit 13.8 KV line (new) - 15,000 feet.
Length of double circuit 13.8 KV line (new) - 26,500 feet.
Length of single circuit 13.8 KV line (restrung) - 6,800 feet.
Length of double circuit 13.8 KV line (restrung) - 12,000 feet.

Original Estimated Cost - \$1,820,100.
Rescoped Estimated Cost - \$1,280,000.

Indicated Final Cost - \$1,280,000.

Schedules:

Design started - October 15, 1948.
Design complete - February 15, 1951.
Construction started - October 21, 1948.
Construction complete - January 1, 1952.
Ready for use - No interruption of power supply exceeding 24 hours
required. Enlarged station to be ready for service November 1, 1951.

All line construction by CPFF contract.
All substation yard expansion work by L.S. contract.
All tie-ins by prime contractor.

AEC-HOO-Eng. and Constr. Division
Sponsor - W. E. Spillman
Alt. Sponsor - S.M. Rhyneer/9-51

Works Lab

177918-51822
DECLASSIFIED

H. I. CONTROL AND DEVELOPMENT (BIOPHYSICS) LABORATORY

Project Number C-257

Directive Number HW-65

Two story and partial basement (structural steel framing and metal siding).

Building Area

<u>First Floor</u> - 216' x 120'	26,600 square feet
<u>Second Floor</u> Equipment Room	7,500 square feet
<u>Basement and Tunnel</u>	800 square feet
Total Area	34,900 square feet

Laboratories & Miscellaneous Space

<u>Laboratories</u>			
Methods Group	10 labs	Offices	12
Control Group	8 labs	Counting Room	1
Site Survey Group	9 labs	Decontamination	
Industrial Hygiene	3 labs	Room	1
Physics Group	7 labs	Misc. Equipment	
Instrument Development	7 labs	Space and Service	
Total	44 labs	Rooms	

Major construction features:

<u>Structural</u>	
Concrete	1,500 cubic yards
Metal siding	17,000 square feet
Movable partitions	34,000 square feet
Structural steel	174 tons

Mechanical
Ductwork - 38,000 pounds, 3 exhaust and 3 supply fans
Piping - 13,000 lineal feet pipe, all sizes
Electrical circuits - 9,600 lineal feet conduit

<u>Equipment</u>	
<u>Sectional hoods</u>	42
<u>Laboratory furniture</u> (tables, cupboards, benches, shelves)	150 items
Junior caves	2

Original Estimated Cost: \$1,550,000

Indicated Final Cost: \$1,550,000

LABORATORY SUPPLY BUILDING

Project Number C-458

Directive Number
(not written)Description

Modification of the existing 3702 Building for use as a laboratory supply building for project storage of caption 10 supplies.

Work will consist of removal and rearrangement of partitions and installation of shelving, cabinets, etc. This facility will be constructed only if funds are available after award of construction contracts for the major buildings in the Works Laboratory Area.

Original Estimated Cost: \$29,000Indicated Final Cost: \$29,000

236

DECLASSIFIED

LIBRARY AND FILES BUILDING

Project Number C-421

Directive Number HW-219

Description

Two story - structural steel framing and metal siding.

First floor - 150' x 100'	14,892 sq. feet.
Second floor	6,288 sq. feet
Total area	21,180 sq. feet

Library and Reading Room - 1/4 of floor area;
 Classified Files, Vault and Offices - 3/8 of floor area;
 Conference Room and Lunch Room - 1/8 of floor area;
 Bindery and Book Processing Area - 1/8 of floor area;
 Equipment Space and Engineering Offices - 1/8 of floor area.

Concrete	690 cubic yards
Structural steel	90 tons
Insulated Metal siding	10,000 square feet
Movable partitions	21,500 square feet
Heating and Ventilating	6,500 pounds ductwork
Piping, all sizes	1,200 lineal feet pipe
Electrical	3,800 lineal feet conduit
Book racks - all other items standard	

Original Estimated Cost: \$574,000Indicated Final Cost: \$574,000

DECLASSIFIED

MECHANICAL DEVELOPMENT LABORATORY

Project Number C-406

Directive Number HW-204

One story and partial mezzanine floor and mold loft floor (structural steel framing and metal siding, concrete floor slab).

First floor - 220' x 108'	23,760 square feet
Mezzanine floor	6,560 square feet
Loft floor	2,400 square feet
Total area	32,720 square feet

Shops:

Machine, carpenter, foundry, blacksmith, glass, electrical, paint, sand blasting, welding. Twelve (12) offices, drafting room, equipment room and mock-up loft.

Major Construction Features:

<u>Structural</u>	
Concrete	800 cubic yards
Metal siding	13,000 square feet
Partitions	14,000 square feet
Structural steel (estimated)	50 tons

Mechanical

Detail design not yet started

Equipment

2-milling machines, 1-glass working lathe, 5-metal lathes, 1-surface grinder, 3-bench and pedestal grinders, 1-tempering furnace, 1-atmosphere furnace, drying oven, sand blasting equipment, pipe threading machine, metal cutting saw, table saw, spray painting equipment.

Original Estimated Cost: \$664,000

Indicated Final Cost: \$822,000

171-N-41652

DECLASSIFIED

PILE TECHNOLOGY BUILDING

Project Number C-414

Directive Number HW-212

Two story and basement (structural steel framing, reinforced concrete and metal siding).

Dimensions

<u>First floor</u> , 190' x 180'	19,780 square feet
<u>Second Floor</u>	16,100 square feet
<u>Basement</u>	15,300 square feet
Total Area	51,180 square feet

Laboratories and Misc. Facilities

<u>Pile Physics</u>	10 labs - 10 offices
<u>Metallurgy</u>	10 labs - 10 offices
<u>Engineering Development</u>	15 labs - 10 offices
<u>Administration</u>	4 offices
Change area, equipment space, and miscellaneous service facility rooms.	

Major Construction Features:

<u>Structural</u>	
Concrete	2,430 cubic yards
Structural Steel	319 tons
Metal Siding	22,600 square feet
Movable Partitions	90,000 square feet

<u>Mechanical</u>	
Heating and Ventilating Ductwork	
Galvanized	54,000 lbs.
Stainless Steel	46,000 lbs.
Piping (all sizes)	24,500 lineal feet
Electrical conduit	30,000 lineal feet

<u>Equipment</u>	
Hoods	14
Machine tools	10 items
Laboratory Furniture	375 items

Original Estimated Cost: \$2,842,000

Indicated Final Cost: \$2,842,000

RADIOCHEMISTRY BUILDING

Project Number C-381

Directive Number HW-174

Description

Two story and basement (structural steel framing, reinforced concrete and metal siding.

First floor - 246' x 194'	47,800 square feet
Second floor	26,200 square feet
Basement	44,000 square feet
Total	118,400 square feet

Facilities Included:

Analytical Research, Development and Service	18 labs
Process Research and Development	15 labs
Health Instrument	1 lab
Counting Rooms	3
Offices	40
Decontamination Area, Change Area, and miscellaneous Service Facility Rooms	

Major Construction Features

<u>Structural</u>	
Concrete	2,810 cubic yards
Structural steel	640 tons
Metal siding	23,400 square feet
Movable partitions	94,370 square feet

<u>Mechanical</u>	
Ductwork - 124,000 pounds, 7 exhaust and 5 supply fans	
Piping - 42,000 lineal feet, all sizes	
Electrical circuits - 36,000 lineal feet conduit, all sizes	

<u>Equipment</u>	
Hoods	135
Items of laboratory furniture (benches, tables, cupboards, shelves)	510
Junior caves	2
Vacuum pumps	3
Distilling plant	1
Items of machine tools	30

Original Estimated Cost: \$5,000,000Indicated Final Cost: \$4,760,000

DECLASSIFIED

RADIOMETALLURGY BUILDING

Project Number C-385

Directive Number HW-182

One story with partial basement (structural steel framing, reinforced concrete and metal siding).

<u>First Floor</u> - 174' x 113'	10,200 square feet
<u>Basement</u>	2,350 square feet
<u>Tunnels</u>	1,240 square feet
Total	13,790 square feet

Canyon Area for cells - 1/3 of building, Laboratory, Shop, Equipment Room, Decontamination Room and Change Area.

Major construction features:

<u>Structural</u>	
Concrete	2,800 cubic yards
Structural steel	42 tons
Metal siding	4,000 square feet
Movable partitions	5,600 square feet

Mechanical

Heating and ventilating - ductwork 17,720 pounds, 2 exhaust and 2 supply fans

Piping - 4,300 lineal feet of all sizes pipe

Electric circuits - 8,896 lineal feet conduit

Equipment

<u>Cells</u> - Intermediate level	3
High level	1
<u>Hoods</u>	6 units
<u>Laboratory furniture</u> (benches, tables, shelving, etc.)	16 items
<u>Machine tools</u> (lathes, drill press, grinder, etc.)	6 items

Original Estimated Cost: \$1,463,000

Indicated Final Cost: \$1,720,000

UTILITIES & POWER PLANT (WORKS LABORATORY AREA)

Project Number C-394

Directive Number HW-191

Utilities include all work starting at a point 5' outside the buildings: Water supply, compressed air, steam, condensate return, sanitary sewer, laboratory waste disposal, electrical, propane gas, emergency power and grading, fences, roads and walkways, gatehouse, parking and access roads.

(A new power plant project not included in this project.)

Water - 7,000' - 12" pipe from 3000 Area; 5,570' water distribution pipe

Sanitary sewer - 2,600' sewer tile; process sewer - 1,980' sewer tile

Compressed air - 1,980' steel pipe

Steam and condensate return - 4,675' steel pipe

Propane - 1,650' steel pipe

Laboratory waste disposal - crib, retention basin, leaching trench and 3,500' stainless steel pipe

Electrical:

21,000' cable and wire; telephones 1,400' L.C. cable

Roads, Sidewalks and Parking:

Common excavation - 13,200 cubic yards

Subgrade preparation - 22,000 square yards

Type "A" asphaltic concrete - 1,870 tons

Sidewalks, 4" concrete - 1,000 square yards

6,000 lineal feet 8' chain link fence

Original Estimated Cost: \$1,760,000

Indicated Final Cost: \$1,760,000

AEC-HUD-Eng. and Constr. Division
C. R. Qualheim-Sponsor/10-51

HAN-41652

Central Shops

WHITE BLUFFS CENTRAL SHOPS

DECLASSIFIED

Project Proposal Number C-281

Directive Number HW-84

1. Description

a. Size - Approximately 350 Acres.

b. Major Structures

<u>Title</u>	<u>Dimensions</u>	<u>Area</u>
Carpenter Shop	60x100	6,000 Sq.Ft.
Concrete Apron	100x200	20,000
Automotive Shop.	70x105	7,350
Reinforcing Steel Shop	40x120	4,800
Boiler House	59x52	3,068
5 Warehouses	40x200 each	8,000
Electric Shop	40x160	6,400
Bolt Shop	40x40	1,600
Sheetmetal Shop.	80x80	6,400
Riggers Loft.	60x80	4,800
Paint Shop	40x100	4,000
Superintendent's Office	40x200	8,000
Safety and First Aid Building	40x55	2,200
Instrument Shop & Warehouse	90x65	5,850
Concrete Control and Testing Laboratory (2 buildings)	20x20 & 20x40	1,200
Fire Station.	80x100	8,000
Washing and Greasing	70x144	10,080
Heavy Duty Repair Shop	66x195	12,870
Engineering Office, A-J	40x100	4,000
Administration Office, A-J	40x100	4,000
Oxygen & Acetylene Storage Bldg.	45x30	1,350
Welding Shop	40x90	3,600
Machine Shop and Small Tools	80x200	16,000
Linemen's Shop	40x100	4,000
Service Station.	16x36	576
Bus Loading Station		
Cement Storage Warehouse (moved to Central Batch Plant)		
Gasoline & Diesel bulk storage		
Ice Plant (was on site)	98x109	10,682
Warehouse	40x100	4,000
Timekeepers' Office	20x40	800
Pipe Shop	90x226	20,340
Steel Fabrication Shop	23x100	2,300
Addition.	30x44	1,320
Tube Shop	40x200	8,000
Transportation Office	30x40	1,200
Warehouse	32x75	2,400
U.S.W. Office	36x40	1,440

Project Proposal Number C-281

-2-

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Ice House	41x41	1,681
Pipe Fitting Warehouse	20x90	1,800
Electrical Warehouse.	40x80	3,200
Cable Storage Shed	25x55	1,375
Cat Shop	30x130	3,900

c. Utilities Installed

Railroad	7 miles
Roadways	10 "
Water and fire lines	7 "
Steam lines	1½ "
Sewer lines	1 "
Primary electric lines	8½ "
Secondary lines	4 "
Telephone lines	7 "

2. Original Estimated Cost

Originally authorized as part of directive for H Area at \$1,000,000, which figure was not an estimate. Directive Number HW-84 issued after completion authorized \$4,650,000.

3. Final Recorded Cost

\$4,612,344 (Under run \$37,656)

E&C Division
C. Peters
2-21-51

HAN-41652

Richland

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ADDITIONAL WATER SUPPLY AND SEWAGE FACILITIES

Project Number (None)

Directive Number (None)

Description

Under Project C-382, a 20" well (1100-D) was developed and equipped. The work was physically completed July 13, 1951 at a cost of \$32,428.15.

Under Project C-353, GE prepared scoping for a study by Alvord, Burdick and Howson for a permanent Richland--North Richland--300 Area water supply. The Howson report was completed in March, 1951. Expenditures through September 30, 1951 were \$19,353.62.

Certain water supply facilities -- including additional supply, additional storage, feeder mains and so forth -- will be designed and constructed based on estimated population, use restriction.

Original estimated cost:

Not determined.

Indicated final cost:

Not determined.

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17/11/71-41656

YAKIMA RIVER BRIDGE - RAISED ACCESS ROADS AND APPROACHES

Project No. AEC-106

Confidential to Agency 9/57

Directive No. AEC-6

Box girder type concrete bridge

Length - 670'

Width - 56' clear roadway

Other features - Two 20' abutments, two four feet sidewalks, a four foot median island

Bridge:

concrete	5342 cubic yards
structure excavation	2990 cubic yards
reinforcing steel	415.8 tons
structural steel	31.5 tons
cast steel	1.96 tons
steel handrail	1340 lineal feet
precast conc. piling	689 lineal feet
asphalt	600 tons

Also, removal of old County bridge and removal of Bailey span and timber trestle; shoring, light reflecting curb, electrical lighting.

Approaches:

Length - 6,590 lineal feet
Barrow - 368,290 cubic yards

Original estimated cost:

Bridge - \$587,964
Roadway - \$593,000

Indicated final cost:

Bridge - \$545,000
Roadway - \$365,000*

* Includes \$350,000 participation by Corps of Engineers and Benton County.

AEC-HOO-Eng. and Constr. Division
David J. Brumley/10-51
(Sponsor)

17790-51222

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RICHLAND FOURTH HOUSING ADDITION (300 UNITS)

Project No. AEC-108 - Directive AEC-7

300 housing units including utilities, streets, and facilities.

- 60 4-B.R. Single Units, one story.
- 170 2-B.R. Duplex Units, one story (85 buildings).
- 70 2-B.R. Apartments, 2 story, 8 buildings with 8 units each,
1 building with 6 units.

	<u>4-Bedroom</u> <u>Single</u>	<u>2-Bedroom</u> <u>Duplex</u>	<u>2 Story</u> <u>2-B.R. Apt.</u>
No. of units	60	170	70
Floor Area	1,260	864	768
Size	25'x50'	24'x36'	16'x24'
Basement	Full	Full	Full
Foundations - Concrete			
Floors - wood subfloor - asphalt tile			
Walls & Roof Framing - wood			
Roof - 3 ply built-up			
Exterior Finish - cement asbestos shakes			
Interior Finish - Plaster board			
Heating - oil fired forced air - steam			
Ranges and Refrigerators included			
Seeding for apartments excluded			

Outside Facilities

Paved Streets - 36' wide	- 8,500 L.F.
Concrete sidewalks & entrance walks	-15,200 S.Y.
Concrete curb & gutter	-19,500 L.F.
Water mains	-21,000 L.F.
Sewer mains	-20,000 L.F.
Electrical distribution	-18,000 L.F.
Steam distribution	- 2,300 L.F.

Original Estimated Cost: \$3,587,000

Indicated Final Cost: \$3,587,000

(Continued)

BREAKDOWN OF COSTS PER HOUSING UNIT

	TOTAL	4-B.R. SINGLE UNIT	2-B.R. DUPLEX UNIT	2-B.R. APT. UNIT
No. Units	300	60	170	70
Floor Area S.F.	276,240	1,260	AVERAGE PER UNIT	
			864	768
Construction Costs:				
Structure	\$2,764,830	\$11,880	\$8,845	\$7,834
Site, Streets, Walks	256,950	1,415	902	268
Sewer	71,510	307	195	284
Water	61,850	257	163	268
Electrical	136,060	614	394	461
Steam	7,500	---	---	107
Total Construction	\$3,298,700	\$14,473	\$10,499	\$9,222
Engineering	74,500	340		
Overhead & Admin.	34,000	155	234	207
Contingencies	179,800	820	114	95
Total Cost	\$3,587,000	\$15,788	\$11,409	\$10,024
Average total cost per unit	\$11,957			
Ave. Sq. ft. cost per structure (Exclusive of design, utilities & overhead)	\$10.02	\$9.43	\$10.24	\$10.20

CHIEF JOSEPH JUNIOR HIGH SCHOOL

Project No. None

Directive No. RSD-1

Lump sum.

Planned capacity: 750 pupils.

Type of building: Two-story structure with monolithic concrete outside walls, wood frame roof; first floor, concrete slab; second floor, wood.

13 regular classrooms.

Home Economics, Agriculture, Business Education,
Shop, Science, Art, Music and Instruction Aid
Rooms.

Gymnasium, auditorium, library and cafeteria.
Health, administrative and custodial quarters.

Main structure - Multi-winged 116,000 square feet.

Concrete - 6,000 cubic yards.

Reinforcing Steel - 252 tons.

Structural Steel - 160 tons.

Steam Line - 1.1 miles.

Sewer System - 1.2 miles.

Water System - 1.4 miles.

Original Estimated Cost: \$1,800,000.

Presently Estimated Cost: \$1,780,000 (Budget \$1,754,384)

Indicated Under-Run: \$20,000.

Beneficial Occupancy: 9-51

H/10-5.1652

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JASON LEE ELEMENTARY SCHOOL

Project No. AEC-105

Directive No. RSD-2

Lump sum.

Planned capacity: 600 pupils.

One-story structure with monolithic concrete outside walls, wood frame roof, wood frame interior partitions, concrete floor slab.

18 classrooms.

2 Kindergartens.

Music and Art Rooms.

Gymnasium, auditorium, library and cafeteria.

Health, administrative and custodial quarters.

Main structure - Multi-winged structure -- 63,000 sq. ft.

Concrete - 2800 cubic yards.

Reinforcing Steel - 150 tons.

Steam Line - 1.1 miles.

Sanitary Sewer System - .5 miles.

Water System - 2.3 miles.

Original Estimated Cost: \$1,027,000. (Pre-scope)

Presently Estimated Cost: \$1,200,000.

Indicated Over-Run: \$173,000.

AEC-HUD-Eng. and Constr. Division
M. L. Elkins - Sponsor/9-51

REHABILITATION OF PREFABS

Project No. C-448 (1341 Prefabs)

Directive No. HW-234

Budget Item No. 7-231-9108D. 633 prefabs now completed.

Budget Item No. 7-231-1042D. Mod. No. 1 to existing subcontract --
380 prefabs now completed.Budget request approved Mod. No. 2 to existing subcontract --
328 prefabs now in the process of constructing.Add hip roof, asphalt siding, foundation skirting to all one-story
plywood box type prefabs with flat roofs.

516 3-bedroom type - 24' x 32' -- 776 square feet.

675 2-bedroom type - 24' x 24' -- 600 square feet.

150 1-bedroom type - 24' x 15½' -- 372 square feet.

Major Materials:

	633	380	328	Total
Siding, Asphalt Shake or equal - Sqs.	2,035	1,225	1,040	4,300
Lumber, 1" x 6" - 8" x 2" x 4" - MBF.	1,125	620	635	2,380
Roof Asphalt Shingles - Sqs.	4,150	2,500	2,130	8,780
Cement Asbestos Board, 3/8" - S.F.	95,000	58,000	47,000	200,000

Original Estimated Cost: \$2,100,000. (1341 Prefabs.)

Presently Estimated Cost: \$1,700,000. (1341) Under-run \$400,000.

Presently Approved, 1341 Prefabs for \$1,700,000.

Completed - 9/51

HAN - 41652

North Richland

17770-41024

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CENTRAL STORES WAREHOUSE -- FIRST PHASE

Project No. None

Directive No. None

Type of building: One-story steel and concrete with
steel trusses and four concrete fire walls.

Main structure - 280' x 360' -- 108,000 sq. ft.

Explosive storage - 40' x 37½' -- 1500 sq. ft.

Unsheltered outside - 120' x 292' -- 35,000 sq. ft.

Concrete: 4,000 cubic yards

Structural steel: 13 tons

Automatic sprinkler system: 1 mile.

Steam lines: 1 mile.

Sanitary sewer system: 0.5 miles.

Water system: 0.5 miles.

Original Estimated Cost: \$1,200,000

Presently Estimated Cost: \$1,200,000

NOTE: Second phase included in 1953 estimates at \$_____.

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17A10-91652

CONSTRUCTION CAMP - NORTH RICHLAND

Project No. C-178

Directive No. HEW-73

Size

1,200 acres

Capacity:

<u>Barracks</u> - 82½ Units (capacity varies)	8,855 persons
<u>Trailer Spaces</u> - 2,211 @ 3 avg.	6,633 "
<u>Bremerton Houses</u> - 201 @ 3½	703 "
 Total Rated Capacity	 16,191 "

Army Control:

<u>Barracks</u> - 64½ Units (capacity varies)	6,158 persons
<u>Trailer Spaces</u> (76 reserved @ 3)	
(1200 Blk betw. George Washington and "F" Avenue	228 "
<u>Bremerton Houses</u> - None	6,386 "

HOO Control:

<u>Barracks</u> - 18 Units (capacity varies)	2,697 persons
<u>Trailer Spaces</u> - 2135 @3	6,405 "
<u>Bremerton Houses</u> - 201 @ 3½	703 "
 Total Retained for Project Use	 9,805 "

Present Occupancy HOO Connected Employees

(9-12-51) 5,903 persons

Camp Structures:

<u>Building</u>	<u>No. Each</u>	<u>Controlled By</u>
Barracks - Pasco Type	46	3 by HOO, 43 by Army
Barracks - Hanford Type	146 Wings	60 by HOO, 86 by Army
Trailer Camp Office	1	HOO
Trailer Bath Houses	95	92 by HOO, 3 by Army
Bremerton Houses	201	HOO
Warehouses No. 51, 52, and 53	3	"
GE Administration & Security Bldg.	1	"
Post Office	1	"
Hospital	1	"
(Hospital - Wings 2,3, and 4 except Rooms 141, 142, 182 & 183		Army
(Hospital - Wing No. 1 plus above 4 rooms)		HOO

(continued)

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Project No. C-178

- 2 -

<u>Building (cont'd.)</u>	<u>No. Each</u>	<u>Controlled By</u>
Fire Station	1	HOO
Sub-subs Office Bldg. No. 87	1	HOO
John Ball Grade School (hutments connected by hallways)	1	"
Safety Hutment	1	"
Patrol Headquarters Building	1	"
Radiation Monitor Buildings	2	"
Central Bus Station & Bus Main- tenance & Repair Shop	1	"
GE Office Building No. 101	1	"
Paint Shops (Building No. 54)	3	Army
Hutments Nos. 39 & 43	2	"

Facility Structures:

Theater	1	HOO
Bank Building	1	"
Tavern	1	"
Ice House	1	"
Business Building	1	"
Mess Hall No. 1	1	Army
Mess Hall No. 2	1	HOO
Mess Hall No. 3 & Recreation Hall (Being converted to Off. Mess and BOQ)		Army
Commercial Bus Terminal	1	"
Drug Store	1	Private Owner
Food Store	1	" "
Trailer Supply Store	1	" "
Service Stations	2	" "
Department Store	1	" "
Snack Bar (Quonset Hut)	1	" "

Utilities Installed

<u>Streets</u>	34.5 miles
<u>Sidewalks</u>	17.0 miles
<u>Water Lines</u>	34.0 miles
<u>Sewer Lines</u>	32.5 miles
<u>Steam Lines</u>	5.5 miles
<u>Electric Lines (Primary Distribution)</u>	7.9 miles
<u>Street Lighting</u>	3.1 miles
<u>Telephone Cable</u>	4.6 miles

(continued)

Project No. C-178

- 3 -

Original Estimated Cost:

By General Electric	\$17,960,000
Authorized - For capacity of 11,355 workers	15,000,000
Additional work subsequently authorized	2,008,610
Authorized Cost - - Sub-total	\$17,008,610
Less - Community Building, authorized but not constructed	75,000
Authorized Cost - Total	\$16,933,610

<u>Final Total Cost</u>	19,965,000
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Over-run:

\$3,031,390 based on \$16,993,610 authorized

But:

Original estimate	\$17,960,000
Less items in \$17,960,000 not constructed, with their share of contingencies, engineering and supervision	3,318,800
Cost estimate for work originally pro- posed and done	14,641,200
Items authorized and constructed sub- sequent to basic directive	1,933,600
Overheads and distributives which, by prevailing practice, were not included in proposals	3,083,200
Corrected estimate of Camp as constructed	19,658,000
Actual cost of Camp as constructed	19,965,000
Over-run could be said to be	\$ 307,000

CONTRACTOR'S YARD - NORTH RICHLAND

Project Proposal Number C-230

Directive Number HW-43

1. Description

a. Size - Approximately 270 Acres

b. Major Structures

Central Record Storage Building
 AJ-Personnel Building
 GE Administration Building
 AJ Administration Building
 AJ Warehouses, General - 7 constructed, 3 of which were moved
 to W. B. Central Shops 4/49
 Plumbing Warehouses
 Electrical Warehouses
 Equipment Parts Warehouse
 Railroad Warehouse
 Electric Warehouse
 Insulation Warehouse
 Mill Warehouse - to be removed
 Builders Supply and Mill Storage
 Coal Storage Yard and Dock
 Fuel Oil Storage Yard (Bulk Oil) - unfit for use
 Oxygen and Acetylene Storage
 Pipe Shop
 Truck and Car Repair Shop - Bldgs., Nos. 74 & 75; Bldg. 74 -
 turned over to Army
 Field Maintenance Shop
 Tire Shop - turned over to Army
 Unit Repair and Inspection Building
 Carpenter Shop - to be removed
 Machine Shop
 Wash and Grease Building - transferred to Army
 Assembly Shop (Millwork) - to be removed
 Riggers Loft
 Sheetmetal Shop - to be removed
 Welders Test Shop
 Underground Utility Shop
 Filling Station with 6 pumps - Station and 5 pumps turned
 over to Army

Project Proposal Number C-230 - 2 -

c. Utilities Installed

Steam mains - 1,670 feet
Roads - 1½ miles
Sewer Lines - 1-3/4 miles
Water and Fire Lines - 4 miles
Railroad Track - 3 plus miles

2. Original Estimated Cost

\$3,298,000

3. Final Recorded Cost

\$3,028,578 (Under run \$269,422)

AEC-HOO Eng. and Constr. Division

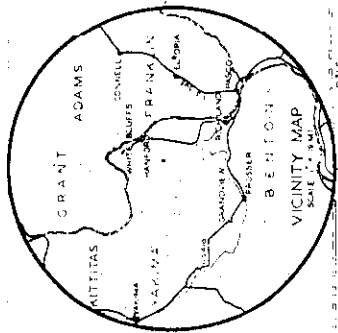
251 E & C Division
C. Peters
2-21-51

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Area Maps

Area Maps

Maps & Layouts



100-44388-1

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LEGEND

PAVED ROADS
IMPROVED ROAD
UNIMPROVED ROAD

NOTE:

TOWNSHIPS AND RANGES
BASED ON WILLAMETTE
BASE AND MERIDIAN.
GRID SYSTEM ON 10,000 INTERVALS

SCALE

A. J. S.



1000

CO & SUC: N334 30 1108 MW 13

ON 11/11/2017

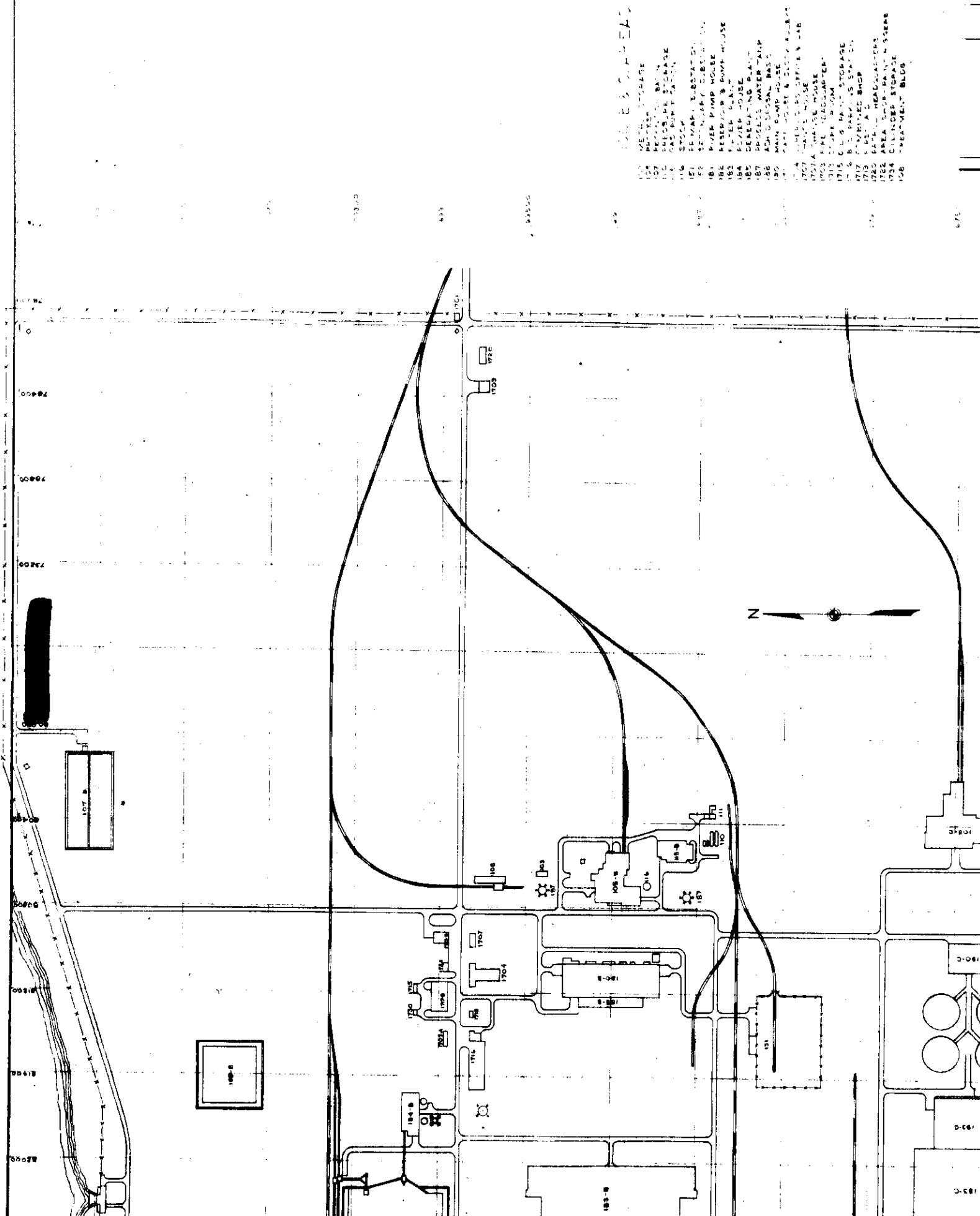
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DESTINATION	HANFORD LOT #1	HANFORD ADMIN BLDG	HANFORD LOT #2	10 BUILDING	23 B- LONG	R R YARD #2	PIERCE S SPUR	HANFORD FASCO GUARD GATE	100 F AREA	WHITE BLUFFS	200 EAST ROAD & COLD CREEK RD	200 EAST AREA	CENTRAL SHOPS	MONEY HILL	200 NORTH ROAD & COLD CREEK RD	200 NORTH AREA	100 D AREA	200 WEST ROAD & COLD CREEK RD	200 WEST AREA	SUNNY DEPT ALLEY	100 WEST AREA	ALLARD PUMP STA	300 AREA	300 AREA	WONCOLA REPAIR YARD	100 B ROAD & COLD CREEK RD	100 B AREA	HAYEN GRAVEL PIT	KENNEDICK BUS DEPOT	RICHLAND TRANS QUARTERS	BENTON CITY	BENTON CITY	KENNEDICK WHITE DEPOT	KENNEDICK BUS DEPOT	FASCO	PROSSER	GRANDVIEW	SUNNYS DE & A COLD CREEK RD	SUNNYS DE & A PROSSER	WEST TRAIL LINE & COLD CREEK RD	SOUTH WOOD LINE & BENTON CITY RD	ROAD & COLD CREEK RD	RIVER ROAD	CAMPBELL CANYON VY	HANFORD-YANINA GUARD GATE	FASCO JOINT TRACER CAMP	SOUTH TRAIL LINE	SOUTH AND ROAD																																														
HANFORD LOT #1	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
HANFORD ADMIN BLDG	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
HANFORD LOT #2	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101 BUILDING	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
113 BUILDING	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
R R YARD #2	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
PIERCE S SPUR	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
HANFORD FASCO GUARD GATE	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
100 F AREA	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
WHITE BLUFFS	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
200 EAST ROAD & COLD CREEK RD	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
200 EAST AREA	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CENTRAL SHOPS	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
MONEY HILL	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
200 NORTH ROAD & COLD CREEK RD	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
200 NORTH AREA	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
100 D AREA	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
200 WEST ROAD & COLD CREEK RD	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53																																															

DRAWING No. AEC - 800 - 1008

[illegible]

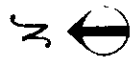
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100 Area

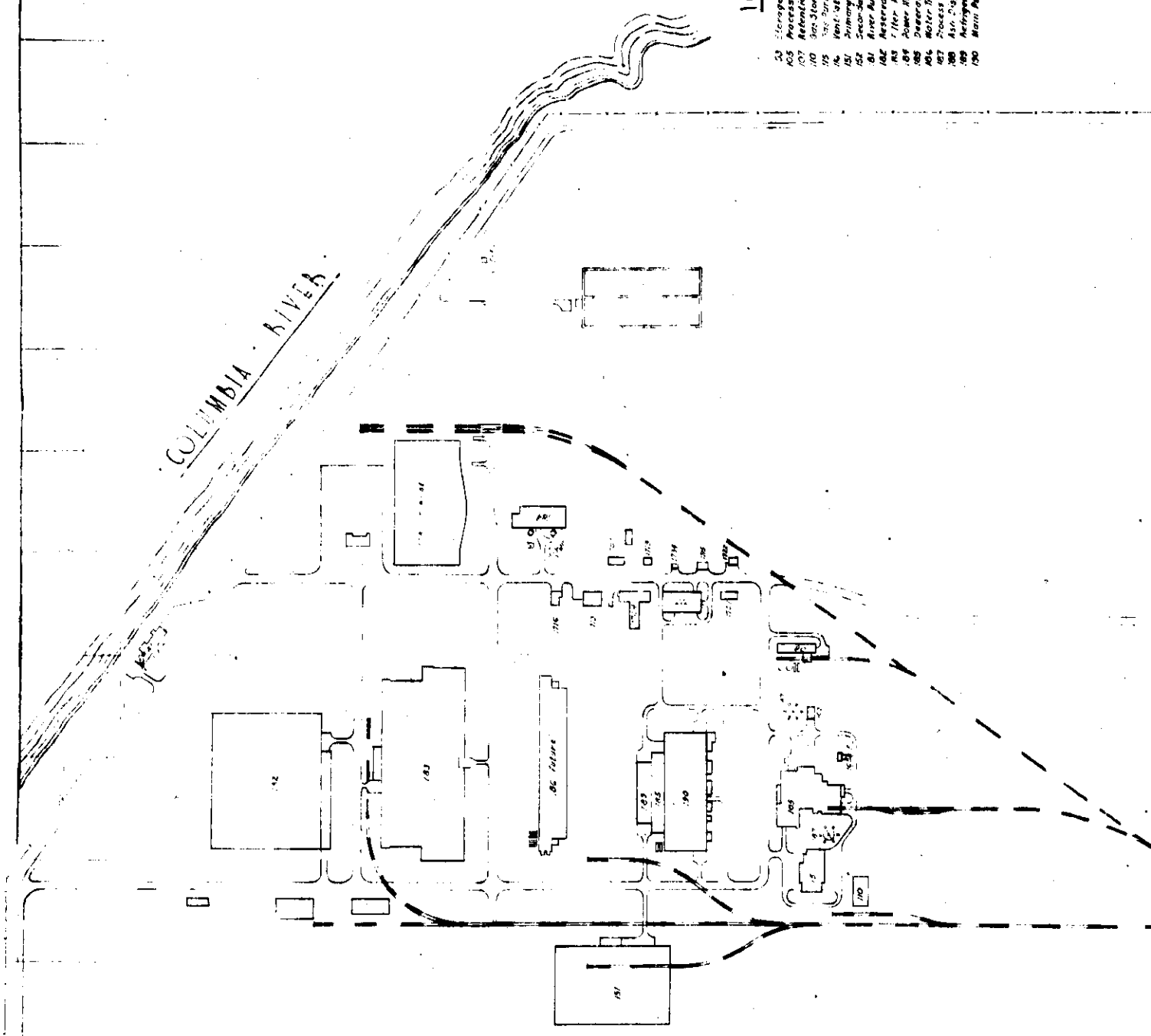
OFFICIAL

COLUMBIA RIVER



100 L AREA

- 100 Storage House
- 101 Process
- 102 Retention Basin
- 103 Gas Storage & Press.
- 104 Gas Purification
- 105 Ventilation Stack
- 106 Primary Sub-Station
- 107 Secondary Sub-Station
- 108 River Pump House
- 109 Aeration & Pump House
- 110 After House
- 111 Sewer House
- 112 Sewerage Plant
- 113 Sewerage Plant
- 114 Sewerage Plant
- 115 Sewerage Plant
- 116 Sewerage Plant
- 117 Sewerage Plant
- 118 Sewerage Plant
- 119 Sewerage Plant
- 120 Sewerage Plant





Workshop



Under Construction

Proposed

300 AREA

Radiometallurgy

Mechanical Development Building

Radiochemistry

Pile Technology

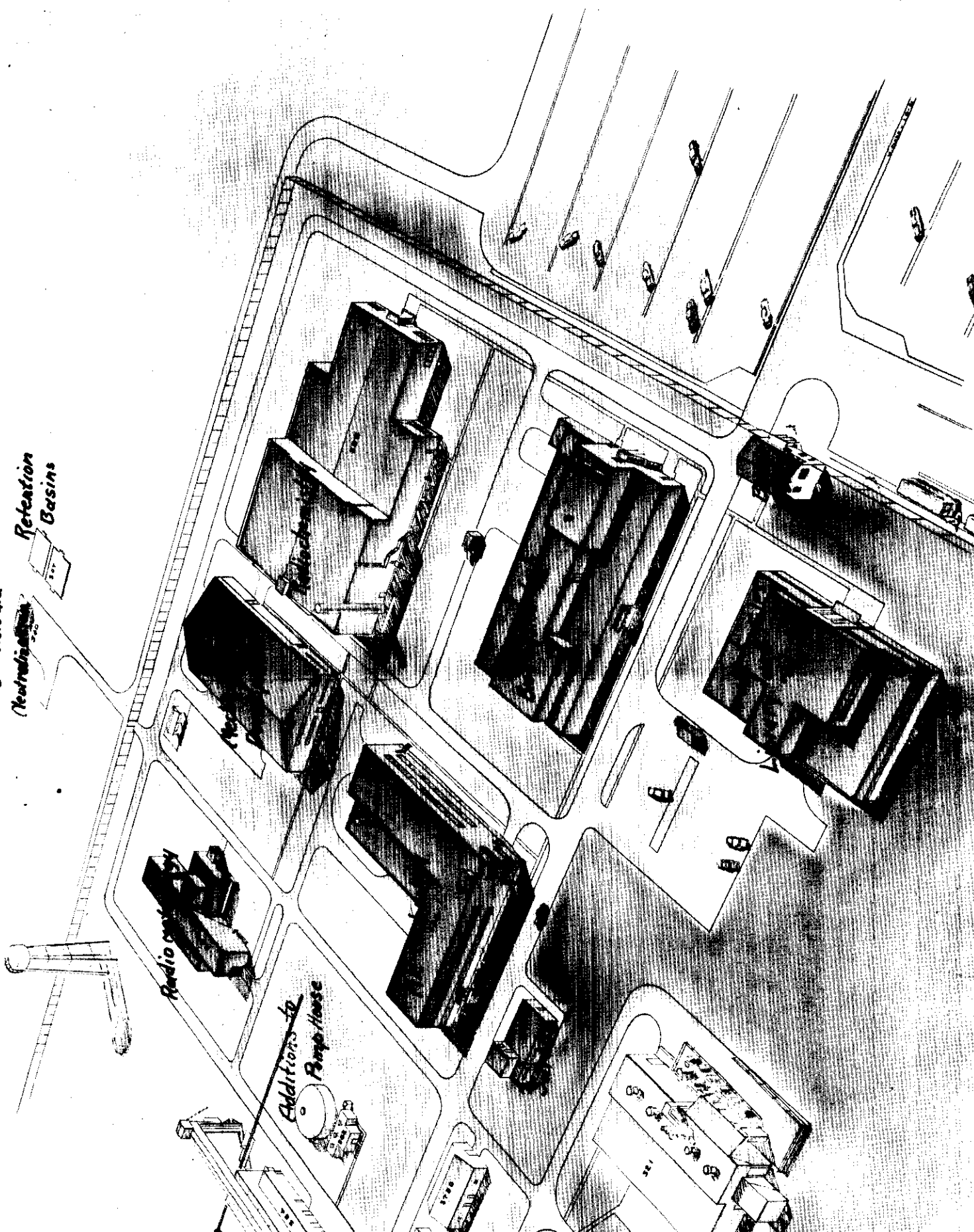
Library Files

300 Area

Retention and
Neutralization
Retention
Basins

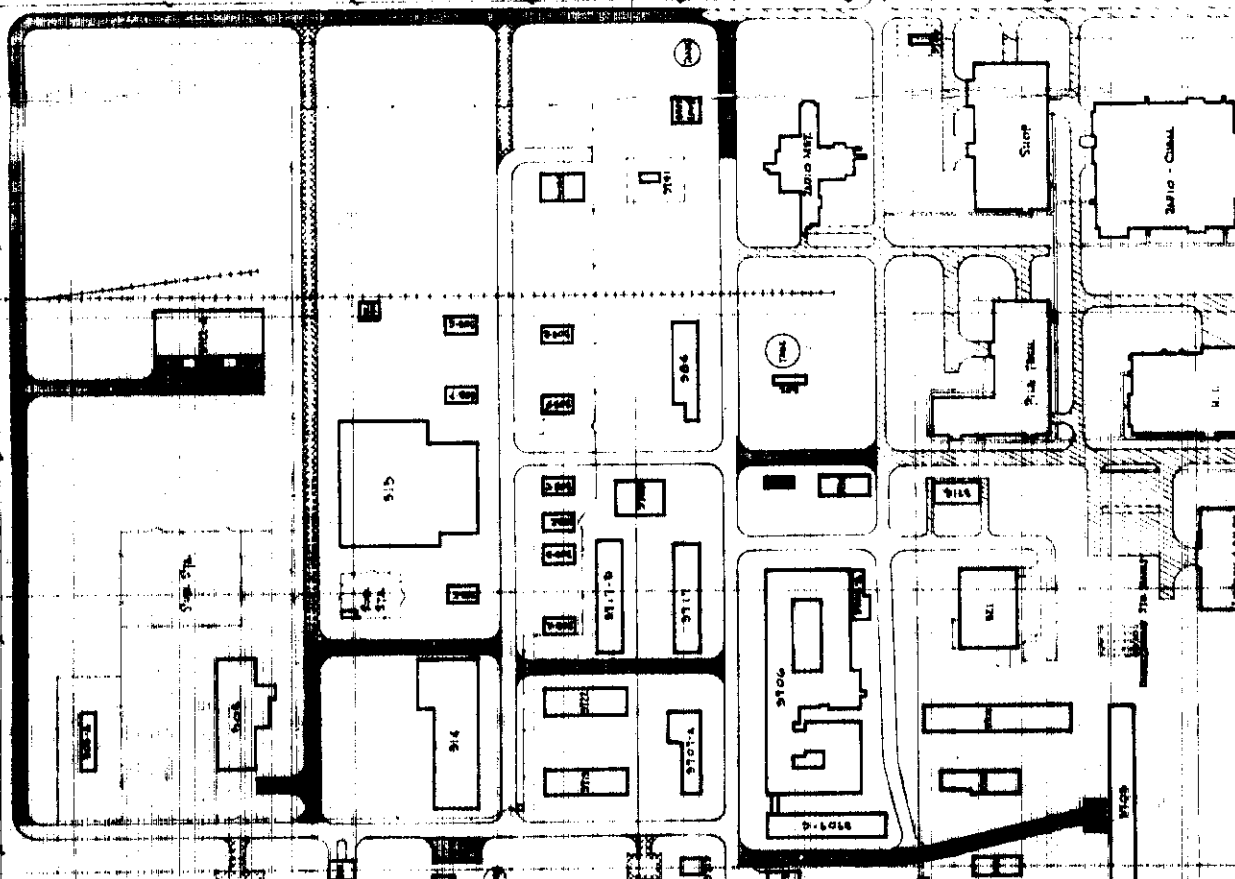
Radio control

Additions to
Pump House



FUTURE EXPANSION AREA

DATE: 12-28-63



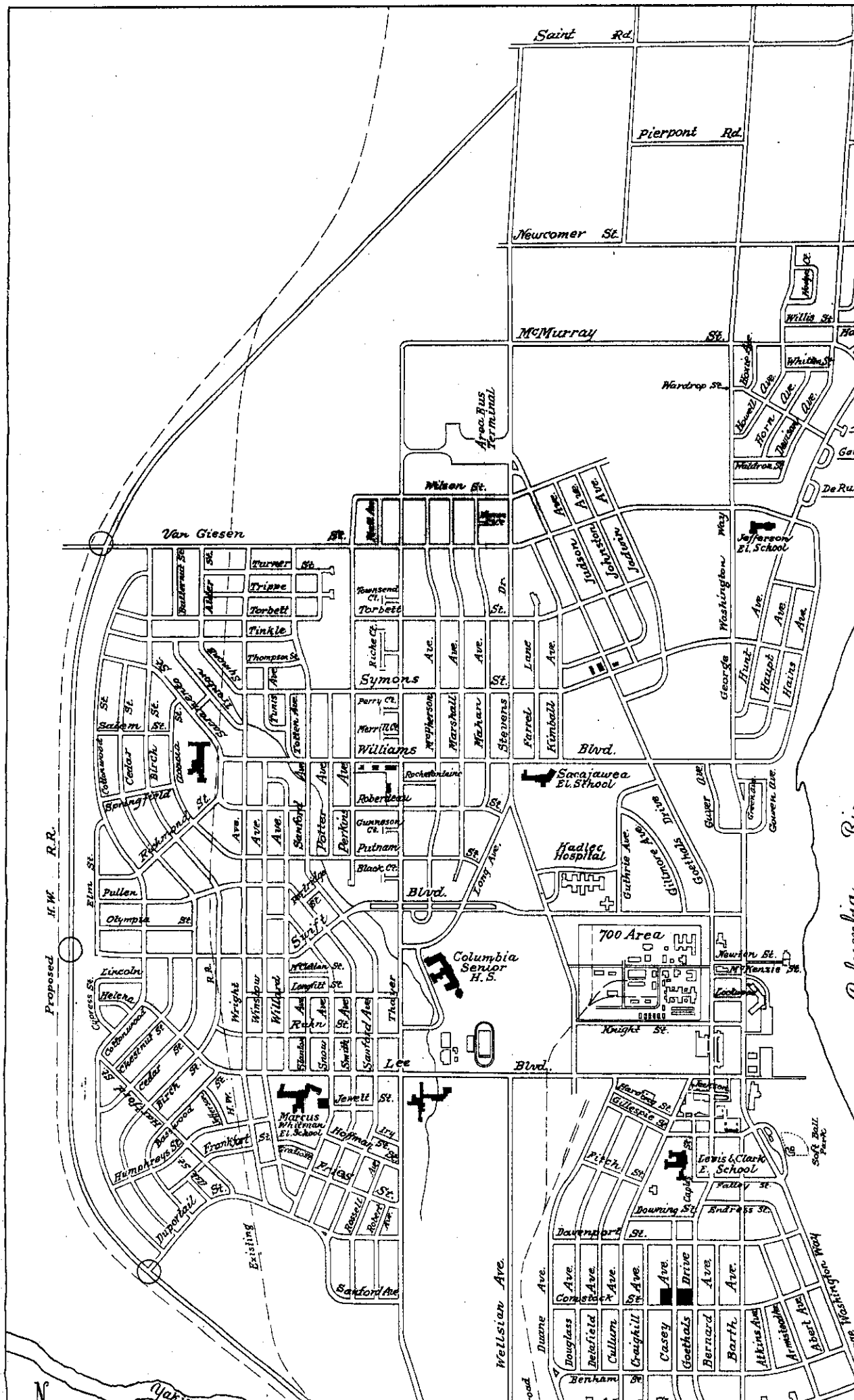
LEGEND:

NEW ROADS & PARKING AREA

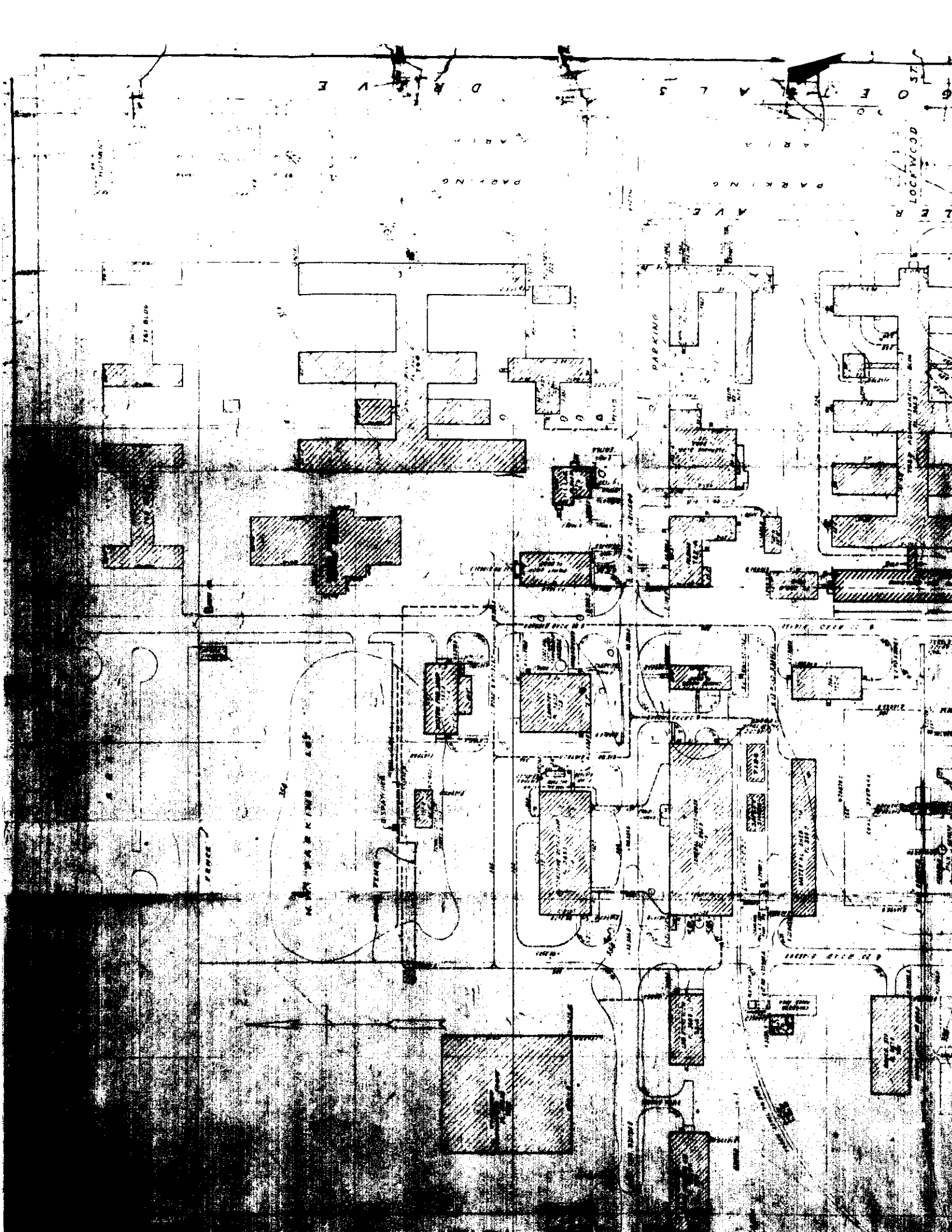
ROAD WORK BY OTHERS

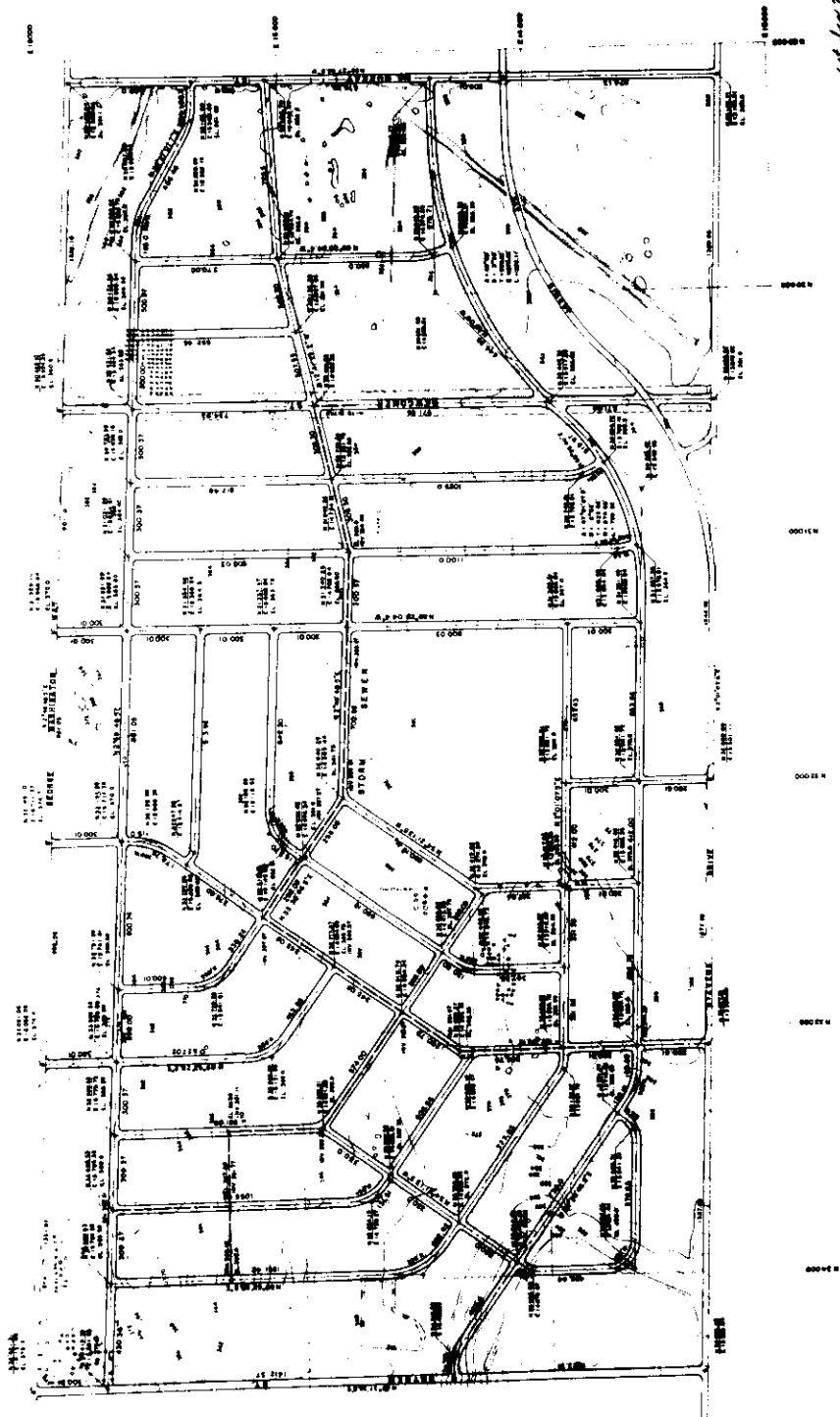
FUTURE ROADS & PARKING AREA

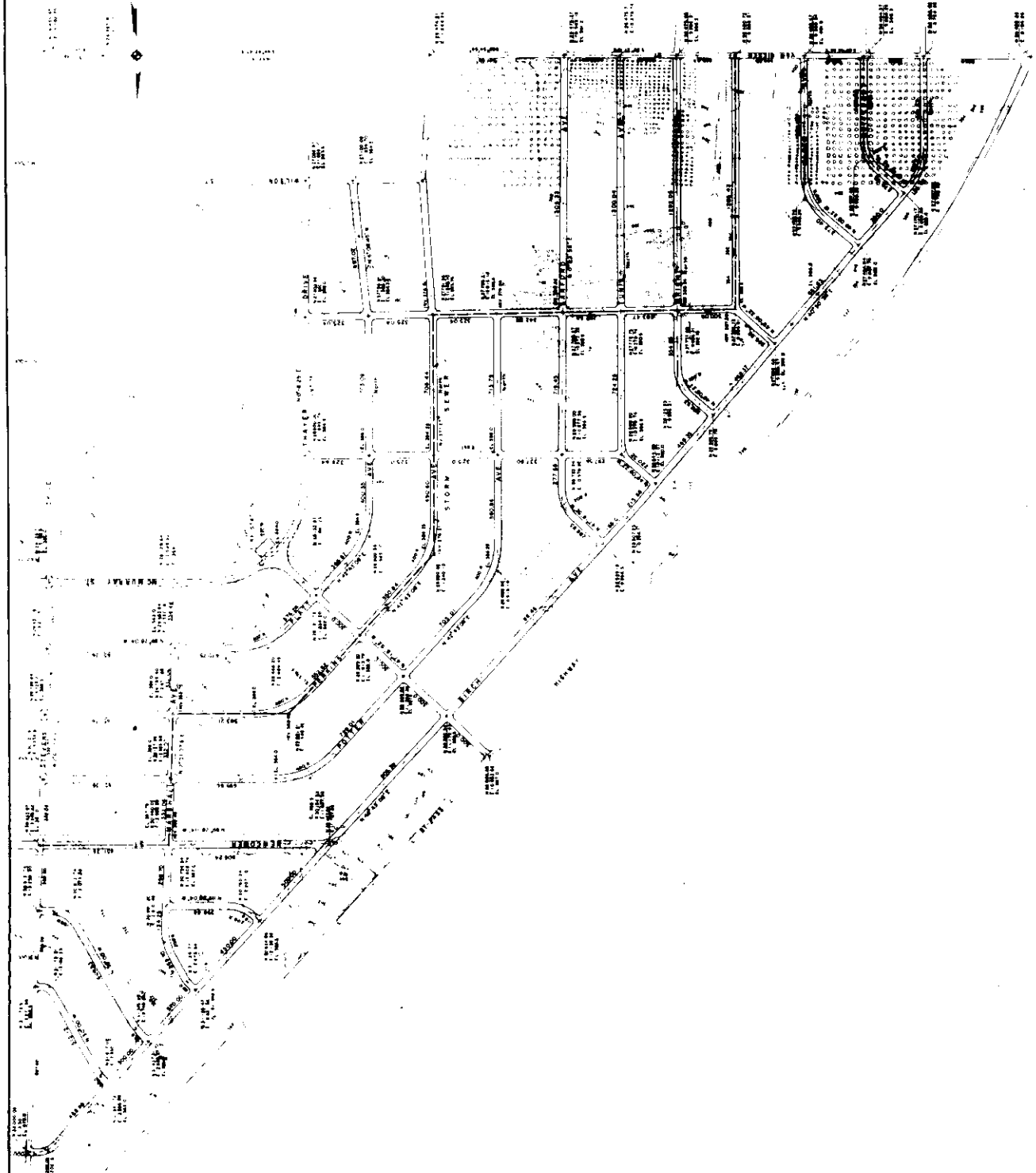
EXISTING ROADS & PARKING AREA



Village + Construction Camp

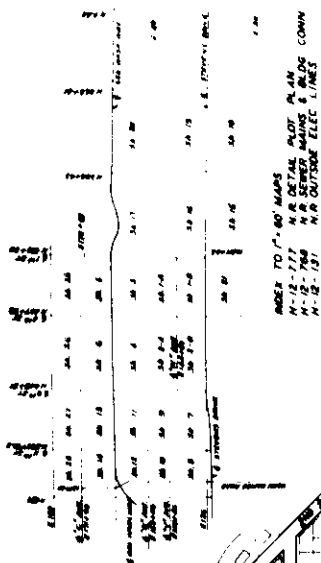






U.S. ATOMIC ENERGY COMMISSION HARPOUR WORKS	
EXPANDED RESIDENTIAL AREA RICHLAND, WASHINGTON STREETS & STORM SEWERS - AREA "J"	
SCALE 1" = 100'	DATE 10/1/54
DESIGNED BY J. H. HARRIS	CHECKED BY J. H. HARRIS
APPROVED BY J. H. HARRIS	DATE 10/1/54
PROJECT NO. AEC-111U-497	

DATE 10/1/54	BY J. H. HARRIS
CHECKED BY J. H. HARRIS	DATE 10/1/54
APPROVED BY J. H. HARRIS	DATE 10/1/54



NOTES TO P. 80 MAPS
N-12-125 N. 12TH ST. & N. 12TH AVE.
N-12-107 N. 12TH ST. & N. 12TH AVE.
N-12-125 N. 12TH ST. & N. 12TH AVE.

