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Hanford Surplus Facilities Program Plan

Fiscal Year 1991

M. C. Hughes
R. K. Wahlen
R. A. Winship

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Westinghouse Hanford Company
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Richland, Washington 99352

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HANFORD SURPLUS FACILITIES PROGRAM PLAN
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ABSTRACT

The Hanford Surplus Facilities Program is responsible for the safe and cost-effective surveillance, maintenance, and decommissioning of surplus facilities at the Hanford Site. The management of these facilities requires a surveillance and maintenance program to keep them in a safe condition and development of a plan for ultimate disposition. Criteria used to evaluate each factor relative to decommissioning are based on the guidelines presented by the U.S. Department of Energy-Richland Operations Office, Environmental Restoration Division, and are consistent with the Westinghouse Hanford Company commitment to decommission the Hanford Site retired facilities in the safest and most cost-effective way achievable. This document outlines the plan for managing these facilities to the end of disposition.

EXECUTIVE SUMMARY

The Hanford Surplus Facilities Program (HSFP) is responsible for the safe and cost-effective surveillance, maintenance, and decommissioning of surplus facilities at the Hanford Site. The number of facilities in the program will vary from year to year in accordance with the demolition of some structures and the addition of other facilities that have been declared excess and are transferred to this program during the last year. There are 129* facilities listed in the current inventory. These facilities have been retired from programmatic use and, with the exception of a number of ancillary buildings, are contaminated with radioactive material. The majority of these facilities are located in the 100 and 200 Areas and include shutdown production reactors, chemical separations and processing plants, waste-handling facilities, and various support structures. The management of these facilities requires a surveillance and maintenance program to keep them in a safe condition, and development of a plan for ultimate disposition. This document outlines the plan for managing these facilities to the end of disposition.

The surveillance and maintenance cost for these facilities is approximately $5 million annually in FY 1991 values. This cost will vary, decreasing when facilities are decommissioned and increasing substantially if they are placed in a long-term protective storage mode.

The decommissioning costs of this program will total approximately $800 million and are projected over a period of 30 years beginning in FY 1989.

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*One facility was completed during fiscal year (FY) 1990, and 32 facilities were added with 13 others transferred to another program.

This cost can vary significantly depending on the decommissioning alternative (e.g., in situ decommissioning, total dismantlement), regulatory requirements, and actual budget received per fiscal year.

The surveillance, maintenance, and decommissioning work will be accomplished by employees of the Westinghouse Hanford Company (Westinghouse Hanford) Hanford Restoration Operations (HRO), except in cases requiring specialists, such as divers or explosives experts. When specialties are required, the services will be contracted out under the direction of the HSFP.

The Westinghouse Hanford Management Control System is used for financial planning and scheduling work. Budget guidance is received annually from the U.S. Department of Energy (DOE), Office of Environmental Restoration and Waste Management. Projects and associated budgets and schedules are established based on this guidance. Project status is monitored and reported monthly. Control procedures have been established for routine surveillance and services. Controls, which ensure compliance with regulations, are incorporated into the individual decommissioning project plans.

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ACWP	actual cost of work performed
ADM	action description memorandum
ADS	activity data sheets
ALARA	as low as reasonably achievable
ARCL	allowable residual contamination limits
BCWP	budget cost of work performed
BCWS	budget cost of work scheduled
CAA	cost account authorizations
CAM	cost account manager
CAP	cost account plans
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CV	cost variance
D&D	decontamination and decommissioning
DFDPO	Defense Facilities Decommissioning Programs Office
DOE	U.S. Department of Energy
DOE-RL	U.S. Department of Energy-Richland Operations Office
DOT	U.S. Department of Transportation
EA	environmental assessment
EAC	estimate at completion
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
ERD	Environmental Restoration Division
FDS	Financial Data System
FY	fiscal year
HRO	Hanford Restoration Operations
HSFP	Hanford Surplus Facilities Program
NEPA	National Environmental Policy Act
PBR	program business representative
PCB	polychlorinated biphenyl
PNL	Pacific Northwest Laboratory
QA	Quality Assurance
RCRA	Resource Conservation and Recovery Act
RI/FS	remedial investigation/feasibility study
SFMP	surplus facilities maintenance program
SV	schedule variance
TEC	total estimate cost
TRU	transuranic
VAR	variance analysis report
WAC	Washington Administrative Code
Westinghouse Hanford	Westinghouse Hanford Company

HANFORD SURPLUS FACILITIES PROGRAM PLAN
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1.0 INTRODUCTION

1.1 PURPOSE

Many U.S. Department of Energy (DOE)-owned nuclear facilities at the Hanford Site that were used during the early nuclear energy programs have no current use and have been retired and declared excess. The majority of these facilities have residual radioactive contamination requiring surveillance, maintenance, and ultimate disposition.

This program plan identifies the work breakdown structure, cost, schedule, and priorities for decommissioning the surplus facilities at the Hanford Site. The plan also describes the activities of the Hanford Surplus Facilities Programs (HSFP) of Westinghouse Hanford Company (Westinghouse Hanford) in the management of these facilities to meet the objectives listed in Section 1.3 of this report and to comply with regulations set forth by the DOE directives.

1.2 SCOPE

This plan covers 129* separate retired facilities located on the Hanford Site. These facilities include large concrete and cement block structures used to house chemical separation processes, nuclear production reactors, support systems, storage tanks, and ancillary buildings.

The scope of this document includes the following increments of the overall program:

- Purpose, scope, and objectives
- Program organizational structure and responsibilities
- Budgeting and planning
- Assumptions and criteria
- Work elements
- Control.

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*One facility was completed during fiscal year (FY) 1990, and 32 facilities were added with 13 others transferred to another program.

1.3 MAJOR SURPLUS FACILITIES MANAGEMENT OBJECTIVES

The following items are the major objectives in the management of the surplus retired facilities.

- Continue maintenance and surveillance of the retired HSFP facilities in a safe, cost-effective, and environmentally sound manner pending decontamination and decommissioning (D&D).
- Provide the planning and engineering necessary to ensure the efficient, cost-effective decommissioning of the HSFP retired facilities.
- Develop short- and long-range budgets and schedules, including identification of projects to complete decommissioning of all contaminated facilities within the program.
- Assess technical and economic feasibility of decommissioning and surveillance alternatives.
- Determine if there are any cost-effective reuses for shutdown facilities.
- Comply with the provisions of both state and federal environmental policies, and develop support documentation.
- Develop innovative, cost-effective decommissioning, surveillance, and asbestos abatement methods that comply with regulatory requirements for environmental and occupational safety.
- Decommission facilities in the safest and most cost-effective manner practicable.
- Maintain worker exposure to as low as reasonably achievable (ALARA) levels through the use of administrative or engineered controls.
- Review and update this program plan annually.

2.0 ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

2.1 ORGANIZATION STRUCTURE

A block diagram of the organization structure is presented in Figure 1.

2.2 RESPONSIBILITIES

2.2.1 U.S. Department of Energy-Richland Operations Office

The U.S. Department of Energy-Richland Operations Office (DOE-RL) Environmental Restoration Division (ERD) is responsible for the Environmental Restoration Program at Hanford.

2.2.2 Westinghouse Hanford Company Environmental Division

The Westinghouse Hanford Company Environmental Division has overall responsibility for planning, coordinating, and integrating the Westinghouse Hanford environmental activities. This includes the D&D and surplus facilities management.

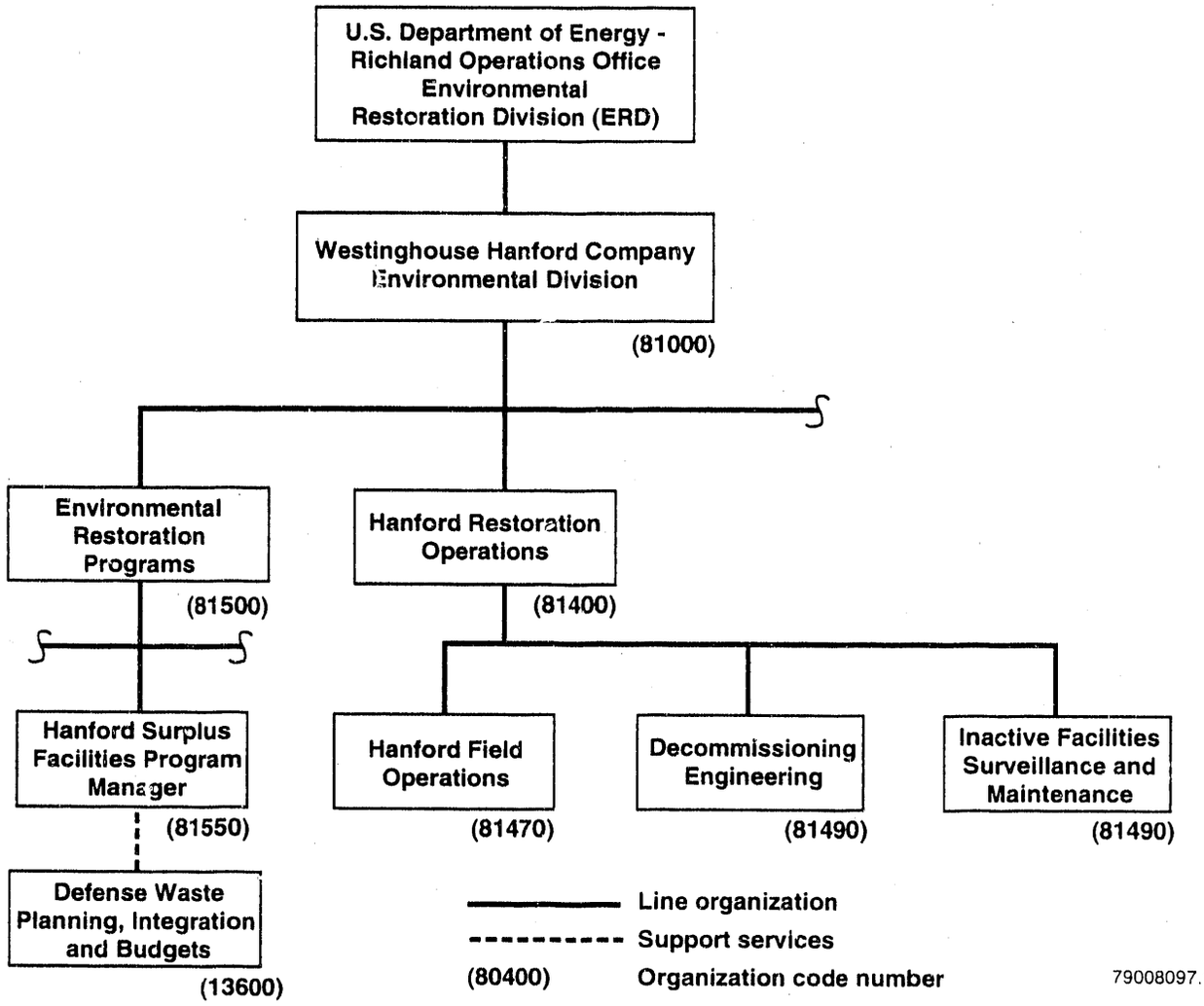
2.2.3 Environmental Restoration Programs

This program integrates the Environmental Restoration and Remedial Action Program with the Environmental Restoration-Decontamination and Decommissioning Program.

2.2.4 Hanford Site Surplus Facilities Programs

At the Hanford Site, the programmatic responsibility within the Westinghouse Hanford-Environmental Restoration Programs for the surveillance, maintenance, and decommissioning of surplus facilities is the HSFP. The HSFP establishes the cost, schedule, and technical baselines for individual projects, such as the 100 Area shutdown reactor facilities, and provides the project management for completing the work. The work activities relative to projects are completed by various functional organizations through a matrix management system. Performing organizations are assigned work by the Program Office using cost account authorizations (CAA) and cost account plans (CAP). Project status is reported to the Program Office using an earned-value system. The majority of decommissioning field work and engineering at the Hanford Site is performed by Hanford Restoration Operations (HRO). Subcontracted work is managed through the HSFP. (Refer to Figure 1 for the organization structure.)

Figure 1. Organization Structure.



2.2.5 Defense Waste Planning, Integration, and Budgets

This office provides a full range of business management services for the Waste Management and Environmental Divisions. Some of the direct support services provided to the HSFP include the detailed budget development and the associated monitoring, analysis, and reporting relative to cost and schedule.

2.2.6 Hanford Restoration Operations

The HRO performs the necessary surveillance and maintenance, decommissioning and environmental restoration field operations on the Hanford Site, including the engineering activities in support of these operations. The HRO also functions as landlord and plant manager for all contaminated surplus facilities and a selected number of inactive noncontaminated facilities.

3.0 BUDGETING AND PLANNING

The HSFP adheres to the guidelines and procedures set forth by the DOE-RL and Westinghouse Hanford with regard to the budgeting and planning of decontamination and decommissioning activities. Defined below are the processes followed by the HSFP in the development and preparation of detailed budgeting, planning, and scheduling of D&D activities.

The HSFP obtains funding for the D&D activities from the DOE-Office of Environmental Restoration and Waste Management. The HSFP receives detailed guidance from the DOE-RL Environmental Restoration Division.

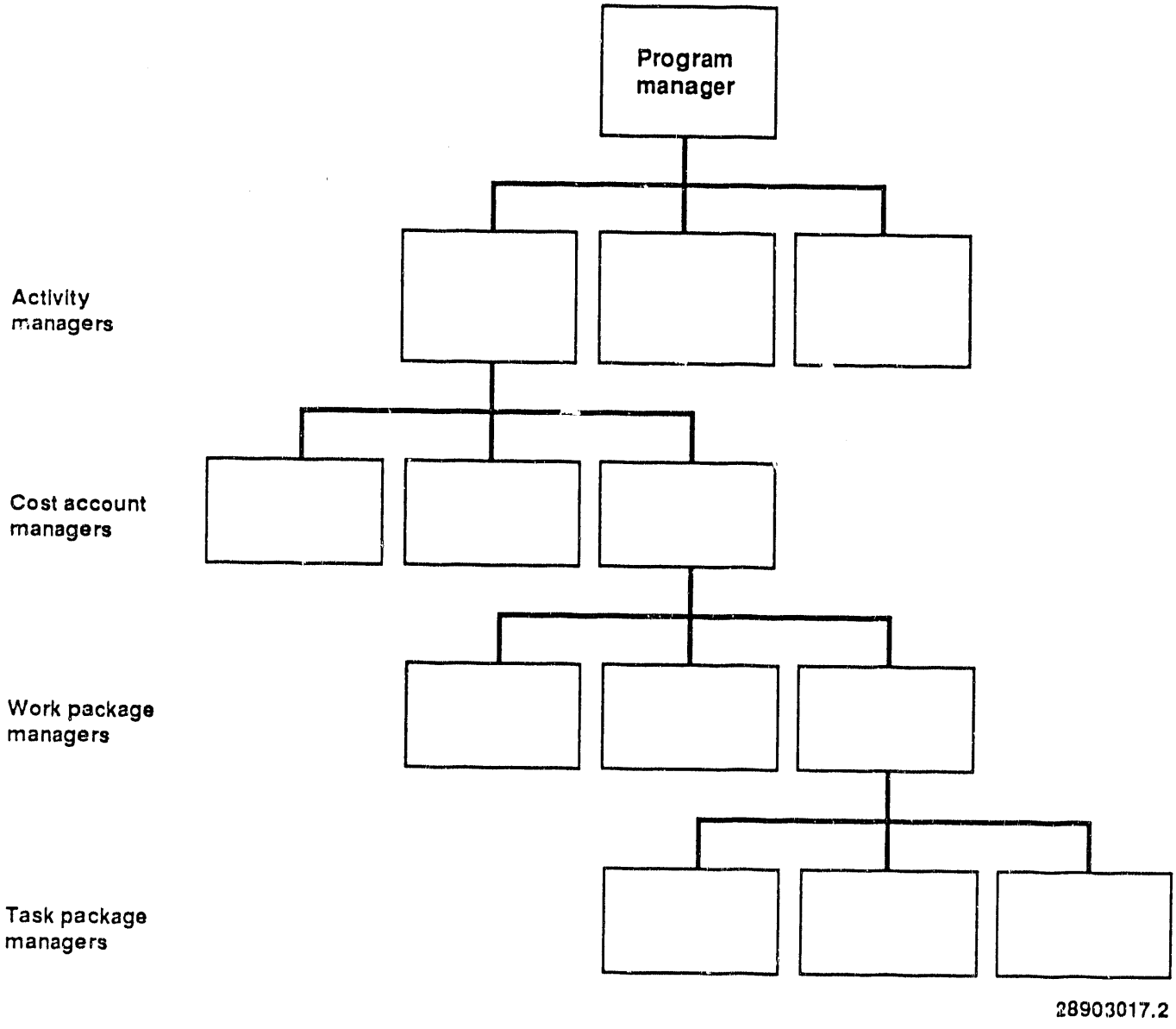
The budgeting cycle (fiscal year +2) begins each fiscal year upon receipt of budget guidance current fiscal year and (fiscal year +1) from DOE. Included in the guidance are funding levels and escalation and inflation assumptions for the outyears. The HSFP also has prepared Activity Data Sheets (ADS) in support of the Office of Environmental Restoration and Waste Management 5-year plan. The ADS provide details by major projects and support all other budget submittals. The ADSs are updated annually as part of the 5-year planning effort.

The HSFP management initiates its detailed planning for the upcoming fiscal year during the first quarter of the current fiscal year. This planning begins by integrating guidance funding levels with long-range plan objectives and project priorities to derive a detailed list of projects for the year. The list is transmitted to HRO for Decommissioning Engineering to develop draft documents that detail the scope for the project. (These documents are known as "scoping" documents.) A project team (headed by the cognizant engineer, including a project coordinator, cost estimator, cost account manager (CAM), scheduler, and program business representative (PBR) prepares the detailed scoping documents. The estimator prepares a project cost estimate based on the scoping document. This estimate is reviewed by the project team and used as a tool for preparing CAAs, the detailed work schedules, and CAPs. This process is targeted for completion by mid-July of each fiscal year.

The CAAs are prepared by the activity manager and approved by the HSFP manager and the PBR. The CAAs are sent to the appropriate CAM to generate the CAPs. The CAMs are responsible for coordination with work package and task package development. The CAAs and CAPs are approved by the HSFP manager before initiating work October 1 of the fiscal year (see Figure 2).

The detailed planning and budgeting begin at the lowest level, the task package, where each task package manager provides the respective work package manager input into the development of the work package. The work package managers follow sequence by providing their input into the development of the cost accounts. This "rollup" process continues to the program level. These data are input into the Financial Data System (FDS) in a development mode until a consensus and approval of workscope and schedules by all responsible management have been achieved. Once the funded activities are approved and their total budget ties with the given funding parameters for the upcoming fiscal year, the planned activities are ready for monitoring and reporting of cost and schedule status information.

Figure 2. Rollup Process for Developing Cost Accounts.



4.0 SURPLUS FACILITIES MANAGEMENT PROGRAM ASSUMPTIONS, CRITERIA, AND PRIORITIES

4.1 ASSUMPTIONS

The program costs, management, and technical strategies presented in this plan are based on the assumptions listed below. These assumptions are based on experience gained in previous surveillance, maintenance, and decommissioning work; engineering studies; and facility characterization.

The following assumptions are consistent with the guidance provided by the DOE-RL. A change in any of the assumptions would result in the need to reevaluate this plan. The HSFP assumptions are as follows:

- Surveillance and maintenance requirements affecting safety and the environment have the highest priority and will be funded ahead of any other program activity. Additional maintenance activities are supported relative to the potential health risk involved and cost effectiveness.

- Radiological dose rates to personnel and to members of the public will be controlled in accordance with DOE standards for radiation protection and will be reduced to ALARA levels.

- Allowable residual contamination limits (ARCL) for in situ decommissioning will be calculated using the pathway analysis methodology as applicable.

- Future radiological and chemical potential characterization changes were not considered in the current overall decommissioning strategy. Estimated radionuclide inventories are based on the best data available when this plan was prepared.

- Radioactive wastes, transuranic (TRU), and mixed waste not decommissioned in situ will be handled in compliance with applicable DOE orders and with Westinghouse Hanford requirements.

- Material or equipment removed from the site and released for uncontrolled use will meet all radiological DOE requirements applicable at the time of removal.

- The annual budget is based on guidance received from DOE for the specific fiscal year. The outyear's annual budget also is based on DOE guidance and on completing all project work by FY 2017. (See Appendix C for cost and schedule.)

- The reactor facilities and land they occupy can, if necessary, be controlled institutionally for a period of up to 100 years. Institutional control means the controlled use of a decommissioned site or area through regulation by local, county, state, or federal agencies. Because of radiological conditions, institutional control may include access control, minor maintenance and surveillance, and

site-use restrictions. Institutional control starts when a facility is considered to be decommissioned and ends at 100 years, or any time within the 100-year period.

- The site terrain will be restored to as near-natural condition as practicable.

- The program plan work element schedule and cost are based on the one-piece removal alternative for the reactors. The 100 Area ancillaries and the 200 and 300 Area facilities, schedule, and cost are based on in situ decommissioning. A change to other alternatives will require a review and update of these schedules and costs.

4.2 CRITERIA

4.2.1 Criteria Used in Assessing Decommissioning Alternatives

The following factors are used to assess the relative merits of several candidate decommissioning methods to determine objectively the preferred alternatives:

- Dollar expenditure
- Public and occupational radiation exposure
- Manpower requirements
- Project duration
- Radioactive waste disposal volume
- Potential for reuse of equipment, material, and facility
- Time until site can be restored to a near-natural condition.

Criteria used to evaluate each factor are based on the guidelines presented by the DOE-RL and are consistent with the Westinghouse Hanford commitment to decommission the Hanford Site retired facilities in the safest and most cost-effective way achievable.

4.2.2 Environmental Protection Criteria

Before starting any decommissioning work at the Hanford Site, Westinghouse Hanford, as a DOE-RL contractor, is required to comply with local, state, and federal environmental protection criteria. Compliance will require a review of all applicable regulations of the National Environmental Policy Act (NEPA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and the Washington Administrative Code (WAC) for dangerous waste. The requirements of these regulations are of particular concern because of the range of

environmental issues that may have to be addressed and because of the potential for significant impact on the decommissioning budget and schedule.

These processes will be implemented early in the planning stages to allow Westinghouse Hanford and the DOE-RL sufficient time to complete the necessary documentation. Depending on the proposed project, the DOE may specify one of two levels of NEPA documentation, including an environmental assessment (EA), and/or an environmental impact statement (EIS). The DOE may also prepare an action description memorandum (ADM). The ADM serves as a basis for determination of the required level of NEPA documentation. In some cases, a specific action may be determined to be categorically excluded and therefore would not equire an EA or an EIS.

In conjunction with the specified NEPA process, the DOE may direct that a remedial investigation/feasibility study (RI/FS) be conducted to satisfy the requirements of the RCRA and CERCLA and/or those specified by the WAC on Dangerous Waste Regulations (Ecology 1987).

4.2.3 Safety Criteria

Until decommissioning is complete, routine maintenance and surveillance will be conducted on the shutdown facilities to maintain an industrial and radiological safe status and to correct any safety conditions found to be out of standard.

Completing the decommissioning work safely is of primary concern to Westinghouse Hanford. Accordingly, the guidelines presented in DOE Order 5481.1A (DOE-RL 1983) will be followed for all decommissioning work. This Order establishes specific safety criteria for all DOE activities, including decommissioning work, and requires safety analyses be prepared on all projects.

The safety analysis process consists of two parts. The first part is a preliminary safety analysis that becomes a part of the planning documentation for a specific decommissioning activity and determines the level of safety review and approval required to authorize the activity.

The second part of the safety analysis process is documented in the startup readiness review to authorize starting the decommissioning activity. Both the preliminary and final safety analyses will follow the Westinghouse Hanford requirements. The suggested format of both the preliminary and final safety analyses will discuss the following general headings as applicable to decommissioning:

1.0 Summary
2.0 Introduction
3.0 Site Description
4.0 Facility and Process Description

4.1 Facility Description
4.2 Process Description
4.3 Waste Management
4.4 Safety Features

5.0 Design Criteria
6.0 Safety Analysis

6.1 Safety Analysis Methodology
6.2 Hazards Analysis
6.3 Risk Assessment
6.4 Summary

7.0 Operational Safety Limits
8.0 References
Appendixes (as necessary)

4.2.4 Quality Assurance

The implementation of quality assurance criteria relative to Decontamination & Decommissioning (D&D) activates is outlined in a quality assurance plan. All line organizations performing D&D work are responsible for ensuring quality work per the established criteria. In addition, the quality assurance organization provides an independent overview to ensure that the overall Hanford Surplus Facilities Program requirements are effectively implemented. The quality assurance organizations also review, assess, and verify the achievement of quality.

4.3 PROJECT PRIORITIES

4.3.1 Prioritization Criteria

Because of the large number of surplus facilities at the Hanford Site awaiting final disposition and the limited funds available to perform this work, decommissioning priorities must be set. Once priorities are established, detailed costs and schedules that reflect these priorities can be developed with more accuracy.

The former Defense Facilities Decommissioning Programs Office (DFDPO) established criteria to guide participating decommissioning contractors in determining project priorities and ranking (DOE-RL 1982). These criteria continues to be used until a new method of prioritization is developed. The six factors are listed below in order of priority assigned by DFDPO.

1. **Legal and Safety Standards**--The evaluation factor of greatest concern to DFDPO is legal or contractual obligations. Legal requirements generally pertain to the safety of the public, workers, and the environment. Priorities are assigned to ensure that the facilities in the program pose no unacceptable safety risk. Surveillance and maintenance of surplus facilities in a safe

condition (until a decommissioning project can be initiated) is considered to be the highest overall program priority.

2. **Economic Impact of Delayed Versus Immediate Decommissioning**--Consideration must be given to the tradeoff between the cost of continued maintenance and surveillance and the cost of final facility disposition. An economic analysis model that uses a monetary discounting technique to calculate the "present value" cost for surveillance and maintenance, as well as for decommissioning, is used in this determination.

3. Health Risks of Delayed Decommissioning--The health risk to onsite personnel and the general public as a result of postponing decommissioning must be considered. A health-risk model is used that ranks each project relative to all other surplus facilities maintenance program (SFMP) projects based on the condition of the facility, the amount and types of radioactive material present in the facility, and the population and meteorological conditions of the area surrounding the facility.

4. **Future Site Plans**--The compatibility of the existing facility with future plans for the site is a factor used to identify facilities that are incompatible with either existing or projected future uses of the site on adjoining sites.

5. **Cost-Effectiveness Program Management**--Cost-effective program management is another evaluation factor that could result in early initiation of a decommissioning project or delay it until a later date. This factor concerns the availability of a developed, efficient organization for the facility project. Where organized programs are already in place at a site, D&D work for facilities on the site will proceed more efficiently and safely than for projects where staff development and training rampup are still required. Cost-effective program management may have important influence on the total cost of this project. High weight is assigned to cost; thus, this factor may have significant bearing on project prioritization.

6. **Other Special Factors**--In some instances, special factors may be unique to a few projects and might contribute to the overall priority ranking of these projects. Special factors such as local government concerns and public opposition or acceptance of proposed D&D work may influence a project priority.

4.3.2 Prioritization of Projects

The criteria presented above were considered in establishing the order in which the facilities are decommissioned. The listing of facilities scheduled for decommissioning presented in Appendix C are in order of priority; however, it should be recognized that changes in the ranking may be necessary to accommodate unforeseen change in the availability of funds, regulatory requirements, and changes to the above factors.

5.0 WORK ELEMENTS

5.1 GENERAL

The work elements fall in three general categories: (1) program management and administration, (2) surveillance and maintenance, and (3) decommissioning projects. The specific work elements and cost for these categories are identified in Appendix C.

5.1.1 Program Management and Administration

The program management and administration activity includes the HSFP manager, his staff, and various support services. This activity provides the long-range planning, advanced engineering, and program management.

5.1.2 Surveillance and Maintenance

The surveillance and maintenance activity includes the staff dedicated to this activity and the support services received from 100 Area, Site Surveillance Health Physics, and Operations Support Services. Cost for surveillance and maintenance will vary with the level of maintenance required to maintain the confinement of radioactive materials and provide the degree of safety required to comply with the goals and objectives of Westinghouse Hanford and the DOE-RL. For planning purposes, the surveillance and maintenance cost is estimated at $5 million annually.

5.1.3 Decommissioning Projects

A project comprises work elements that may include several individual facilities. The tables in Appendix A identify the facilities in each project and assign task numbers to the project. The budget requirement for disposing of the current inventory of retired facilities is estimated at approximately $800 million.

5.1.4 Underground Storage Tanks

The removal of underground tanks regulated by 40 CFR Parts 280 and 281 is being coordinated through the Surplus Facilities Program office. The implementation plan for this work is included in the work packages.

5.1.5 Asbestos Abatement

The asbestos abatement program is being consolidated by the representatives of HSFP office into a site-wide program. The consolidated program plan will be documented under separate cover, and will outline a management plan to be followed in implementing asbestos abatement.

5.1.6 Reactor Support Facilities

There are 18 noncontaminated facilities in the 100 and 200 Areas that supported the production facilities. These have been added to the schedule for decommissioning and are listed under A-12 in Appendix A.

6.0 CONTROL

6.1 INDUSTRIAL AND RADIOLOGICAL SAFETY

In line with Westinghouse Hanford policy to operate and maintain company-managed facilities according to DOE Orders and in compliance with the letter and spirit of other applicable federal, state, and local regulations, Table 1 has been prepared and shows the orders critical to control the items listed below.

6.1.1 Industrial Safety

Transfer of new facilities to the status of "retired" is accepted on completion of a Facilities Transfer form. Before a facility is accepted, it is inspected and any deviation from conditions noted are resolved. Once the facility has been accepted, it is placed on the surveillance and maintenance schedule to receive inspections, surveys, and maintenance as required to meet the goals and objectives of the ongoing safety program of Westinghouse Hanford.

The safety of a facility is the single most important factor in funding to eliminate the hazards or scheduling a facility for decommissioning. When a facility is targeted for decommissioning, a detailed engineering package is developed that includes a safety hazards analysis and a startup readiness review. Before starting work, the startup readiness review is made, evaluating the safety preparedness of the workers, adequacy of procedures to cope with potential hazards, and the safety conditions of the facility and site. The readiness review also ensures that all environmental and safety documentation is in place. During the progress of work, regular safety meetings and safety inspections are made. The personnel assigned to the project participate in all ongoing safety programs. At the completion of the project, a project closeout report is issued. This report identifies the status of the site at the end of the project and identifies surveillance and maintenance requirements, if needed beyond the closeout.

6.1.2 Radiological Safety

Monitoring for radiological and environmental safety will be in compliance with established controls.

Waste disposal will be made in compliance with DOE Order 5480.1A (DOE-RL 1988). The ARCL methodology developed by Pacific Northwest Laboratory (PNL) will be used, as applicable, to define the amount of radioactive material that may safely remain after decommissioning a facility. The management of various types of waste generated during D&D is outlined in the following sections.

Table 1. Regulatory Requirements. (sheet 1 of 3)

DOE Order Number	Title	Comments
1324.2	Records Disposition	Establishes records handling procedures
3790.1	Occupational Safety and Health Program for Federal Employees	Establishes the policy for implementing and administration of occupational safety and health program.
4300.1B 4320.1A	Real Property and Site Development Site Development and Facility Utilization	Provides requirements for preparing site development plans and facility utilization for DOE facilities.
5000.3	Unusual Occurrence Reporting System	Establishes DOE policy and provides instructions for reporting, analyzing, and disseminating information on programmatically significant events.
5100.3	Field Budget Process	Establishes budget procedure and requirements.
5400.1	General Environmental Protection Program Requirements	The order defines environmental protection requirements that are established in DOE Order 5400.1B. All CM, MP, and MRP references in the DOE Orders 5400 series have application to this order.
5400.xy In Draft	Radiological Effluent Monitoring and Environmental Surveillance	Provides guidance for radiological monitoring and environmental surveillance.
5400.3	Hazardous and Radioactive Mixed Waste Management	Provides instructions for implementing a DOE hazardous waste management program.
5400.4	Comprehensive Environmental Response, Compensation, and Liability Act Requirements	Provides direction for implementing a DOE CERCLA program.

Table 1. Regulatory Requirements. (sheet 2 of 3)

DOE Order Number	Title	Comments
5400.5	Radiation Protection of the Public and the Environment	Presents a program and standards for radiation protection.
5440.1B	National Environmental Policy Act (NEPA)	Establishes DOE policy for implementation of NEPA 1969.
5480.1A	Environmental Safety and Health Program for DOE Operations	Outlines environmental protection, safety and health protection policies and responsibilities.
5400.5	Radiation Protection of the Public and the Environment	Presents a program and standards for radiation protection.
5482.1B	Environmental, Safety, and Health Appraisal Program	Establishes DOE environmental protection, safety, and health protection appraisal program.
5484.1	Environmental Protection, Safety, and Health Protection Information Reporting Requirements	Specifies requirements and procedures for reporting and investigating matters of environmental protection, safety, and health protection significant to DOE operations.
5700.4	Project Management System	Establishes requirements and objectives, and assigns responsibilities and authorities necessary for acquisition of major systems.
5780.6B	Quality Assurance	Defines DOE's Quality Assurance program.
5720.2	Radioactive Waste Management	Policies and guidelines for management of radioactive waste and contaminated facilities.
6530.1	General Design Criteria Manual	Provides general design criteria for use in requisitions of DOE facilities.

Table 1. Regulatory Requirements. (sheet 3 of 3)

Washington State Control	Title	Comments
WAC 173-303	Dangerous Waste Regulations	Identifies dangerous solid wastes, defines surveillance and monitoring requirements, reporting and tracking requirements, regulations for siting, construction, operation and disposal of facilities, permit requirements, and encourages recycling.
5481.1	Safety Analysis and Review System	Provides a system for evaluating safety preparedness and approval to implement and proceed with work.

NOTE: Westinghouse Hanford Company addresses the U.S. Department of Energy regulations in various manuals, procedures, and data compilations.

Table 2. Release Levels and Priorities for Decommissioned Facilities and Land Areas.

Priority	Release level	Site status
1	Decontaminate to less than detectable	Site can be released immediately for unrestricted use.
2	ARCL[a] of 25 mrem/year or less immediately following decommissioning.	Site can be released immediately for unrestricted use.
3	ARCL of 25 mrem/year or less within 100-year institutional control period.	Site can be released in the year that the radionuclides have decayed to ARCL value of less than 25 mrem/year.
4	ARCL of up to 500 mrem/year at end of 100-year institutional control period.	DOE-RL[b] approval is needed to exceed 25 mrem/year.

[a]Allowable residual contamination levels.
[b]U.S. Department of Energy-Richland Operations Office.

6.1.2.1 Management of Waste Generated during Decontamination and Decommissioning.

6.1.2.1.1 Clean Waste--Clean wastes that are free of radioactive contamination and other hazardous material such as wood, cloth, paper, plastic, and most construction materials are not subject to regulation and will be disposed of in approved clean waste landfills.

6.1.2.1.2 Mixed Waste--Waste that is both a radioactive hazard and a chemical hazard is designated mixed waste. Mixed waste will be packaged and disposed of in accordance with provisions of Part 1 of WHC-CM-7-5 *Environmental Compliance* and WAC 173-303 as implemented in WHC-CM-5-16 (WHC 1989).

6.1.2.1.3 High-Level Radioactive Waste--Readily retrievable high-level waste will be processed to a final immobilized form in the Defense Waste Processing Facility and the Waste Vitrification Plant preparatory to permanent disposal in a deep geological repository (WHC-CM-7-5, DOE 5820.2A, 1988).

6.1.2.1.4 Transuranic Waste--Transuranic waste will be transferred in compliance with DOE and Department of Transportation (DOT) regulations to the Waste Isolation Plant for interim storage and safe disposal (WHC-CM-7-5, DOE 5820.2A).

6.1.2.1.5 Low-Level Radioactive Waste--Low-level waste will be processed by two general disposal methods. When the low-level waste meets the requirements of ARCL calculations, the waste will be disposed of in situ. If a low-level waste fails to meet ARCL requirements, the waste will be packaged and shipped to the approved low-level waste burial ground in the 200 Area (WHC-CM-7-5, DOE 5820.2A).

6.1.2.1.6 Hazardous Waste--The Washington State *Dangerous Waste Regulations*, Washington Administrative Code (WAC 1989) will be used to classify the type of hazardous waste. The regulations in WAC 173-303 will be implemented by the applicable procedures in Westinghouse Hanford Controlled Manuals 4-2, 2-14, 1-1, 1-3, and 7-5 (WHC 1989, 1990).

6.1.2.2 Waste Left at the Site (Decommissioned In Situ). The majority of radioactive wastes will be left in place as the facilities are decommissioned. The amount (curies) that can remain safely in a decommissioned facility is the amount that will not produce an annual whole body dose or organ dose greater than 25 mrem to an individual living on the site released. The ARCL methodology is used to estimate dose from the residual radioactivity by analysis. This methodology is explained in the following section.

6.1.2.3 Allowable Residual Contamination Levels. The historic practice at the Hanford Site is to release equipment and materials for unrestricted use when found to be "free of contamination." Generally, the definition for free

of contamination has been less than detectable with portable radiation detection instrumentation, such as a Geiger Muller or portable alpha monitor. This same approach has been used for decontamination and decommissioning of surplus facilities, i.e., cleanup to less-than-detectable levels before release and demolition.

The DOE recently adopted the release limits defined in Regulatory Guide 1.86 (NRC 1974). These limits, in some cases, are less restrictive than the less-than-detectable criterion. In the spirit of the ALARA philosophy, the less-than-detectable criterion will be used whenever practicable. However, in all cases, material released for offsite use will, as a minimum, meet the limits defined in Regulatory Guide 1.86. Use of Regulatory Guide 1.86 release limits requires the previous approval of Westinghouse Hanford Environmental and Occupational Safety.

This conservative approach is considered a good practice when releasing equipment and materials for offsite use; however, when the less-than-detectable criterion is applied to clean up surplus facilities, it can result in unreasonably high cost. Therefore, the DOE-RL has directed the Hanford Site contractors to use the ARCL methodology, where applicable, to establish radiological release criteria for decommissioning surplus contaminated facilities on the Hanford Site.

The ARCL method, developed by PNL, defines the amount of radioactive material that may remain safely after a facility has been decommissioned. The ARCL method defines realistic exposure scenarios, based on an analysis of potential radiation exposure pathways. The scenarios consider the numerous ways in which persons could be exposed to the remaining radioactive materials during or after institutional control of the site.

The radiological inventory of the facility is estimated from sampling data and then, using the appropriate dose pathways, a dose along with a 90% upper-confidence limit is estimated. If the predicted potential dose to an individual determined by this method is less than 25 mrem/year, then no further actions would be required for that site. If the predicted potential dose exceeds the limit, then additional remedial action must be taken.

6.1.2.4 Application of the Allowable Residual Contamination Limits Method. Current DOE guidance requires that the dose to a maximally exposed person, following the release of a decommissioned facility or land area for unrestricted use, be less than 25 mrem/year to the whole body or any organ. (A maximally exposed site resident is assumed to receive the maximum possible radiation dose from all of the exposure pathways on a particular site.)

If the ARCL analysis indicates that the 25 mrem/year criterion cannot be achieved cost effectively for a particular site, then the DOE-RL must approve the specific dose levels for that site, calculated by use of the ARCL method,

before initiation of the decommissioning work. The ALARA philosophy is applicable whenever it is cost effective to reduce doses below the 25 mrem/year level.

Table 2 lists dose levels to a maximally exposed person and how dose levels relate to site status after decommissioning. The ALARA philosophy and cost-effectiveness are of primary importance in determining which release level will be achieved for a particular site.

6.1.2.5 Release of Materials for Unrestricted Offsite Use. The DOE recently adopted the release limits defined in Regulatory Guide 1.86 (NRC 1974). These limits, in some cases, are less restrictive than the less-than-detectable criterion. In the spirit of the ALARA philosophy, the less-than-detectable criterion will be used whenever practicable. However, in all cases, material released for offsite use will, as a minimum, meet the limits defined in Regulatory Guide 1.86. Use of Regulatory Guide 1.86 release limits requires the previous approval of Westinghouse Hanford Environmental and Occupational Safety. Table 3 lists these criteria.

6.1.2.6 Disposition of Contaminated Equipment. Equipment contaminated with radioactive materials should be dispositioned using the priorities listed below. The intent of these priorities is to practice the ALARA philosophy by minimizing the movement and handling of radioactive materials.

- **Reuse Equipment**--Equipment should be removed for reuse if it is cost effective to do so and if a new user for the equipment has been identified. The new user will provide the funds for removal and transport to the new location.

- **Leave Equipment in Place**--If a cost-effective reuse is not identified, equipment should be left in place. This priority should be used only if the radioactive material on the equipment can be contained during the demolition phase of decommissioning.

- **Relocate Equipment in Same Facility**--If there is a potential for release of radioactive material to the environment during demolition of the facility containing the equipment, the equipment should be relocated to an area in the same facility where it is protected (e.g., tunnel, basement) before demolition.

- **Relocate Equipment to Another Contaminated Facility**--If equipment cannot be left in place or relocated in its own facility, the equipment should be relocated to a below-grade void in another contaminated facility where it can be covered with a minimum of 1 m of clean fill.

Table 3. Acceptable Surface Contamination Levels for Materials Removed from the Site.

Radionuclide[a]	Average[b,c]	Maximum[b,d]	Removable[b,e]
Uranium (natural), ^{235}U, ^{238}U associated decay products	5,000 dpm alpha/100 cm^2	15,000 dpm alpha/cm^2	1,000 dpm alpha/cm^2
Transuranics, ^{226}Ra, ^{228}Ra, ^{230}Th, ^{228}Th, ^{231}Pa, ^{227}Ac, ^{125}I, ^{129}I	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Thorium (natural) ^{232}Th, ^{90}Sr, ^{223}Ra, ^{224}Ra, ^{232}U, ^{126}I, ^{131}I, ^{133}I	1,000 dpm/100 cm^2	3,000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous fission, except ^{90}Sr and others noted above)	5,000 dpm/ß-Y/ 100 cm^2	15,000 dpm/ß-Y/ 100 cm^2	1,000 dpm/ß-Y/ 100 cm^2

[a]Where surface contamination by both alpha-emitting and beta-gamma-emitting nuclides exists, the limits established for alpha-emitting and beta-gamma emitting nuclides should apply independently.

[b]As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive materials as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c]Measurements of average contaminant should not be averaged over more than 1 m^2. For objects of less surface area, the average should be derived for each such object.

[d]The maximum contamination level applies to an area of not more than 100 cm^2.

[e]The amount of removable radioactive material per 100-cm^2 surface area should be determined by wiping that area with dry filter or soft, absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface is determined, the pertinent levels should be reduced proportionally, and the entire surface should be wiped.

- **Relocate Equipment to a Noncontaminated Facility**--If the equipment cannot be relocated to a void in another contaminated facility, it should be relocated to a void in a noncontaminated facility that is scheduled to be decommissioned. Special authorization from Westinghouse Hanford Environmental and Occupational Safety is required for this option.

- **Remove Equipment for Burial**--As a last resort, the equipment should be removed and packaged for disposal at the Hanford Site 200 Area low-level waste disposal site.

6.2 DISPOSITION OF NONRADIOACTIVE, HAZARDOUS MATERIAL

The disposition of nonradioactive, hazardous wastes and materials, including asbestos, mercury, polychlorinated biphenyl (PCB) oil, and possible other materials, will be addressed in the safety hazards assessment issued by Westinghouse Hanford, in accordance with DOE directives, before any actual decommissioning work begins on a facility. The applicable decommissioning work procedures will provide explicit instructions to control the release of any hazardous material during decommissioning work. Table 4 lists some of the significant nonradioactive hazardous materials present in the Hanford Site facilities. In addition, Section 6.1.2.1 outlines the management of various types of waste generated during the D&D process.

6.3 QUALITY ASSURANCE

A quality assurance (QA) plan has been prepared for implementation of Nuclear Quality Assurance-1 requirements for D&D activities. The QA plan applies to operations performed on surplus facilities, inactive sites, and selected treatment, storage, and disposal facilities subject to closure requirements at the Hanford Site.

6.4 PROJECT MANAGEMENT AND CONTROL

The administrative controls for tracking cost and schedules are listed in the following.

6.4.1 Cost and Schedule Performance Monitoring

The HSFP will track cost and schedule, using Westinghouse Hanford Management Control System.

Table 4. Nonradioactive, Hazardous Materials Present in the Hanford Site Shutdown Facilities.[a]

Material	Location	Preferred disposition
Asbestos	Pipe insulation in many facilities; siding material and floor covering on a number of facilities	All friable asbestos will be removed and disposed of in accordance with established procedures.
Mercury	Panel gauges for control equipment in all facilities.	All mercury will be removed before decommissioning.
Polychlorinated biphenyl (PCB) oil shutdown	In transformers.	All PCB remaining in facilities will be removed before decommissioning. Sampling program currently is being conducted to determine PCB inventories.
Lead	Reactors, shielding caves, sanitary sewer joints, and storage	Pending.

[a]Listing is not all inclusive. Some chemical hazardous wastes have not been included.

This earned-value system tracks cost, schedule, and performance on a monthly and to-date basis of all decommissioning projects as they progress toward completion. Cost-performance reports will be prepared through the FDS on a monthly basis. The reports will use the CAPs to establish a fiscal year performance baseline. The report will compare scheduled cost, budget cost of work scheduled (BCWS), to work performance, budget cost of work performed (BCWP), to actual cost of work performed (ACWP). Any deviations from the planned schedules or spending will be reported as a schedule variance (SV) or a cost variance (CV). If the variances exceed the thresholds of 10% or $100,000, whichever is less, the CAM is required to complete a variance analysis report (VAR), which is to be returned to the activity manager by the tenth working day of the following month. The VAR will explain cause for the SVs and CVs, along with corrective action and impacts. Additionally, a current fiscal year and future year's estimate at completion (EAC), along with a total estimate cost (TEC), will be calculated. The VAR information will be reviewed by the activity manager and approved by the HSFP manager.

Changes to the work scheduled in the base plan will be documented by processing a change control request. An approved copy of the change request will be filed by Program Administration in the Program Office.

6.5 REGULATORY REQUIREMENTS

The DOE regulatory requirements are implemented through the various control manuals developed by Westinghouse Hanford as management directives (see Table 1). These directives, as applicable to the HSFP, become a part of the activities associated with surveillance, maintenance, and decommissioning of the facilities. The requirements are to provide employees with clear, documented guidelines consisting of policies, work procedures, performance requirements, process or equipment operational limits, and the following rules of conduct.

- Avoid or mitigate nuclear, radiological, environmental, or industrial safety incidents.
- Protect the general public and employees from injury.
- Avoid or mitigate production or property losses.
- Ensure compliance with DOE Orders, state and federal laws and regulations, industrial codes and standards, requirements of prime contract with the DOE, and Westinghouse Corporate policies.
- Ensure the financial integrity and cost effectiveness of operations of Westinghouse Hanford.
- Ensure the quality and technical excellence of work performed.

6.6 FACILITY ACCEPTANCE AND TRANSFER

6.6.1 Facility Transfer and Acceptance Requirements

To be eligible for acceptance in the HSFP, facilities must meet the following administrative, technical, and physical requirements.

- The facility and surrounding area will be in a radiologically safe condition, with a current radiation and hazardous chemical survey complete and available.
- The structure(s) and monitoring system will be in a condition adequate to contain and monitor for radiation, contamination, and hazardous chemicals.

- All stored special nuclear materials, reactor fuels, radioactive contaminated liquids, and hazardous chemicals will have been removed from the facility. In addition, all bulk and containerized radioactive-contaminated waste and sludge will have been removed from the facility.

- Deactivation and shutdown status of the facility will have been documented (i.e., final radiological and hazardous substance survey, final configuration, surveillance and maintenance records, and requirements).

- If available, a formal surveillance and maintenance plan will be provided.

- Security systems and procedures will be adequate to prevent unauthorized entry.

6.6.2 Facility Transfer into the Program

The required actions to transfer a surplus facility into the HSFP are coordinated between the manager of HSFP and the building manager.

If a facility is accepted, HSFP management incorporates it into the program plans and budget until disposition is complete and the facility is transferred out of the program. Identification of the funding source for surveillance, maintenance, and decommissioning will be determined at the time the facility is being considered for transfer, and the agreement then becomes part of the approval documentation.

6.6.3 Facility Transfer out of the Program

When determined there is a use for a facility currently in the HSFP or the decommissioning of a facility is completed, a formal letter is submitted to HSFP requesting its transfer out of the program. Organizations accepting the facility from the HSFP assume full responsibility for the facility and any further disposition, including decommissioning as appropriate.

6.6.4 Identification and Description of Surplus Facilities Questionnaire

A facility questionnaire form (which includes information that will assist users when filling out the form) and a suggested form letter for submitting a facility transfer request to HSFP is documented in special Program Management Instructions. The forms are in four parts and identified as follows:

Part 1. Facility Disposition Planning and Cost Data
(Form No. A3000-423)

Part 2. Facility Data
(Form No. A3000-424)

Part 3. Facility Radiological Data
(Form No. A3000-426)

Part 4. Surveillance Data
(Form No. A3000-425)

6.6.5 Property Management

Before the disposition of a facility and piece of equipment, a declaration of excess is prepared which makes the property available to other organizations and government agencies. If no interest is shown, a property disposal request form is completed and the facility and equipment are disposed of. Disposal can include demolition or salvage. Regardless of the final disposition, the facility and equipment must be properly released. Release criteria are outlined in Section 6.1.

7.0 DOCUMENTATION AND APPROVALS

7.1 SURVEILLANCE AND MAINTENANCE GUIDELINES

Surveillance and maintenance guidelines unify the surveillance and maintenance activities concerning responsibility, surveillance inspection, maintenance, monitoring, and recordkeeping. These guidelines set forth the surveillance and maintenance requirements that will be used in documenting unit procedures and tasks performed in surveillance and maintenance as outlined in site-specific instructions. These guidelines require approval of the HRO manager.

The surplus facilities will be maintained to meet the requirements of protective storage until an alternative is opted and funded for final disposition. Long-range surveillance and maintenance plans for the 100 Areas and 200 Areas are being revised and will be reissued in FY 1991.

7.2 DECOMMISSIONING PROJECT WORK

All surplus facilities will be segregated into work packages. When the decision is made to decommission a facility and funding is available, a project proposal will be developed that includes detailed engineering, detailed procedures on how the job is to be done, safety hazard analysis, a start-up readiness review, and project closeout requirements. These elements of the project are documented in the project plan and require various levels of approval depending on the size of the project. Approval levels are set forth under the Westinghouse Hanford management control system. Work approval for the specific tasks is established in the work package project plan.

7.3 LISTINGS OF HANFORD SITE FACILITIES

A listing of all aboveground facilities, both operational and retired, is maintained by Westinghouse Hanford Support Services, Facility Management and Site Planning. A listing of all underground facilities (i.e., cribs, tanks, and burial grounds) is maintained by Westinghouse Hanford Environmental Division, Environmental Engineering.

8.0 REFERENCES

DOE, 1988, *Radioactive Waste Management*, DOE Order 5820.2A, U.S. Department of Energy, Washington, D.C.

DOE-RL, 1982, *Surplus Facilities Management Program Methodology for Establishing Decommissioning Priorities*, RLO/SFM-82-7, U.S. Department of Energy-Richland Operations Office, Richland, Washington.

DOE-RL, 1983, *Safety Analysis Review System*, DOE-RL Order 5481.1, U.S. Department of Energy-Richland Operations Office, Richland, Washington.

DOE-RL, 1988, *Environment, Safety, and Health Program for Department of Energy Operations for Richland Operations*, DOE-RL Order 5480.1A, U.S. Department of Energy-Richland Operations Office, Richland, Washington.

Ecology, 1989, *Dangerous Waste Regulations*, Washington Administrative Code, WAC 173-303, Washington State Department of Ecology, Olympia, Washington.

NRC, 1974, *Termination of Nuclear Operating Licenses for Nuclear Reactors*, Regulatory Guide 1.86, U.S. Nuclear Regulatory Commission, Washington, D.C.

WHC, 1989a, *Environmental Compliance Manual*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.

WHC, 1989b, *Hazardous Material Packaging and Shipping*, WHC-CM-2-14, Westinghouse Hanford Company, Richland, Washington.

WHC, 1989c, *Nonradioactive Dangerous Waste Disposal Manual*, WHC-CM-5-16, Westinghouse Hanford Company, Richland, Washington.

WHC, 1990a, *Management Policies*, WHC-CM-1-1, Rel. 24, Westinghouse Hanford Company, Richland, Washington.

WHC, 1990b, *Management Requirements and Procedures*, WHC-CM-1-3, Rel. 46, Westinghouse Hanford Company, Richland, Washington.

WHC, 1990c, *Quality Assurance Manual*, WHC-CM-4-2, Releases 22-28, 30, Westinghouse Hanford Company, Richland, Washington.

APPENDIX A

WORK ELEMENTS

APPENDIX A

A.1 WORK ELEMENTS

Following is a list of facilities within the Hanford Surplus Facilities Programs (HSFP) that currently are being maintained and controlled in accordance with specific surveillance and maintenance procedures while awaiting decontamination and decommissioning (D&D).

Accompanying each facility identification title and/or number is a brief description, including type of construction, overall dimensions, estimated decommissioning cost, current plan for fiscal year project work to commence, and related work breakdown structure (WBS) numbers. All project costs are estimates and are in constant fiscal year (FY) 1991 dollars.

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 105-D Reactor Building and Associated Fuel Storage Basin	UB201	Reinforced concrete and concrete block construction approximately 250 ft long by 230 ft wide by 95 ft high.	$23,599,000* *Does not included the 97.5 years of well monitoring estimated at $9,750,00, nor the cost of the Environmental Impact Statement (EIS).	FY 1999
2. 105-DR Reactor Building and Associated Fuel Storage Basin	UB202	Reinforced concrete and concrete block construction approximately 250 ft long by 230 ft wide by 95 ft high.	$23,599,000*	FY 2001
3. 105-H Reactor Building and Associated Fuel Storage Basin	UB203	Reinforced concrete and concrete block construction approximately 250 ft long by 230 ft wide by 95 ft high.	$24,785,000*	FY 1997
4. 105-F Reactor Building and Associated Fuel Storage Basin	UB204	Reinforced concrete and concrete block construction approximately 250 ft long by 230 ft wide by 95 ft high.	$23,599,000*	FY 2004
5. 105-C Reactor Building and Associated fuel Storage Basin	UB205	Reinforced concrete and concrete block construction approximately 250 ft long by 230 ft wide by 95 ft high.	$23,599,000*	FY 2000
6. 105-KE Reactor and Fuel Storage Basin	UB206	Reinforced concrete and concrete block construction approximately 275 ft by 213 ft by 120 ft high.	$23,599,000*	FY 2002

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
7. 105-KW Reactor and Fuel Storage Basin	UB207	Reinforced concrete and concrete block construction approximately 275 ft long by 213 ft wide by 120 ft high.	$23,599,000*	FY 2003
8. 105-B Reactor and Fuel Storage Basin	UB208	Reinforced concrete and concrete block construction approximately 250 ft long by 230 ft wide by 95 ft high.	$23,[illegible]99,000*	FY 2005
9. 105-F & H Basins Fill Removal	UBA03	The removal of approximately 4,500 cubic yards of earth from 105-F and 5,800 cubic yards of earth from 105-H may be removed.	$ 7,780,000	FY 1990
10. 105-D & DR Water Tunnels	UB212	The tunnel housed primary water coolant water piping from the 190 pumphouse to the reactor. These tunnels will be caved in to reduce subidence.	$ 55,000	FY 1997
11. 105-C Water Tunnel	UB215	The tunnel housed primary water coolant water piping from the 190 pumphouse to the reactor. These tunnels will be caved in to reduce subsidence.	$ 116,000	FY 1997
12. 105-KE Water Tunnel	UB216	The tunnel housed primary water coolant water piping from the 190 pumphouse to the reactor. These tunnels will be caved in to reduce subsidence.	$ 116,000	FY 1997

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
13. 105-KW Water Tunnel	UB217	The tunnel housed primary water coolant water piping from the 190 pumphouse to the reactor. These tunnels will be caved in to reduce subsidence.	$ 116,000	FY 1997
14. 105-B Water Tunnel	UB218	The tunnel housed primary water coolant water piping from the 190 pumphouse to the reactor. These tunnels will be caved in to reduce subsidence.	$ 116,000	FY 1997
A.2 100 AREA REACTORS - TOTAL 14				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 116-D Exhaust Air Stack	UAT01	A monolithic, reinforced structure 200 ft above grade, and 20 ft below grade and 16 ft in diameter at the base.	$ 270,000	FY 1993
2. 116-DR Exhaust Air Stack	UAT02	A monolithic, reinforced structure 200 ft above grade, and 20 ft below grade and 16 ft in diameter at the base.	$ 270,000	FY 1993
3. 117-DR Exhaust Air Filter Building	UAA04	Reinforced concrete structure 59 ft long, 39 ft wide, and 35 ft high with only 8 ft of this height above grade.	$ 247,000	FY 1993
4. 119-DR Exhaust Air Sampling Building	UAA03	A small metal structure on a grade-level concrete pad.	$ 15,000	FY 1993
5. 108-F Biology Laboratory Building	UA801	A four-story reinforced-concrete and concrete block structure 200 ft long, 100 ft wide, and 50 ft above grade. The facility has been decontaminated to unrestricted release levels, except for drain lines and area below foundation.	$ 3,296,000	FY 1993
6. 103-D Unirradiated Fuel Element Storage Buiding	UAA01	A one-story reinforced concrete block structure 53 ft long, 26 ft wide, and 14 ft high.	$ 39,000	FY 1993

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
7. 115-B/C Gas Recirculation Building	UAA27	A concrete block and reinforced concrete structure, including tunnels, pit annex, and piping adjoining the 105-B and 105-C Buildings. The building was 113 ft long, 34 ft wide, and 40 ft high, with 20 ft of this height below grade. The tunnel was 1,440 ft long.	$ 768,000	Project was completed in FY 1989.
8. 115-KE Gas Recirculation Building	UAA06	A concrete block and reinforced concrete structure, including tunnels, pit annex, and piping adjoining the 105-KE Building. The building is 113 ft long, 34 ft wide, and 40 ft high with 20 ft of this height below grade. The tunnel is 100 ft long.	$ 1,080,000	FY 1992
9. 115-KW Gas Recirculation Building	UAA07	A concrete block and reinforced concrete structure, including tunnels, pit annex, and piping adjoining the 105-KW Building. The building is 113 ft long, 34 ft wide, and 40 ft high with 20 ft of this height below grade. The tunnel is 100 ft long.	$ 1,103,000	FY 1995
10. 117-C Exhaust Air Filter Building	UAA32	This was a reinforced concrete structure 59 ft long, 39 ft wide, 34 ft high with only 8 ft of this height above grade.	$ 281,000	Project was completed in FY 1989

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
11. 117-KE Exhaust Air Filter Building	UAA08	A reinforced concrete structure 59 ft long, 39 ft wide, and 35 ft high with only 8 ft of this height above grade.	$ 247,000	FY 1992
12. 117-KW Exhaust Air Filter Building	UAA09	A reinforced concrete structure 59 ft long, 39 ft wide, and 35 ft high with only 8 ft of this height above grade.	$ 247,000	FY 1992
13. 116-B Exhaust Air Stack	UAT03	A monolithic, reinforced concrete structure 200 ft above grade, 20 ft below grade, and 16 ft in diameter at the base.	$ 260,000	FY 1992
14. 116-KE Exhaust Air Stack	UAT04	A monolithic, reinforced concrete structure 16 ft below grade, 16 ft in diameter at the base. The height was reduced from 300 ft to 200 ft in 1982.	$ 463,000	FY 1993
15. 116-KW Exhaust Air Stack	UAT05	A monolithic, reinforced concrete structure 16 ft below grade, 16 ft in diameter at the base. the height was reduced from 300 ft to 200 ft in 1982.	$ 463,000	FY 1993
16. 104-B-1 Tritium Vault	UA901	The vault is a 130 square foot concrete structure.	$ 27,000	FY 1993
17. 104-B-2 Tritium Laboratory	UA902	The laboratory is a reinforced concrete structure about 325 square feet.	$ 27,000	FY 1993

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
18. 119-KE Exhaust Air Sampling Building	UAA05	The building is a small metal structure on a grade-level concrete pad.	$ 15,000	FY 1993
19. 119-KW Exhaust Air Sampling Building	UAA02	The building is a small metal structure on a grade-level concrete pad.	$ 15,000	FY 1993
20. 1706-KE/KEL/KER Test Facility	UAH01	The building was a multipurpose test facility, constructed of concrete block and reinforced concrete, and is approximately 13,500 square feet.	$ 3,663,000	FY 1993
21. 103-B Unirradiated Fuel Storage	UA010	A one-story reinforced concrete and concrete block structure 53 ft long, 26 ft wide, and 14 ft high.	$ 37,000	FY 1992
22. 111-B Decontamination Station	UA903	Remaining is a reinforced below-grade concrete structure. The above grade wooden structure was demolished in 1984.	$ 180,000	FY 1992
A.3 100 AREA ANCILLARIES - TOTAL 22				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
107-B Retention Basin		A 467 ft long by 230 ft wide by 15 ft high reservoir used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM Included to provide continuity.	
107-C Retention Basin		Two cylindrical carbon steel open top tanks sitting on concrete pads Each tank is 16 ft high, 330 ft in diameter used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM Included to provide continuity.	
107-KE Retention Basin		Three cylindrical open-top tanks sitting on concrete pads. Each tank is 29 ft high and 250 ft in diameter used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM Included to provide continuity.	
107-KW Retention Basin		Three cylindrical open-top tanks sitting on concrete pads. Each tank is 29 ft high and 250 ft in diameter used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM. Included to provide continuity.	
183-H Solar Evaporation Basins		Originally sedimentation basins for coolant water supply to H Reactor. Converted in early 1970 as solar ponds for spent chemical waste from 300 Area Fuels Manufacturing Plant.	TRANSFERRED TO RA PROGRAM. Included to provide continuity.	
183-H Groundwater Monitoring		As part of the closure activities, additional groundwater monitoring wells were installed in 1986 and 1987.	TRANSFERRED TO RA PROGRAM. Included to provide continuity.	

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
107-F Retention Basin		A 467 ft long by 230 ft wide by 15 ft high reservoir used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM. Included to provide continuity.	
107-H Retention Basin		Retangular concrete reservoirs 600 ft long, 480 ft wide and 20 ft deep used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM. Included to provide continuity.	
107-D Retention Basin		A 467 ft long by 230 ft wide by 15 ft high reservoir used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM. Included to provide continuity.	
107-DR Retention Basin		Rectangular concrete reservoirs used to hold up effluent coolant water.	TRANSFERRED TO RA PROGRAM. Included to provide continuity.	
1. 1904-B1/B2 Effluent Water Outfall Structure	UCA05	The outfall structures are reinforced, compartmentalized concrete water boxes located on the bank of the Columbia River. The associated spillways are constructed of reinforced concrete also. The structures are 27 ft long, 14 ft wide, and 24 ft deep.	$ 235,000	FY 2010
2. 1904-C Effluent Water Outfall Structure	UCA07	A reinforced, compartmentalized concrete water box located on the bank of the Columbia River. The associated spillway is constructed of reinforced concrete. Dimensions are 27 ft long, 14 ft wide, and 24 ft dep.	$ 235,000	FY 2010

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
3. 1908-K Effluent Water Outfall Structure	UCA06	Constructed of reinforced concrete (as is the spillway). This facility is currently in use to handle discharge water because of the storage of N Area irradiated fuel elements in the KE & KW fuel storage basins. The structure is 30 ft long, 40 ft wide, 20 ft above grade, and 20 ft below grade.	$ 457,000	FY 2010
4. 100-B/C Effluent Lines	UC403	There are approximately 4.25 miles of 5-ft to 6-ft diameter effluent piping remaining at 100-B Area.	$ 541,000	FY 1992
5. 100-KE/KW Effluent Lines	UC404	There are approximately 4.16 miles of various diameter-size effluent piping (12 in. to 72 in.) remaining at 100-K Area.	$ 298,000	FY 1992
6. 100-B/C, KE/KW Effluent Discharge Water River Lines	UC405	There remains approximately 3,300 ft of 42-in. to 84-in. diameter steel effluent piping underwater in the Columbia River.	$ 1,099,000	FY 1992
7. 1904-F Effluent Water Outfall Structure	UCA01	A reinforced, compartmentalized concrete water box located on the bank of the Columbia River. The structure size is 27 ft long, 14 ft wide, and 24 ft deep. The associated spillway is also constructed of reinforced concrete.	$ 235,000	FY 2011

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
8. 1904-H Effluent Water Outfall Structure	UCA02	The outfall structure is constructed of reinforced concrete as is the spillway. The structure is 27 ft long, 14 ft wide, and 24 ft deep.	$ 235,000	FY 2011
9. 1904-D Effluent Water Outfall Structure	UCA03	The outfall structure is a reinforced, compartmentalized concrete water box located on the bank of the Columbia River. The structure is 27 ft long, 14 ft wide, and 25 ft deep. The spillway is also constructed of reinforced concrete.	$ 235,000	FY 2011
10. 1904-DR Effluent Water Outfall Structure	UCA04	The outfall structure is a reinforced, compartmentalized concrete water box located on the bank of the Columbia River. The structure is 27 ft long, 14 ft wide, and 25 ft deep. The spillway is also constructed of reinforced concrete.	$ 235,000	FY 2011
11. 100-F, H, D & DR River Lines	UC401	Approximately 5,000 ft of 42-in. to 84-in. diameter steel effluent piping remains underwater in the Columbia River.	$ 551,000	FY 1997
12. 100-F, H, D & DR Effluent Lines	UC402	Approximately 4.57 miles of effluent piping from 1 ft to 6 ft in diameter remains at 100-D & H. At 100-F all above-ground effluent pipe has been removed. About .5 mile remains to be decommissioned.	$315,000	FY 2010
A.4 100 AREA EFFLUENTS - TOTAL 12				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 201-C Process Building	UE503	A concrete and transite structure 104 ft long, 80 ft wide, 30 ft above grade, and 30 ft below grade. Building was demolished in FY 1989, however, several support structures and tanks remain to be decommissioned before the project is complete.	$21,883,000 Includes D&D of all support buildings.	FY 1985
2. 215-C Gas Preparation Structure	UE503	A reinforced concrete building 41 ft long, 21 ft wide, and 13 ft above grade. The facility provides instrument air to 271-C.	Included in cost of 201-C Project	Completed August 1988
3. 291-C Fan House	UE503	A wooden-framed asbestos-shingled building 36 ft long, 24 ft wide, and 11 ft above grade.	Included in cost of 201-C Project	Completed January 1988
4. 2707-C Storage and Change House	UE503	A wooden-framed asbestos-shingled building 60 ft long, 24 ft wide, and 10 ft above grade.	Included in cost of 201-C Project	Included in 201-C Proj.
5. 271-C Makeup Control Room	UE503	A structural steel-and-metal sided building 56 ft long, 41 ft wide, and 35 ft above grade.	Included in cost of 201-C Project	Included in 201-C Proj.
6. 241-CX-70 Tank	UE503	A buried, stainless steel tank 15 ft tall, 20 ft in diameter, and 28 ft below grade.	Included in cost of 201-C Project	Included in 201-C Proj.
7. 241-CX-71 Tank	UE503	A buried, stainless steel tank 9 ft tall, 9 ft in diameter, and an undetermined distance below grade.	Included in cost of 201-C Project	Included in 201-C Proj.

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
8. 241-CX-72 Tank and Vault	UE503	The structure is 20 ft long, 7 ft wide, and 12 ft below grade.	Included in cost of 201-C Project	Included in 201-C Proj.
9. 291-C-1 Stack	UE503	A reinforced concrete outer stack and acid-resistant brick inner stack 200 ft in diameter at base, 200 ft above grade, and 5 ft below grade. Demolition completed in FY 1989.	Included in cost of 201-C Project	Completed August 1988
10. 296-C-2 Stack	UE503	A sheet metal stack 2 ft by 2 ft square, 30 ft above grade.	Included in cost of 201-C Project	Included in 201-C Proj.
11. 224-B Plutonium Concentration Facility	UE505	A reinforced concrete and concrete block structure 197 ft long, 60 ft wide, 53 ft above grade, and 20 ft below grade. Some previous D&D has been accomplished.	$11,070,000	FY 1992
12. 212-N Storage Building	UEA10	A steel truss and concrete block structure 90 ft long, 74 ft wide, 30 ft above grade, and 37 ft below grade.	$ 1,036,000	FY 2009
13. 212-P Storage Building	UEA11	A steel truss and concrete block structure 90 ft long, 74 ft wide, 30 ft above grade, and 37 ft below grade.	$ 1,036,000	FY 2009
14. 212-R Storage Building	UEA12	A steel truss and concrete block structure 90 ft long, 74 ft wide, 30 ft above grade, and 37 ft below grade.	$ 1,036,000	FY 2009

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
15. 233-S Plutonium Concentration Facility	UE502	A concrete and steel structure with metal siding, 86 ft long, 43 ft wide, and 34 ft above grade. Some previous D&D has been accomplished.	$13,359,000	FY 1992
16. 233-SA Exhaust Air Filter Building	UE502	A concrete structure 24 ft long, 15 ft wide, and 9 ft above grade.	Included in cost of 233-S Project	Included in 233-S Proj.
17. 296-S-7 Stack	UE502	Two sheet metal stacks, each 24 inches in diameter and 25 ft above grade.	Included in cost of 233-S Project	Included in 233-S Proj.
18. 241-SX-401 Condenser Loadout Facility	UE401	A reinforced concrete structure 36 ft long, 24 ft wide, 18 ft above grade, and 7 ft below grade.	$ 1,250,000	FY 2017
19. 241-SX-402 Condenser Loadout Facility	UE402	A reinforced, concrete structure 36 ft long, 24 ft wide, 18 ft above grade, and 7 ft below grade.	$ 1,250,000	FY 2017
20. 202-S Canyon Building (REDOX)	UE501	A thick, reinforced concrete structure 468 ft long, 161 ft wide, a maximum of 120 ft above grade, and approximately 25 ft below grade.	$134,860,000	FY 2007
21. 291-S Fan House and Filter	UE501	A concrete structure 20 ft long, 14 ft wide, and approximately 10 ft above grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
22. 292-S Jet Pit House	UE501	A reinforced concrete structure approximately 27 ft long, 14 ft wide, 12 ft above grade, and 34 ft below grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
23. 293-S Offgas Treatment Facility	UE501	A reinforced concrete structure 42 ft long, 25 ft wide, 30 ft above grade, and 16 ft below grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
24. 2711-S Stack Monitoring Building	UE501	A wooden structure 14 ft long, 13 ft wide, and 9 ft above grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
25. 2718-S Sand Filter Sampler	UE501	A wooden structure 14 ft long, 13 ft wide, and 9 ft above grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
26. 291-S-1 Stack	UE501	A reinforced concrete stack, lined with acid-resistant brick, 14 ft in diameter at base, 200 ft above grade, and 15 ft below grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
27. 296-S-1 Stack	UE501	A sheet metal stack 14 inches wide and 70 ft above grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
28. 296-S-2 Stack	UE501	A sheet metal stack 14 inches wide and 50 ft above grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
29. 296-S-4 Stack	UE501	A sheet metal stack 18 inches wide, and 48 ft above grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
30. 296-S-6 Stack	UE501	A sheet metal stack 30 inches in diameter and 75 ft above grade.	Included in 202-S (REDOX) Project	Included in 202-S (REDOX) Project
31. 232-Z Waste Incinerator Facility	UEA04	A concrete block structure 57 ft long, 37 ft wide, and 19 ft above grade.	$ 507,000	FY 1999
32. 221-U Canyon Building (U Plant)	UEA02	A concrete structure 810 ft long, 66 ft wide, 51 ft above grade, and 26 ft below grade.	$120,720,000	FY 2008
33. 276-U Solvent Handling Facility	UEA02	A concrete basin 66 ft long, 54 ft wide, 35 ft above grade, and 7 ft below grade. Basin contains three tanks ranging in capacity from 2,500 gallons to 29,000 gallons.	Included in 221-U Project	Included in 221-U Project
34. 271-U Office Building	UEA02	A concrete frame and concrete block structure 160 ft long, 48 ft wide, 56 ft above grade, and 11 ft below grade.	Included in 221-U Project	Included in 221-U Project
35. 291-U Fan House and Filter Facility	UEA02	A reinforced, thick concrete structure 19 ft long, 18 ft wide, and 14 ft above grade.	Included in 221-U Project	Included in 221-U Project

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
36. 296-U-1 Stack	UEA02	A reinforced concrete stack with acid-resistant brick liner 14 ft in diameter, 200 ft above grade, and 6 ft below grade.	Included in 221-U Project	Included in 221-U Project
37. 296-U-6 Stack	UEA02	A carbon steel stack 18 inches in diameter, 50 ft above grade, and 3 ft below grade.	Included in 221-U Project	Included in 221-U Project
38. 296-U-10 Stack	UEA02	A carbon steel stack 24 inches in diameter and 10 ft above grade. Located on roof of 271-U Building.	Included in 221-U Project	Included in 221-U Project
39. 241-C-801 Cesium Loadout Facility	UEA03	A reinforced concrete and metal building 32 ft long, 26 ft wide, 12 ft above grade, and 11 ft below grade.	$ 565,000	FY 2009
40. 276-S Solvent Handling Facility	UEA01	A reinforced concrete and steel structure with transite siding 58 ft long, 43 ft wide, 24 ft above grade, and 13 ft below.	$ 798,000	FY 1999
41. 296-S-12 Stack	UEA01	Two sheet metal stacks, each 21 inches square, and about 11 ft long.	Included in 276-S Project	Included in 276-S Project
42. 276-S-141 Hexone Storage Tank	UEA01	A buried steel tank 23 ft tall, 12 ft in diameter, and 14 ft below grade.	Included in 276-S Project	Included in 276-S Project
43. 276-S-142 Hexone Storage Tank	UEA01	A buried steel tank 23 ft tall, 12 ft in diameter, and 14 ft below grade.	Included in 276-S Project	Included in 276-S Project

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
44. 222-T Office Building	UE801	A single-story building with concrete block structure with a slab on grade floor. The facility was originally designed as a process analysis laboratory in support of T-Plant. A small portion is being used for storage. The dimensions are 200 ft long, 60 ft wide, and 12 ft high.	$ 1,775,000	FY 2008
45. 205-A Silica Gel	UEA06	A metal-framed transite building 12 ft long, 10 ft wide, and 9 ft above grade.	$ 371,000	FY 2008
46. 241-A-431 Tank Farm Ventilation Building	UEA07	A reinforced concrete building approximately 22 ft long, 16 ft wide, 9 ft above grade, and 14 ft below grade.	$ 718,000	FY 2008
47. 242-B Facility	UEH01	A 3,000 square foot reinforced concrete structure.	$ 1,274,000	FY 2010
48. 222-U Office Building	UE802	A single-story building with concrete block structure and a slab on grade floor, 200 ft long, 60 ft wide, and 12 ft high. A small portion is being used for storage. Originally designed as a process analysis laboratory in support of U-Plant. Water, steam, and power has been shut off and the building winterized. Interior wall finishes are deteriorating, and the HVAC requires repair.	$ 1,775,000	FY 2008

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
49. 276-C Solvent Handling Facility	UEA09	A fireproof structure with steel framework, insulated metal siding, and concrete floors and roof, 18 ft by 49 ft. East half contains four floor levels extending 46 ft above grade. West half rises 24 ft above grade and has 20 ft of headroom. A 6 ft wide loading dock runs the full length of the north wall. At the west end of the south side, a 4 ft by 12 ft lean-to shelter is provided for nonexplosion-proof relays and line switches. Used as a riggers loft.	$ 197,000	FY 1999
50. 216-Z-9 Mining Facility	UEA08	The 216-Z-9 enclosed trench is an underground excavation with an active floor area of 30 ft by 60 ft at a mean sea level of 639 ft, 21 ft beneath the top of the concrete slab cover. The excavation is covered by a 9-12 inch thick reinforced concrete slab, 90 ft wide and 120 ft long at ground level and has equally sloping sides which terminate at the trench floor. The concrete cover is supported by footings around the perimeter and by six concrete columns located on the corners of the floor area and midway on each of the 60 ft sides.	$ 1,985,000	FY 2011

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
51. MO-326 Personnel Decontamination Trailer	UEK01	A single-story trailer with flat bright aluminum sides with change rooms on each end separated by one stall shower. There are swamp coolers on the roof and electric wall heaters in each change room. The drains for the shower and sinks go to a stainless steel 65 gallon holding tank with special HEPA filtered vent. There is an electric level indicator on the tank. Dimensions are 10 ft wide and 30 ft long.	$ 41,000	FY 1997
A.6 200 AREA MAJOR PROCESSING/SUPPORT BUILDINGS - TOTAL 51				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 207-S Retention Basin	UK501	A reinforced concrete structure 14 ft long, 11 ft wide, and approximately 1 ft above grade, and 9 ft below grade.	$ 1,614,000	FY 2009

A.6 207-S RETENTION BASIN - TOTAL 1

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 216-A-524 Control Structure	UHU01	A reinforced concrete structure 16 ft long, 8 ft wide, 1 ft above grade, and 10 ft below grade.	Estimated to cost $ 1,760,000 for all control structures and weir boxes.	FY 2006
2. 216-S-172 Weir and Control Structure	UHU02	A thick, reinforced concrete structure 14 ft long, 11 ft wide, approximately 1 ft above grade, and 9 ft below grade.	Estimated to cost $ 1,760,000 for all control structures and weir boxes.	FY 2006
3. 2904-S-160 Control Structure	UHU03	A thick, reinforced concrete structure 9 ft long, 7 ft wide, approximately 1 ft above grade, and 9 ft below grade.	Estimated to cost $ 1,760,000 for all control structures and weir boxes.	FY 2006
4. 2904-S-170 Weir Box	UHU04	A reinforced concrete structure 16 ft long, 7 ft wide, 1 ft above grade, and 10 ft below grade.	Estimated to cost $ 1,760,000 for all control structures and weir boxes.	FY 2006
5. 2904-S-171 Weir Box	UHU05	A thick, reinforced concrete structure, 13 ft long, 12 ft wide, and 10 ft below grade.	Estimated to cost $ 1,760,000 for all control structures and weir boxes.	FY 2006
6. 2904-SA Sampler Building	UHU06	A wooden structure 8 ft long, 8 ft wide, 7 ft above grade, and 4 ft below.	Estimated to cost $ 1,760,000 for all control structures and weir boxes.	FY 2006
A.7 200 AREA CONTROL STRUCTURES AND WEIR BOXES - TOTAL 6				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 241-B-361 Settling Tank	UNU01	A buried concrete tank 20 ft in diameter and 5 ft below grade.	Estimated to cost $295,000 for all buried tanks.	FY 2009
2. 270-E Neutralization Tank	UNU02	A buried stainless steel tank 9 ft in diameter and 20 ft below grade.	Estimated to cost $295,000 for all buried tanks.	FY 2009
3. 241-T-361 Settling Tank	UNU03	A buried concrete tank 20 ft in diameter and 5 ft below grade.	Estimated to cost $295,000 for all buried tanks.	FY 2009
4. 241-U-361 Settling Tank	UNU04	A buried concrete tank 20 ft in diameter and 5 ft below grade.	Estimated to cost $295,000 for all buried tanks.	FY 2009
5. 241-Z-361 Settling Tank	UNU05	A buried concrete structure 28 ft tall, 15 ft wide, and 21 ft below grade.	Estimated to cost $295,000 for all	FY 2009
A.8 200 AREA DIRECT-BURIED TANKS - TOTAL 5				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 321 Hydromechanical Seismic Laboratory	UPA01	One-story concrete and bolted steel framework with fiberglass insulation in the ceiling, a basement and canyon area, and B, C, and D Additions. The roof is concrete with a 20-year built-up tar and gravel finish. Floors are concrete, and exterior walls are concrete and concrete block. Heating is by electric space heaters and steam coils in fresh air systems. Cooling is by evaporative units and a 3-ton refrigerated air conditioner in the control room. Sprinklers are provided except in the central region of the canyon area.	$ 1,764,000	FY 1999
2. 308 Fuels Development Laboratory	UPC01	A 94,294 square foot two-story laboratory with a high bay and a one-story rectangular office wing. The laboratory has exterior walls of reinforced concrete and concrete block. All floors are reinfored concrete inlaid with painted/vinyl tile. The laboratory rooms are divided into zones for contamination control.	$ 2,185,000	FY 1999

A.9 300 AREA CONTAMINATED FACILITIES. (sheet 2 of 2)

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
3. 304-C Concretion Facility and Change Room	UP901	This structure has corrugated metal siding and roof with concrete foundation and floor. It is 42 ft long, 60 ft wide, and	$ 180,000	FY 1999
A.9 300 AREA CONTAMINATED FACILITIES - TOTAL 3				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 1701-FA Gate House	UVP02	A single-story poured-concrete building with concrete floors and flat concrete roof with tar and gravel surface. This building was equipped with sanitary services and lunch room. The structure is 12 ft high, 20 ft long, and 32 ft wide.	$ 13,000	FY 1996
2. 1720-HA Arsenal	UV102	A concrete structure 6 ft long, 8 ft wide and 8 ft high used to house explosives when they are needed at the 100 Areas for decommissioning work. The structure was used during the early days at Hanford as a Patrol arsenal vault.	$ 5,000	FY 1996
3. 1713-H Warehouse	UVA04	An "L" shaped, single-story, steel frame structure with corrugated transite siding, 228 ft long, 62 ft wide, and 20 ft high. The foundation and floor are concrete and roof is built-up tar and gravel surfacing over flat-prefabricated concrete tile. There is a four-foot high concrete unloading platform on one side of the building. There is approximately 13,000 square feet of space in the building. It has been partitioned into three areas for storage space.	$ 404,000	FY 2009

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
4. 1702-DR Area Badge House	UVP04	A one-story wooden frame structure on a concrete floor and foundation 20 ft long, 20 ft wide, and 12 ft high. It has asbestos shake siding, gable wooden roof covered with roll roofing.	$ 7,000	FY 1996
5. 1713-KER Warehouse	UVA03	An 800 square foot sheet metal 'butler' building with concrete floor and footing. Currently used for miscellaneous equipment and material storage.	$ 18,000	FY 2009
6. 167-K Crosstie Tunnel Building	UV405	A concrete and steel structure 49 ft long, 51 ft wide and 14 ft high that is the midway entry and ventilation shaft for the KE/KW crosstie tunnel. The walls of the structure contain large louvered openings.	$ 5,000	FY 2009
7. 166-AKE Oil Storage Facility	UVA05	A 'butler' building 17 ft long, 17 ft wide, and 10 ft high, used for oil and grease storage.	$ 6,000	FY 2009
8. 1702-KE Badge Badge	UVP05	A one-story wooden frame structure on a concrete floor and foundation 20 ft long, 20 ft wide, and 12 ft high with asbestos shake siding, and flat wooden roof covered with roll roofing.	$ 6,000	FY 2009

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
9. 185-B Water Treatment Plant	UVA02	Steel and concrete block structure 307 ft long, by 48 ft wide, by 60 ft high, reinforced concrete foundation, precast concrete slab roof with built-up tar and gravel surfacing. Adjoins the 190-B Building and shares a common wall. The original mounting pedestals for the deaerators have been removed so that a large expanse of flat area exists. Services to the building are limited. At one time the building contained a water laboratory, instrument shop, and engineering test facility. When the deareating was discontinued, the building served as a storage and maintenance work area.	$ 248,000	FY 1993
10. 1702-KW Badge House	UVP06	A one-story wooden frame structure 20 ft long, 20 ft wide, and 12 ft high on a concrete floor and foundation with asbestos shake siding, and a flat wooden roof covered with roll roofing.	$ 9,000	FY 2008
11. 1714-KW Warehouse	UVA06	An 800 sq ft sheet metal 'butler' building with concrete floor and footing used for storage.	$ 16,000	FY 2008
12. 1714-C Solvent Storage	UVA01	A steel frame, transite structure on a concrete foundation, 22 ft long, 7 ft wide, 10 ft high behind 105-C used as an oil house.	$ 5,000	FY 1996

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
13. 182-K Emergency Water Reservoir and Pump House	UV404	A steel-framed structure with concrete foundation and floors, transite walls, and roof of insulated steel decking with built up tar and gravel surfacing, 51 ft long, 51 ft wide and 16 ft high. Hosued threee 1,500 hp diesel engines to drive pumps and associated equipment for emergency reactor cooling. There are two underground storage tanks which provided diesel oil for the engines. The pump discharged into a common header which connected to the primary cooling system supply line in the 105 buildings.	$ 75,000	FY 2009
14. 110-KE Gas Gas Storage Facility	UV406	An outdoor gas unloading and storage area consisting of a number of 24-inch diameter by 80 feet long, high-pressure helium tanks, and four large diameter tanks used for carbon dioxide. The gas storage facility was served by a railroad spur and had equipment for transferring gas at high pressure. The 110 facilities were the receiving and storage area at the 115 buildings for the reactor graphite cooling media gas.	$ 304,000	FY 2010

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
15. 110-KW Gas Storage Facility	UV407	An outdoor gas storage area consisting of a number of 24-inch diameter by 80 ft long, high pressure helium tanks, and four large diameter, low-pressure tanks. The gas storage facility was served by a railroad spur and had equipment for transferring gas at high pressure.	$ 304,000	FY 2010
16. 1702-C Area Badge House	UVP03	A one-story wooden frame structure on a concrete floor and foundation 10 ft long, 10 ft wide, and 10 ft high with asbestos shake siding, and a flat wooden roof covered with roll roofing.	$ 5,000	FY 1996
17. 190-B Main Pumphouse	UV402	A one-story reinforced concrete structure with concrete foundation 500 ft long, 200 ft wide, and 30 ft high with steel frame, concrete block super-structure and precast concrete roof covered with tar and and gravel surfacing.	$ 1,636,000	FY 1993
18. 1701-BA Exclusion Area Badge House	UVP01	A one-story concrete block structure on a concrete floor and foundation. It has a gable wooden roof, covered with roll roofing. It houses a portal monitor for personnel to use after entering facilities inside the exclusion area, and before leaving the area. 20 ft long, 20 ft wide, 12 ft high	$ 9,000	FY 2009

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
19. 183-C Filter Plant	UV401	Housed the water treament and filtering facilities and consisted of a headhouse and chemical building (sold to and removed by a salvage contractor), flocculation and sedimentation basins (removed on Site Cleanup Program) and clearwell and storage with pumproom. The clearwells were four structural steel tanks (sold to and removed by a salvage contractor). The filter building is a reinforced concrete and concrete block building 13,800 square feet, that housed the filter beds and controls. The filters were gravity flow with Wheeler bottoms. Built in two halves with a gullet between, the fitler consisted of graded gravel, sand and graded anthracite coal. Backwashing was accomplished using purified water from the clearwells and was discharged through the gullet to a sewer. The pumproom was a reinforced concrete structure largely below grade. Equipment included transfer pumps for primary reactor cooling water, backwash pumps, high tank pumps, and pumps for power hosue water, fire, sanitary and emergency fitler water.	$ 181,000	FY 1996

A.10 HANFORD NONCONTAMINATED FACILITIES. (sheet 7 of 7)

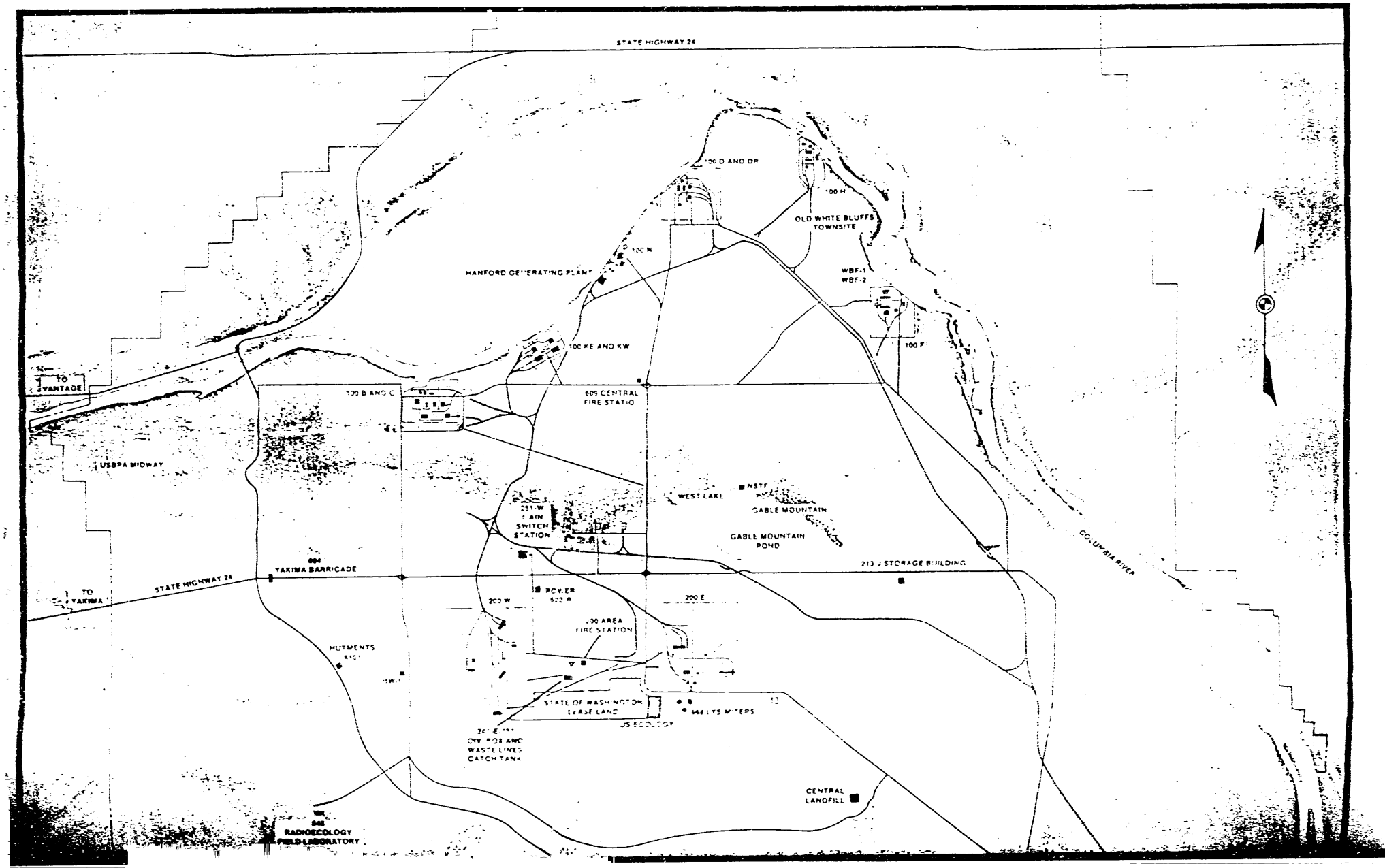
PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
20. 165-KW Power Control Building	UV403	A single-story concrete structure 240 ft by 110 ft by 15 ft, with reinforced concrete floors, walls, and poured roof with built-up asphalt and gravel surfacing. The building consists of three parts: (1) the pump room and valve pit with steel grating floor providing work area; (2) the electrical area consisting of two concrete floors; and (3) the oil-fired steam plant and control room.	$ 542,000	FY 2008
A.10 HANFORD NON-CONTAMINATED FACILITIES - TOTAL 20				

PROJECT	WBS	GENERAL DESCRIPTION	ESTIMATED DECOMMISSIONING COST	COMMENCE D&D
1. 244-UR Vault	UJU01	Four stainless steel tanks of various capacity ranging from 8,000 gallons to 50,000 gallons. These tanks lay in an area 90 ft long, 26 ft wide, about 2 ft above grade, and 46 ft below.	Decommissioning of storage vaults is estimated to cost $4,505,000.	FY 2006
2. 241-WR Vault	UJU02	Nine steel 50,000 gallon tanks inside a reinforced concrete structure 125 ft long, 63 ft wide 8 ft above grade, and 58 ft below grade.	Decommissioning of storage vaults is estimated to cost $4,505,000.	FY 2006
A.11 200 AREA STORAGE VAULTS - TOTAL 2				

APPENDIX B

AREA SITE MAPS

NOTE: The 600 Area map is included to show the location of 212-N, 212-P, and 212-R Storage Buildings, which are the only facilities in the Hanford Surplus Facilities Program (HSFP) Plan that are not inside or in close proximity to the 100 and 200 Area boundaries.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100 D AND DR
100 H
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100 N
HANFORD GENERATING PLANT
WBF-1
WBF-2
100 F
100 KE AND KW
TO VANTAGE
100 B AND C
609 CENTRAL FIRE STATIO
USBPA MIDWAY
WEST LAKE
NSTF
GABLE MOUNTAIN
GABLE MOUNTAIN POND
291-W MAIN SWITCH STATION
604 YAKIMA BARRICADE
213 J STORAGE BUILDING
COLUMBIA RIVER
TO YAKIMA
STATE HIGHWAY 24
POWER 622 R
200 W
200 E
100 AREA FIRE STATION
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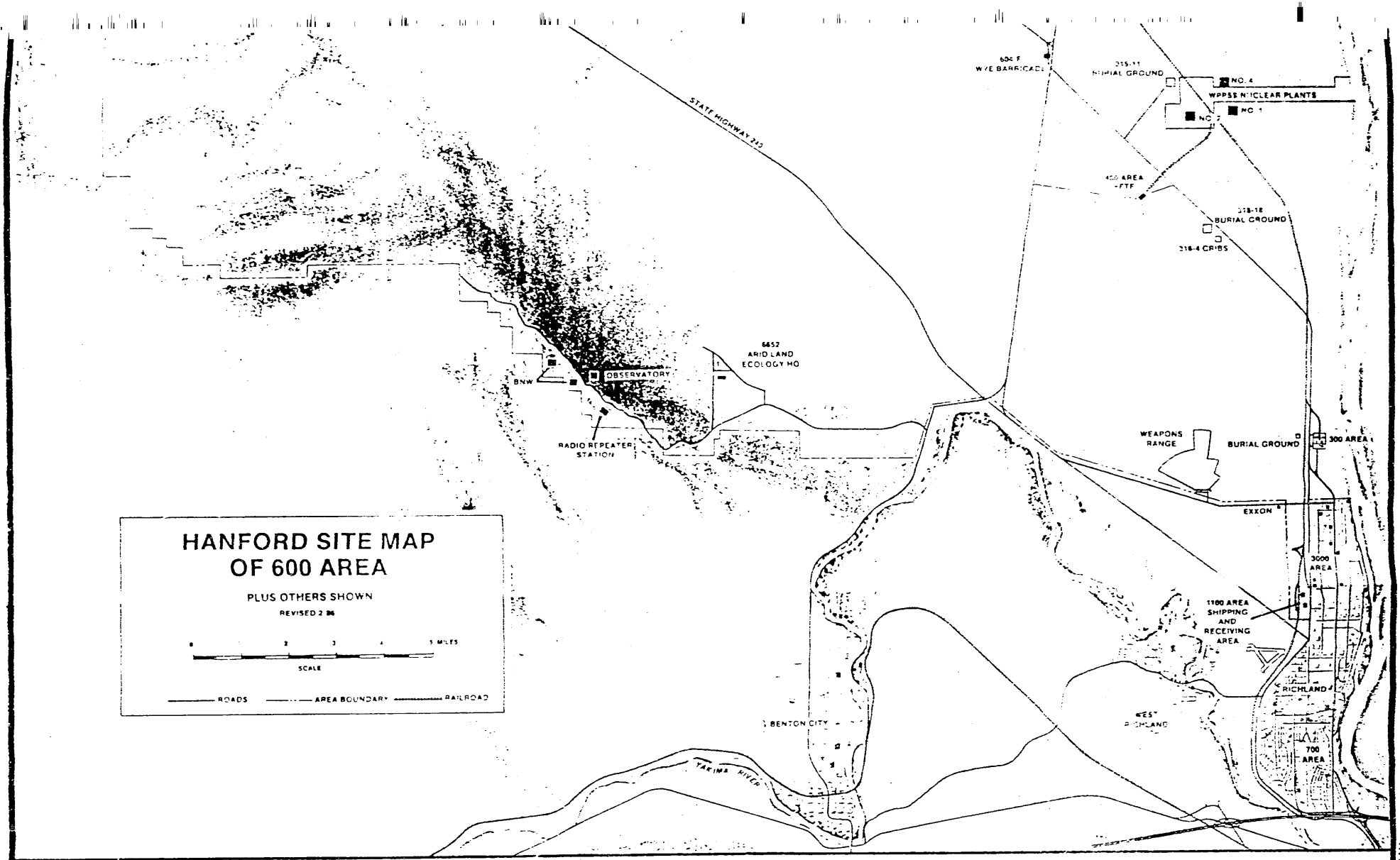

B-3/B-4

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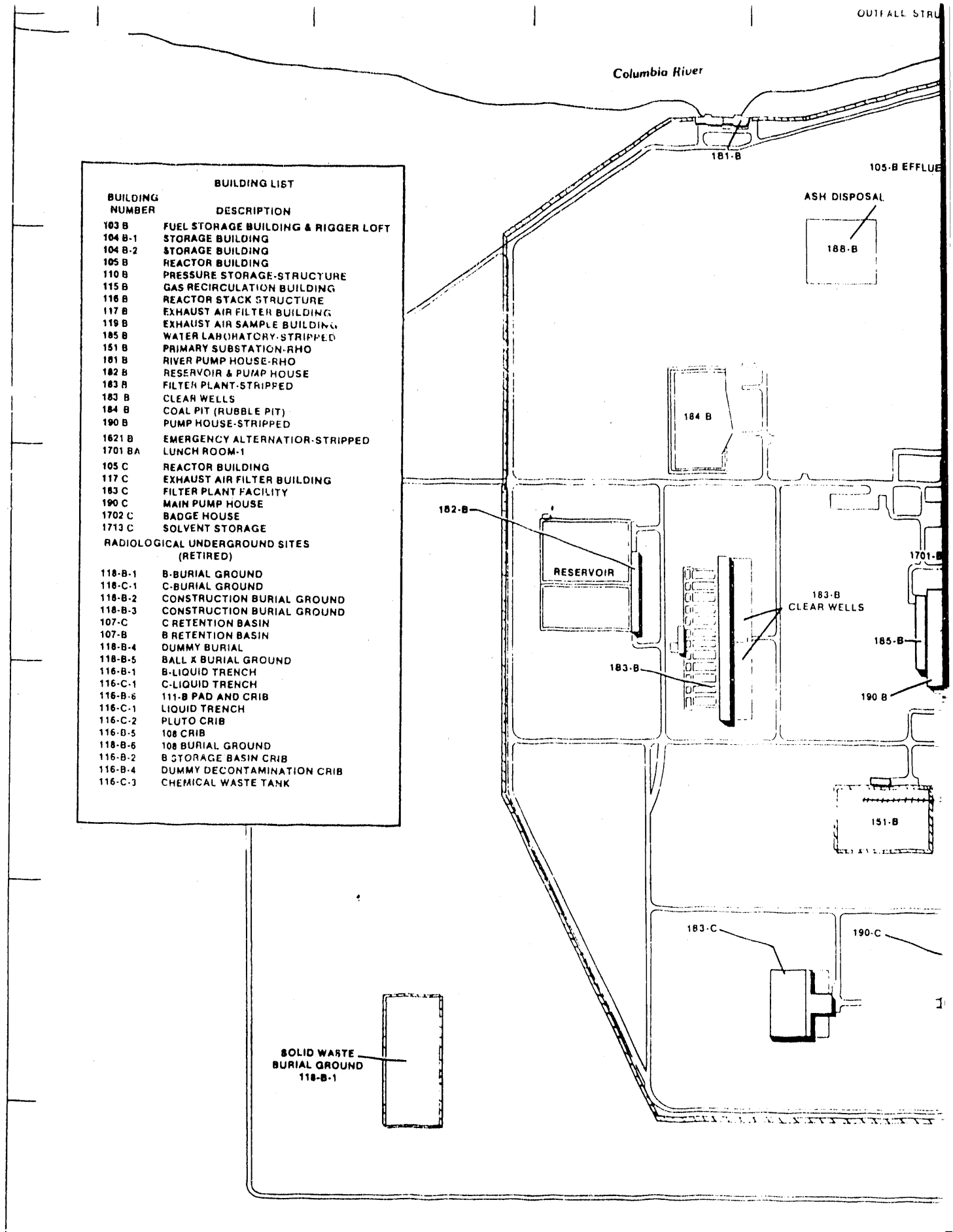
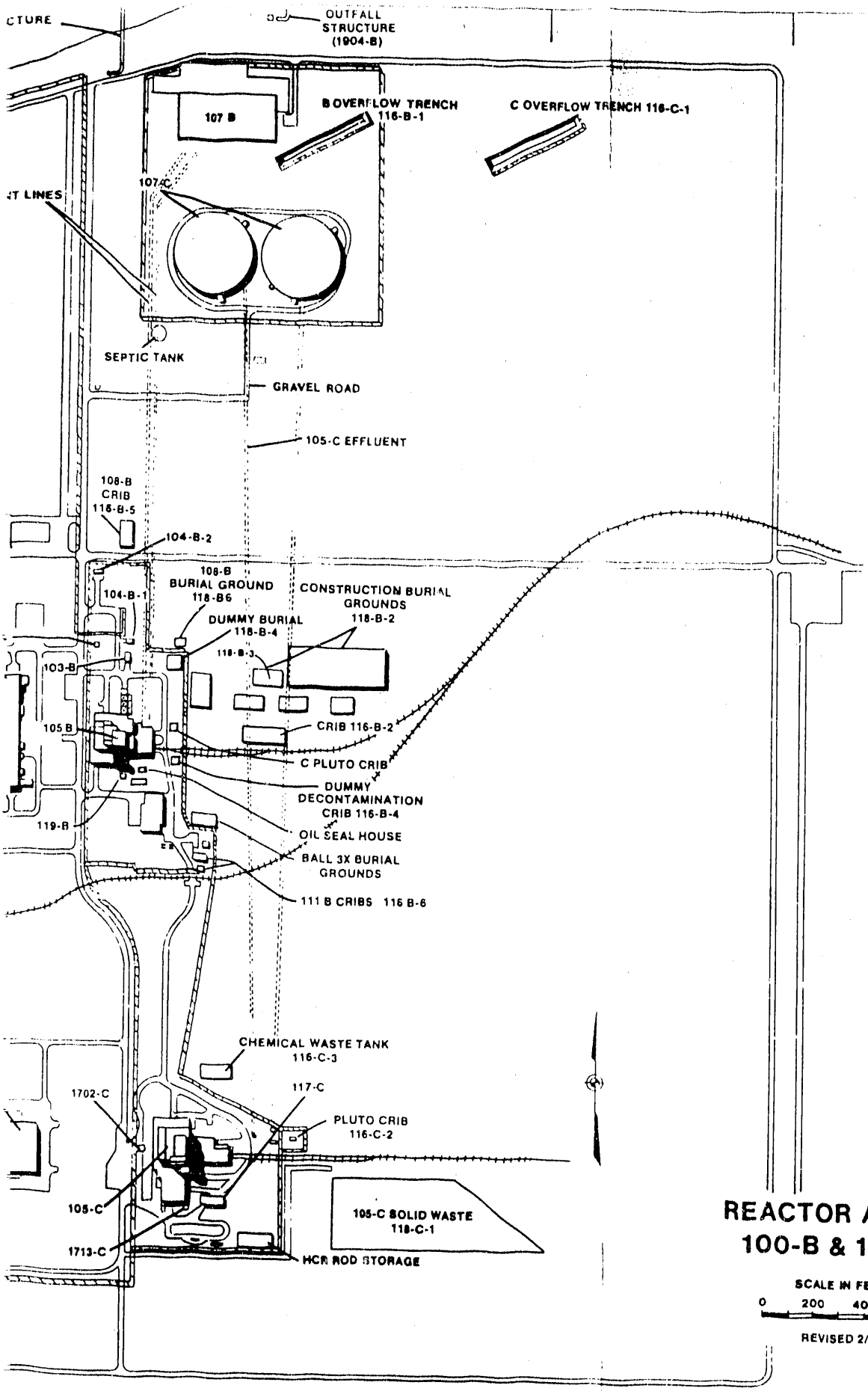


BUILDING LIST

BUILDING NUMBER	DESCRIPTION
103 B	FUEL STORAGE BUILDING & RIGGER LOFT
104 B-1	STORAGE BUILDING
104 B-2	STORAGE BUILDING
105 B	REACTOR BUILDING
110 B	PRESSURE STORAGE-STRUCTURE
115 B	GAS RECIRCULATION BUILDING
116 B	REACTOR STACK STRUCTURE
117 B	EXHAUST AIR FILTER BUILDING
119 B	EXHAUST AIR SAMPLE BUILDING
185 B	WATER LABORATORY-STRIPPED
151 B	PRIMARY SUBSTATION-RHO
181 B	RIVER PUMP HOUSE-RHO
182 B	RESERVOIR & PUMP HOUSE
183 B	FILTER PLANT-STRIPPED
183 B	CLEAR WELLS
184 B	COAL PIT (RUBBLE PIT)
190 B	PUMP HOUSE-STRIPPED
1621 B	EMERGENCY ALTERNATIOR-STRIPPED
1701 BA	LUNCH ROOM-1
105 C	REACTOR BUILDING
117 C	EXHAUST AIR FILTER BUILDING
183 C	FILTER PLANT FACILITY
190 C	MAIN PUMP HOUSE
1702 C	BADGE HOUSE
1713 C	SOLVENT STORAGE

RADIOLOGICAL UNDERGROUND SITES (RETIRED)

118-B-1	B-BURIAL GROUND
118-C-1	C-BURIAL GROUND
118-B-2	CONSTRUCTION BURIAL GROUND
118-B-3	CONSTRUCTION BURIAL GROUND
107-C	C RETENTION BASIN
107-B	B RETENTION BASIN
118-B-4	DUMMY BURIAL
118-B-5	BALL X BURIAL GROUND
116-B-1	B-LIQUID TRENCH
116-C-1	C-LIQUID TRENCH
116-B-6	111-B PAD AND CRIB
116-C-1	LIQUID TRENCH
116-C-2	PLUTO CRIB
116-B-5	108 CRIB
118-B-6	108 BURIAL GROUND
116-B-2	B STORAGE BASIN CRIB
116-B-4	DUMMY DECONTAMINATION CRIB
116-C-3	CHEMICAL WASTE TANK



REACTOR AREAS 100-B & 100-C

SCALE IN FEET

0 200 400 600

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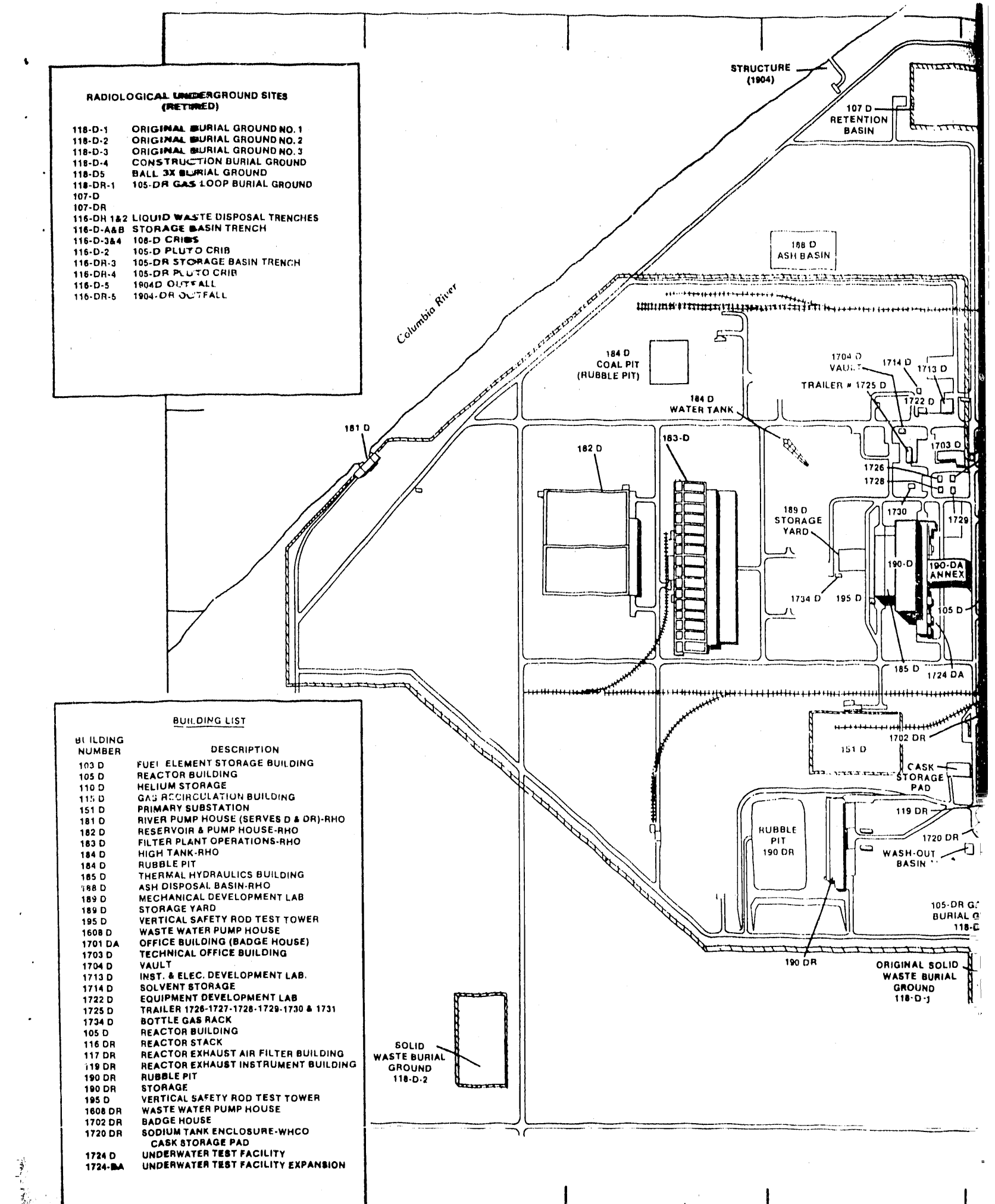
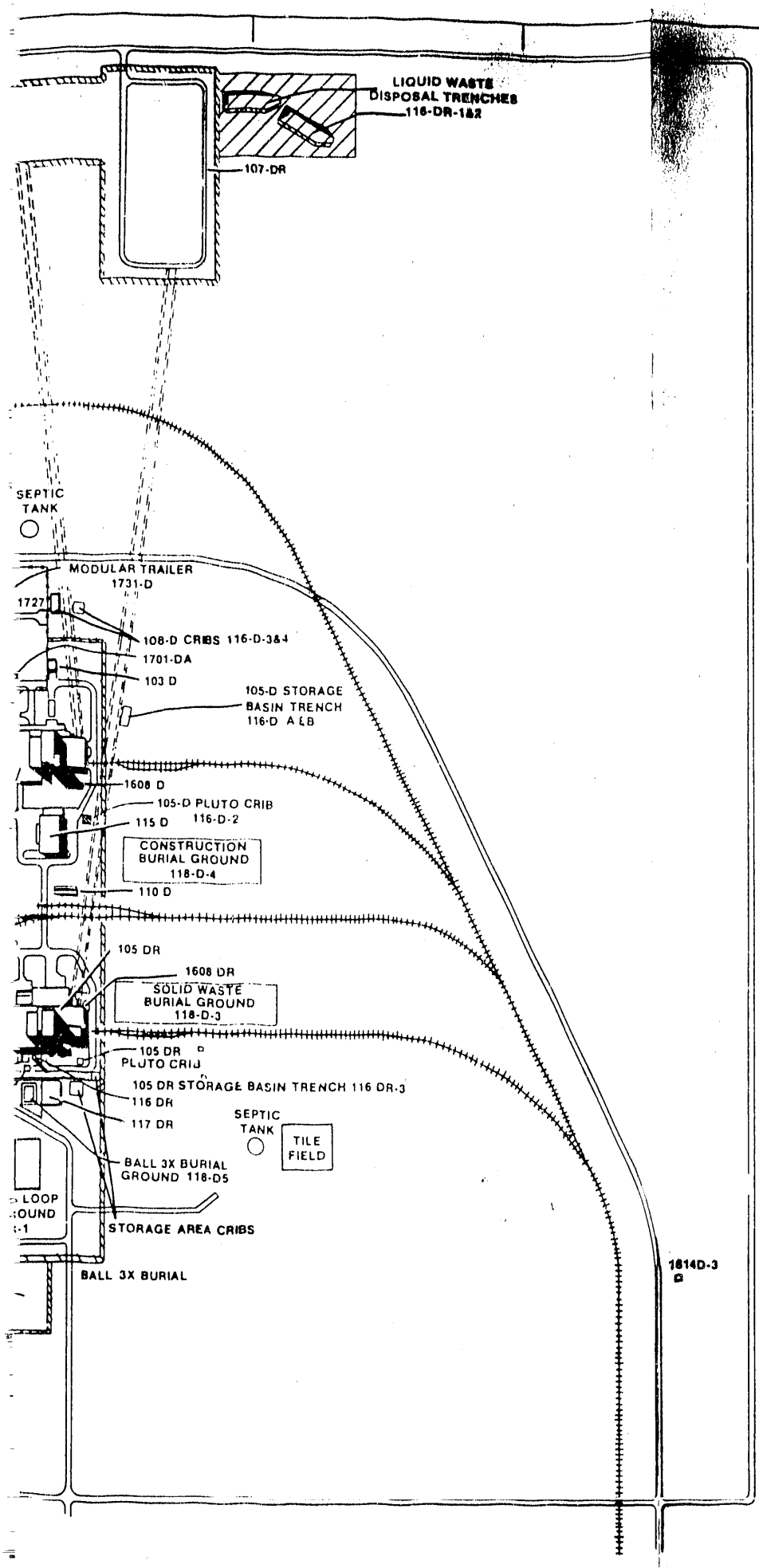


RADIOLOGICAL UNDERGROUND SITES (RETIRED)

118-D-1	ORIGINAL BURIAL GROUND NO. 1
118-D-2	ORIGINAL BURIAL GROUND NO. 2
118-D-3	ORIGINAL BURIAL GROUND NO. 3
118-D-4	CONSTRUCTION BURIAL GROUND
118-D5	BALL 3X BURIAL GROUND
118-DR-1	105-DR GAS LOOP BURIAL GROUND
107-D	
107-DR	
116-DR 1&2	LIQUID WASTE DISPOSAL TRENCHES
116-D-A&B	STORAGE BASIN TRENCH
116-D-3&4	108-D CRIBS
116-D-2	105-D PLUTO CRIB
116-DR-3	105-DR STORAGE BASIN TRENCH
116-DR-4	105-DR PLUTO CRIB
116-D-5	1904D OUTFALL
116-DR-5	1904-DR OUTFALL

BUILDING LIST

BUILDING NUMBER	DESCRIPTION
103 D	FUEL ELEMENT STORAGE BUILDING
105 D	REACTOR BUILDING
110 D	HELIUM STORAGE
115 D	GAS RECIRCULATION BUILDING
151 D	PRIMARY SUBSTATION
181 D	RIVER PUMP HOUSE (SERVES D & DR)-RHO
182 D	RESERVOIR & PUMP HOUSE-RHO
183 D	FILTER PLANT OPERATIONS-RHO
184 D	HIGH TANK-RHO
184 D	RUBBLE PIT
185 D	THERMAL HYDRAULICS BUILDING
188 D	ASH DISPOSAL BASIN-RHO
189 D	MECHANICAL DEVELOPMENT LAB
189 D	STORAGE YARD
195 D	VERTICAL SAFETY ROD TEST TOWER
1608 D	WASTE WATER PUMP HOUSE
1701 DA	OFFICE BUILDING (BADGE HOUSE)
1703 D	TECHNICAL OFFICE BUILDING
1704 D	VAULT
1713 D	INST. & ELEC. DEVELOPMENT LAB.
1714 D	SOLVENT STORAGE
1722 D	EQUIPMENT DEVELOPMENT LAB
1725 D	TRAILER 1726-1727-1728-1729-1730 & 1731
1734 D	BOTTLE GAS RACK
105 D	REACTOR BUILDING
116 DR	REACTOR STACK
117 DR	REACTOR EXHAUST AIR FILTER BUILDING
119 DR	REACTOR EXHAUST INSTRUMENT BUILDING
190 DR	RUBBLE PIT
190 DR	STORAGE
195 D	VERTICAL SAFETY ROD TEST TOWER
1608 DR	WASTE WATER PUMP HOUSE
1702 DR	BADGE HOUSE
1720 DR	SODIUM TANK ENCLOSURE-WHCO CASK STORAGE PAD
1724 D	UNDERWATER TEST FACILITY
1724-DA	UNDERWATER TEST FACILITY EXPANSION



REACTOR AREAS
100-D & 100-DR

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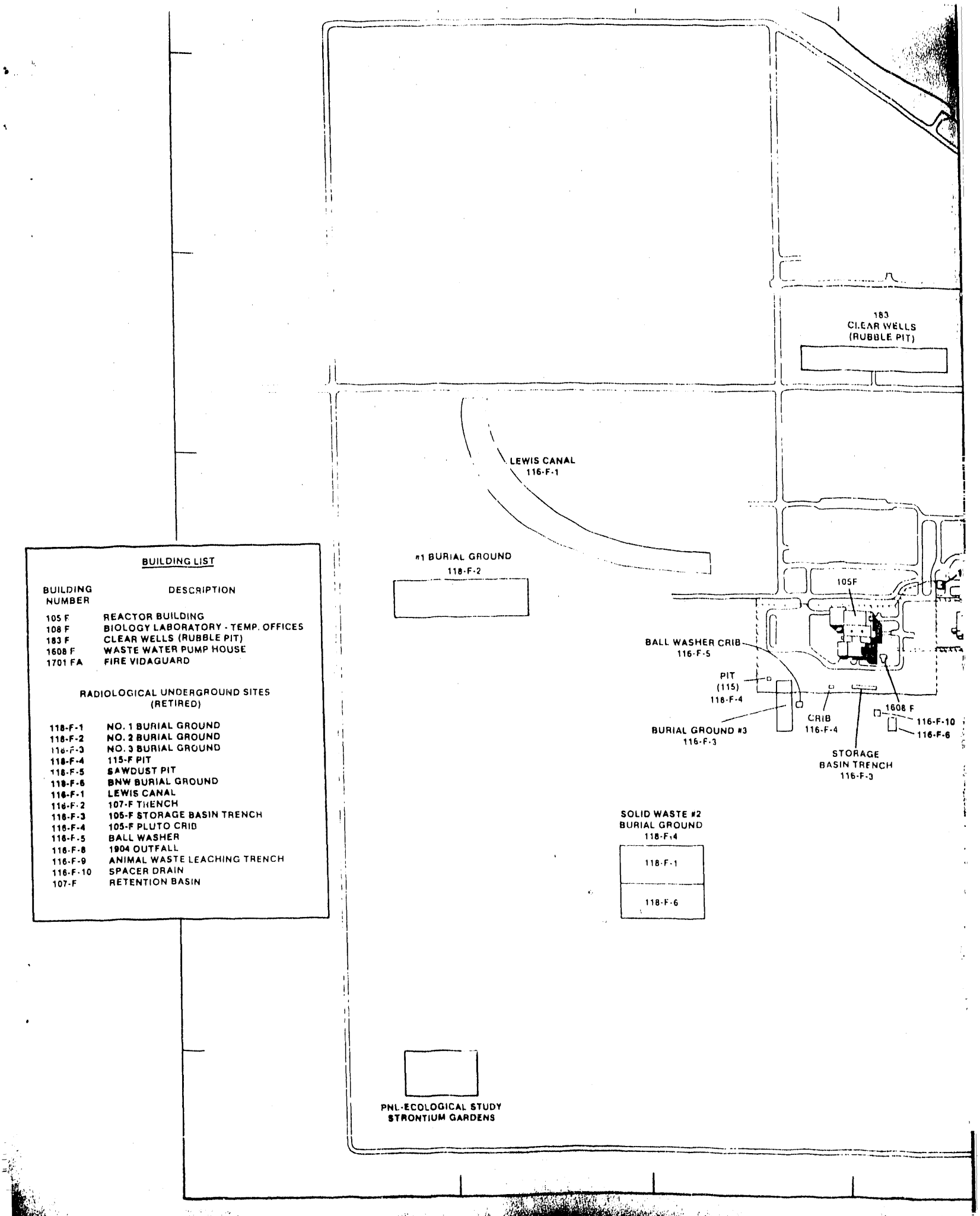
0 200 400 600

SCALE IN FEET

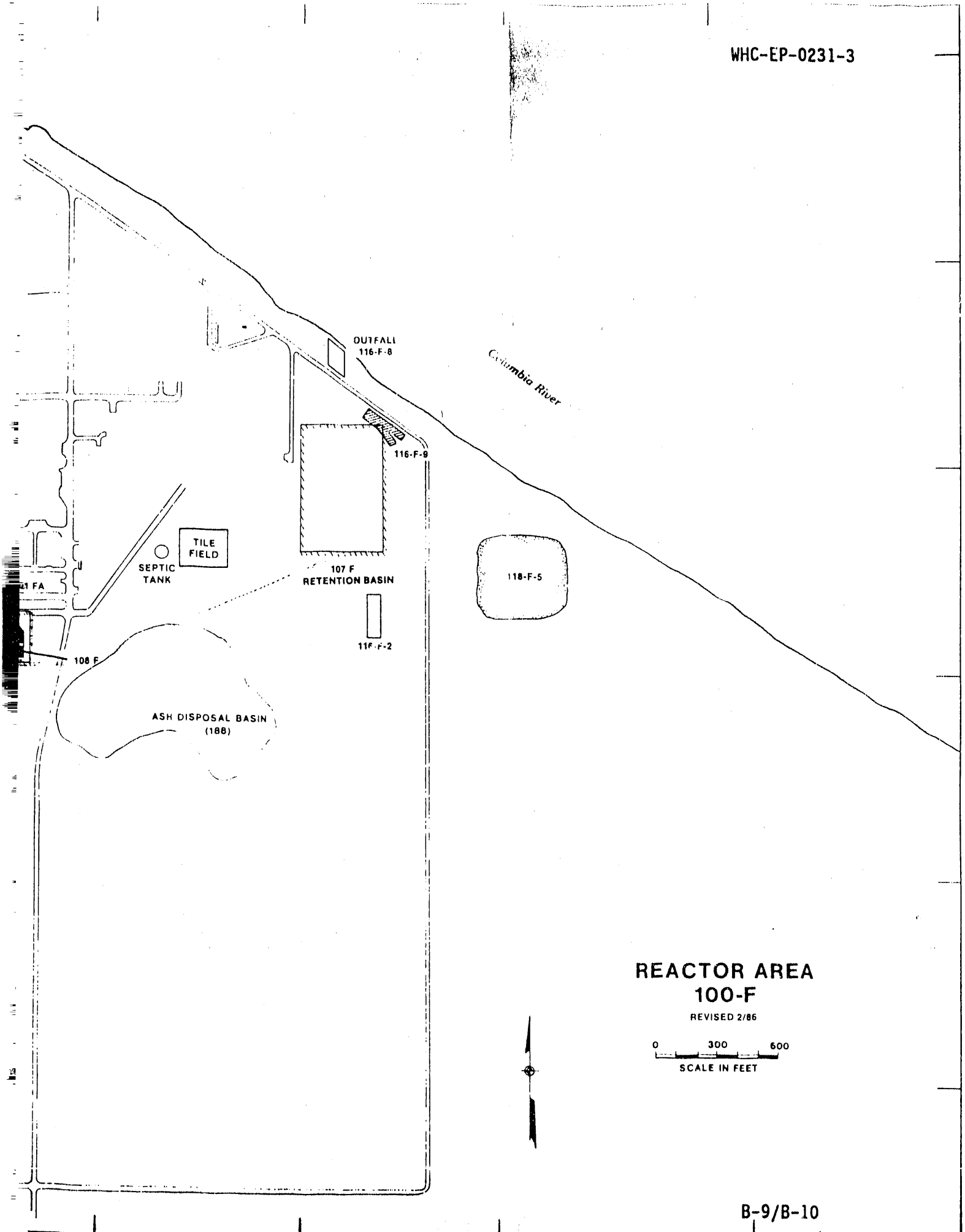


BUILDING LIST

BUILDING NUMBER	DESCRIPTION
105 F	REACTOR BUILDING
108 F	BIOLOGY LABORATORY - TEMP. OFFICES
183 F	CLEAR WELLS (RUBBLE PIT)
1608 F	WASTE WATER PUMP HOUSE
1701 FA	FIRE VIDAGUARD

RADIOLOGICAL UNDERGROUND SITES (RETIRED)

118-F-1	NO. 1 BURIAL GROUND
118-F-2	NO. 2 BURIAL GROUND
118-F-3	NO. 3 BURIAL GROUND
118-F-4	115-F PIT
118-F-5	SAWDUST PIT
118-F-6	BNW BURIAL GROUND
116-F-1	LEWIS CANAL
116-F-2	107-F TRENCH
116-F-3	105-F STORAGE BASIN TRENCH
116-F-4	105-F PLUTO CRIB
116-F-5	BALL WASHER
116-F-8	1904 OUTFALL
116-F-9	ANIMAL WASTE LEACHING TRENCH
116-F-10	SPACER DRAIN
107-F	RETENTION BASIN



REACTOR AREA
100-F

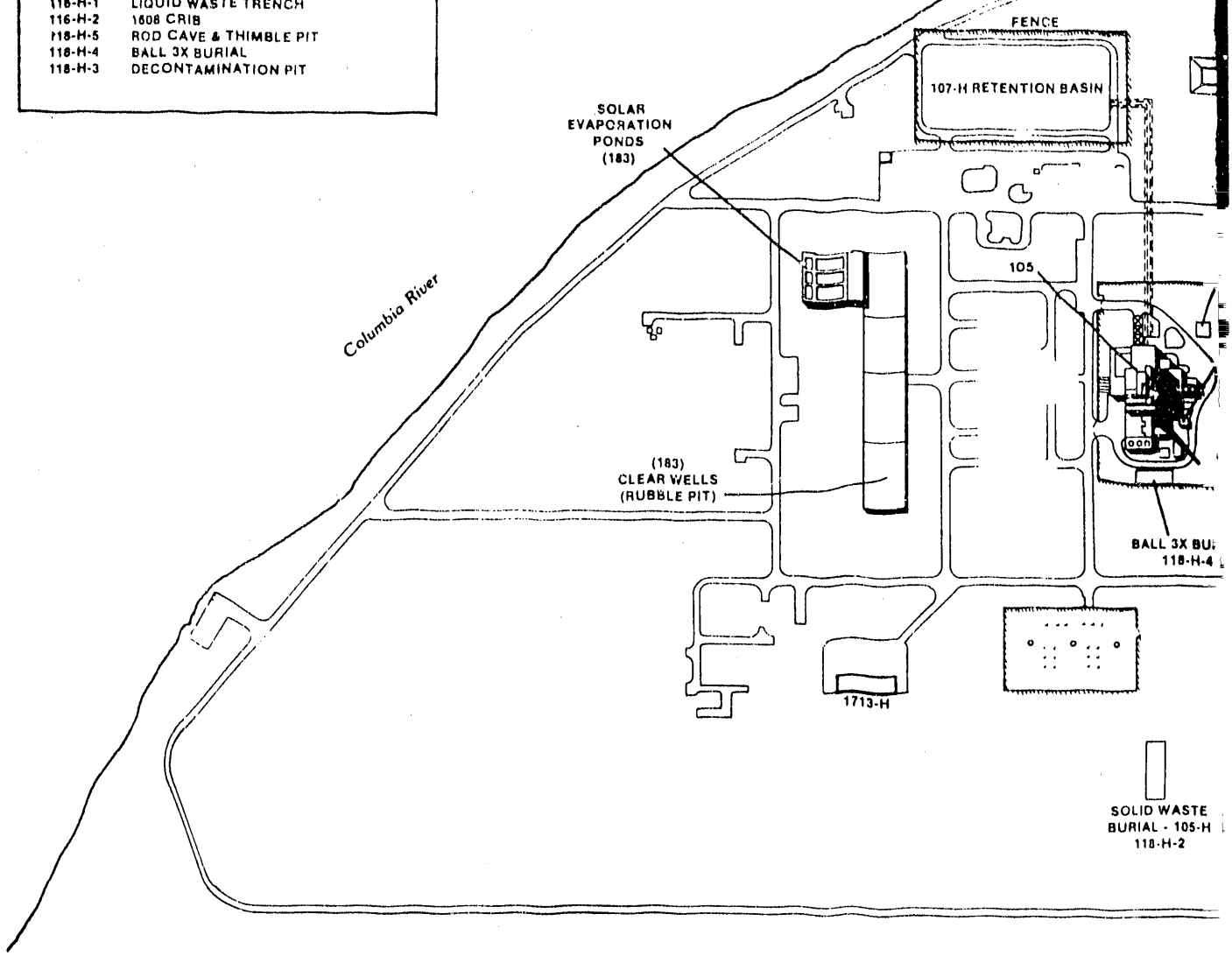
REVISED 2/86

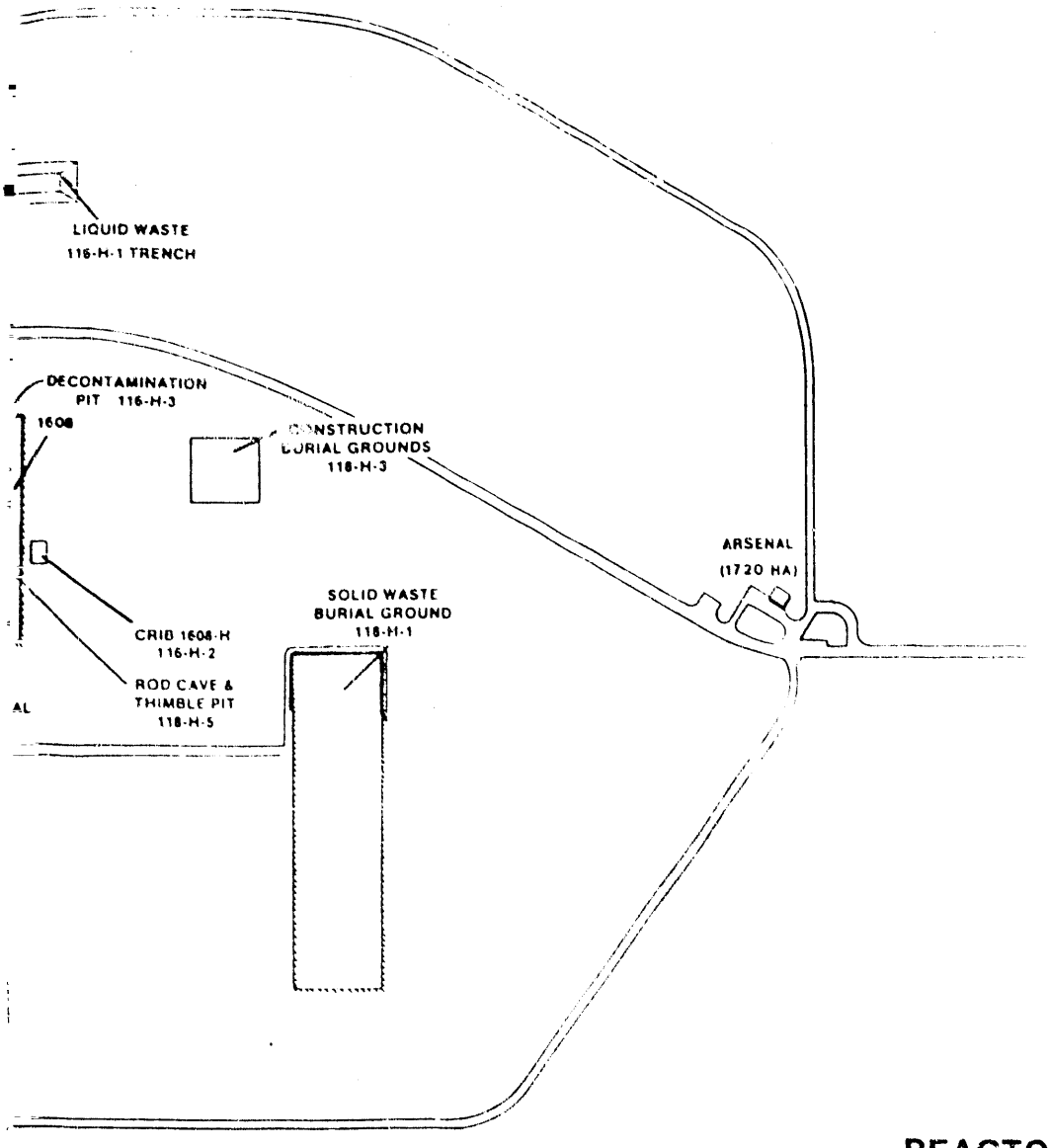
0 300 600

SCALE IN FEET

BUILDING LIST

BUILDING NUMBER	DESCRIPTION
183 H	SOLAR PONDS & CLEAR WELLS (RUBBLE PIT)
105 H	REACTOR BUILDING
1608 H	WASTE WATER PUMP HOUSE
1713 H	WAREHOUSE
1720 H	ARSENAL
	RADIOLOGICAL UNDERGROUND SITES (RETIRED
118-H-1	BURIAL GROUND
118-H-2	BURIAL GROUND-105
107-H	RETENTION BASIN
118-H-3	CONSTRUCTION BURIAL GROUND
116-H-1	LIQUID WASTE TRENCH
116-H-2	1608 CRIB
118-H-5	ROD CAVE & THIMBLE PIT
118-H-4	BALL 3X BURIAL
118-H-3	DECONTAMINATION PIT





REACTOR AREA
100-H

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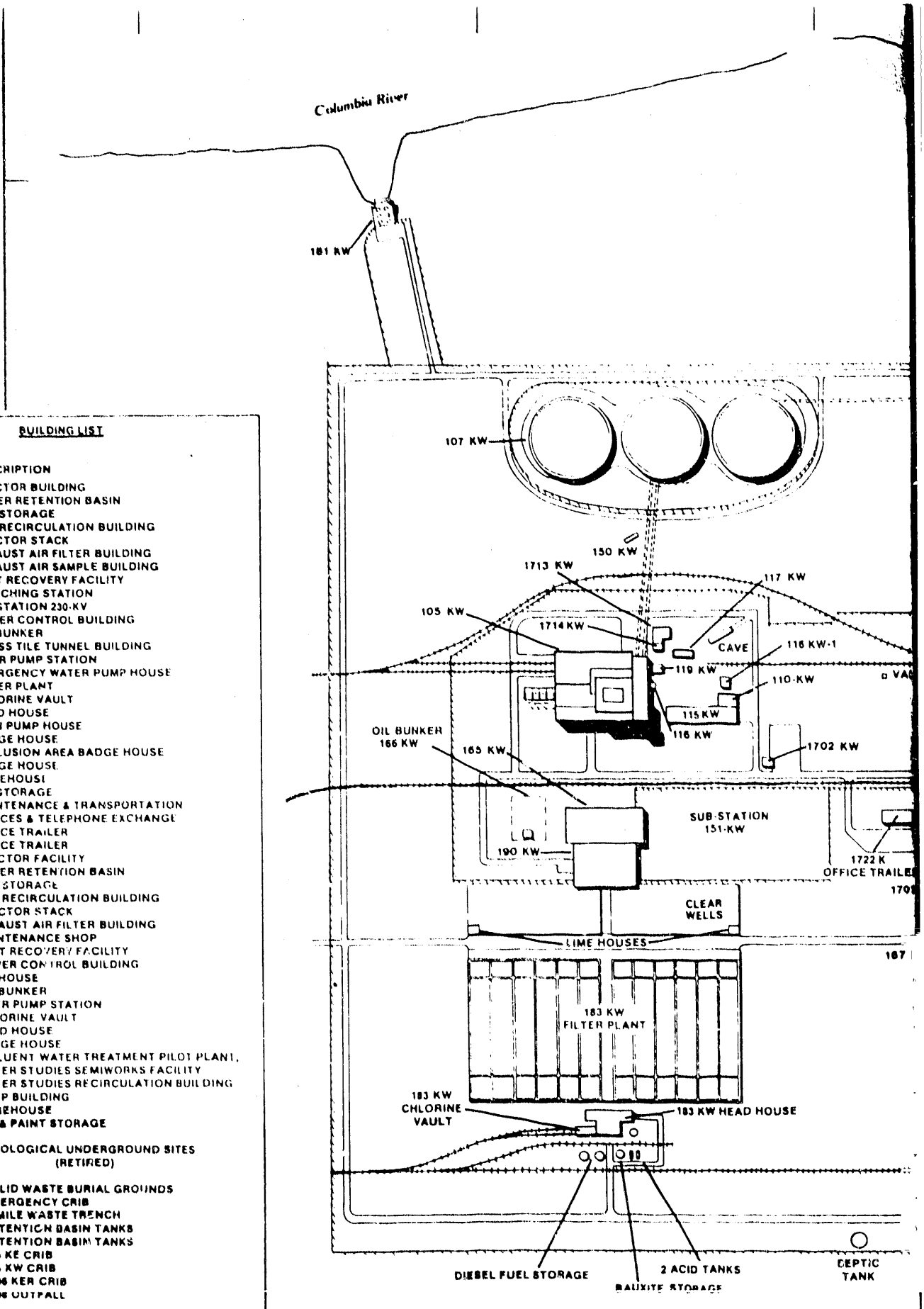
SCALE IN FEET

0 200 400 800

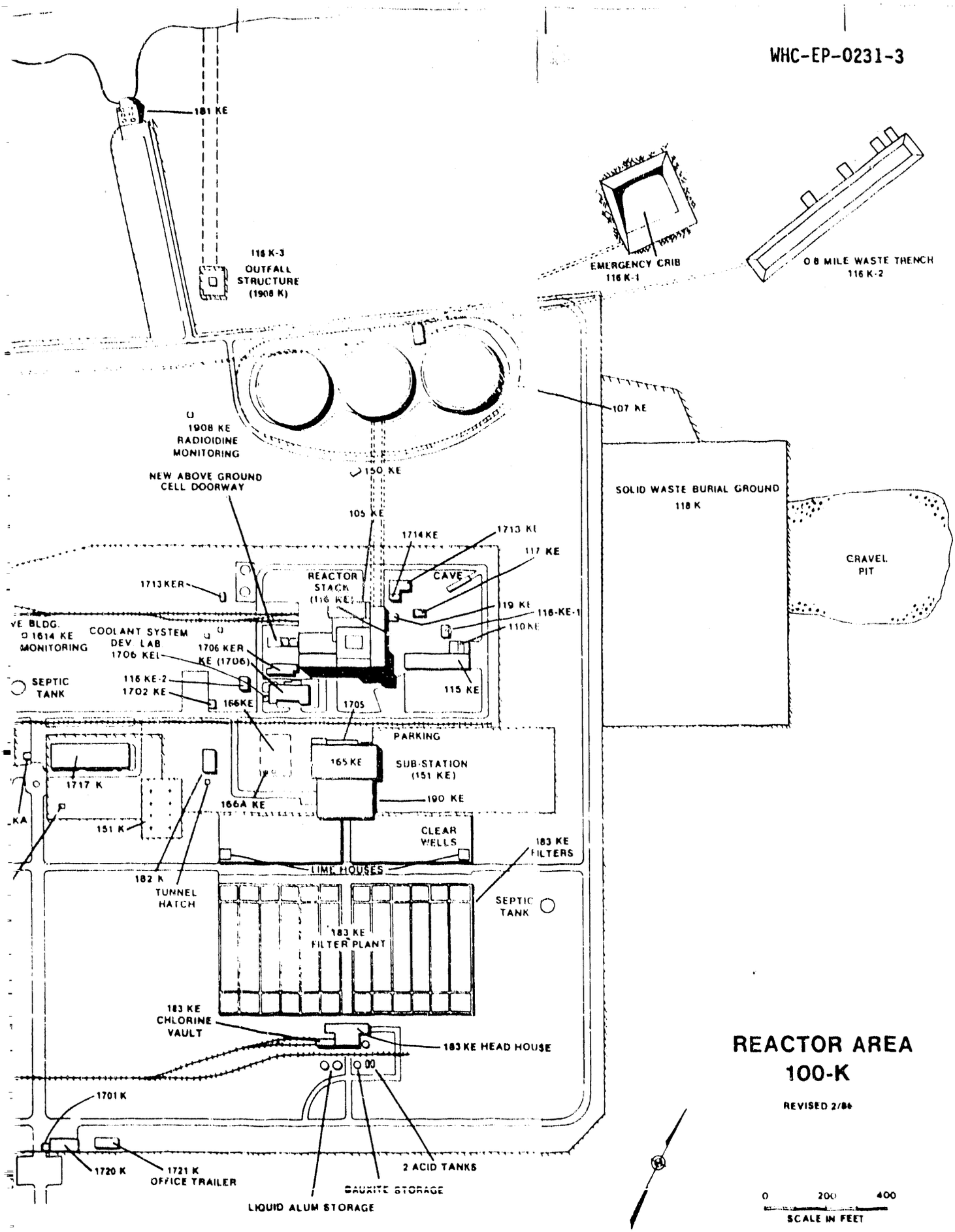


BUILDING LIST

BUILDING NUMBER	DESCRIPTION
105 KW	REACTOR BUILDING
107 KW	WATER RETENTION BASIN
110 KW	GAS STORAGE
115 KW	GAS RECIRCULATION BUILDING
116 KW	REACTOR STACK
117 KW	EXHAUST AIR FILTER BUILDING
119 KW	EXHAUST AIR SAMPLE BUILDING
150 KW	HEAT RECOVERY FACILITY
151 K	SWITCHING STATION
151 KW	SUBSTATION 230-KV
165 KW	POWER CONTROL BUILDING
166 KW	OIL BUNKER
167 K	CROSS TILE TUNNEL BUILDING
181 KW	RIVER PUMP STATION
182 K	EMERGENCY WATER PUMP HOUSE
183 KW	FILTER PLANT
183 KW	CHLORINE VAULT
183 KW	HEAD HOUSE
190 KW	MAIN PUMP HOUSE
1701 K	BADGE HOUSE
1701 KA	EXCLUSION AREA BADGE HOUSE
1702 KW	BADGE HOUSE
1713 KW	WAREHOUSE
1714 KW	OIL STORAGE
1717 K	MAINTENANCE & TRANSPORTATION
1720 K	OFFICES & TELEPHONE EXCHANGE
1721 K	OFFICE TRAILER
1722 K	OFFICE TRAILER
105 KE	REACTOR FACILITY
107 KE	WATER RETENTION BASIN
110 KE	GAS STORAGE
115 KE	GAS RECIRCULATION BUILDING
116 KE	REACTOR STACK
117 KE	EXHAUST AIR FILTER BUILDING
119 KE	MAINTENANCE SHOP
150 KE	HEAT RECOVERY FACILITY
165 KE	POWER CONTROL BUILDING
166-A KE	OIL HOUSE
166 KE	OIL BUNKER
181 KE	RIVER PUMP STATION
183 KE	CHLORINE VAULT
183 KE	HEAD HOUSE
1702 KE	BADGE HOUSE
1705	EFFLUENT WATER TREATMENT PILOT PLANT
1706 KE	WATER STUDIES SEMIWORKS FACILITY
1706 KER	WATER STUDIES RECIRCULATION BUILDING
1713 KE	SHOP BUILDING
1713 KER	WAREHOUSE
1714 KE	OIL & PAINT STORAGE

RADIOLOGICAL UNDERGROUND SITES (RETIRED)

116 K	SOLID WASTE BURIAL GROUNDS
116 K-1	EMERGENCY CRIB
116 K-2	.8 MILE WASTE TRENCH
107 KE	RETENTION BASIN TANKS
107 KW	RETENTION BASIN TANKS
116 KE-1	115 KE CRIB
116 KW-1	115 KW CRIB
116 KE-2	1706 KER CRIB
116 K-3	1908 OUTFALL



REACTOR AREA 100-K

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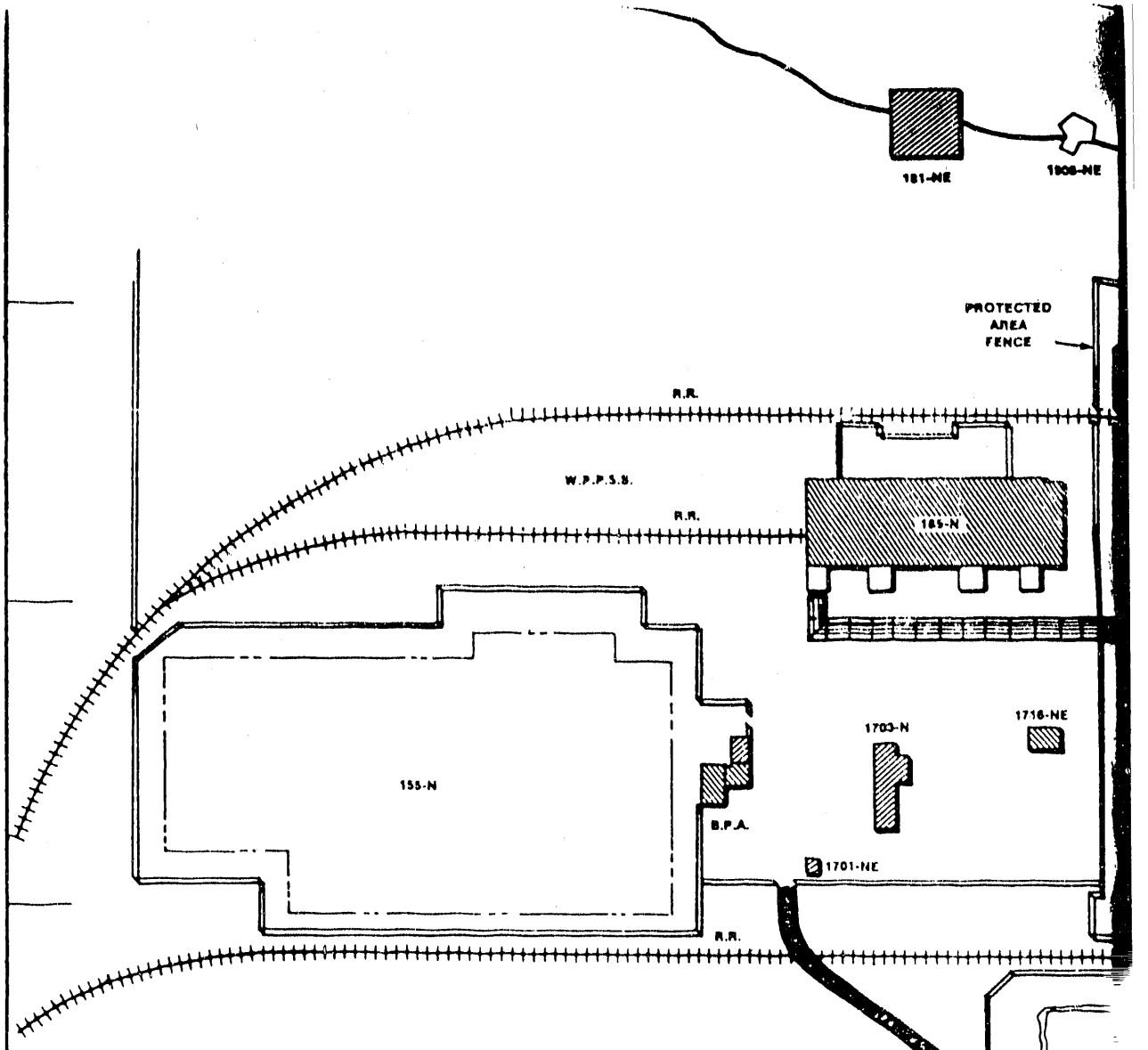
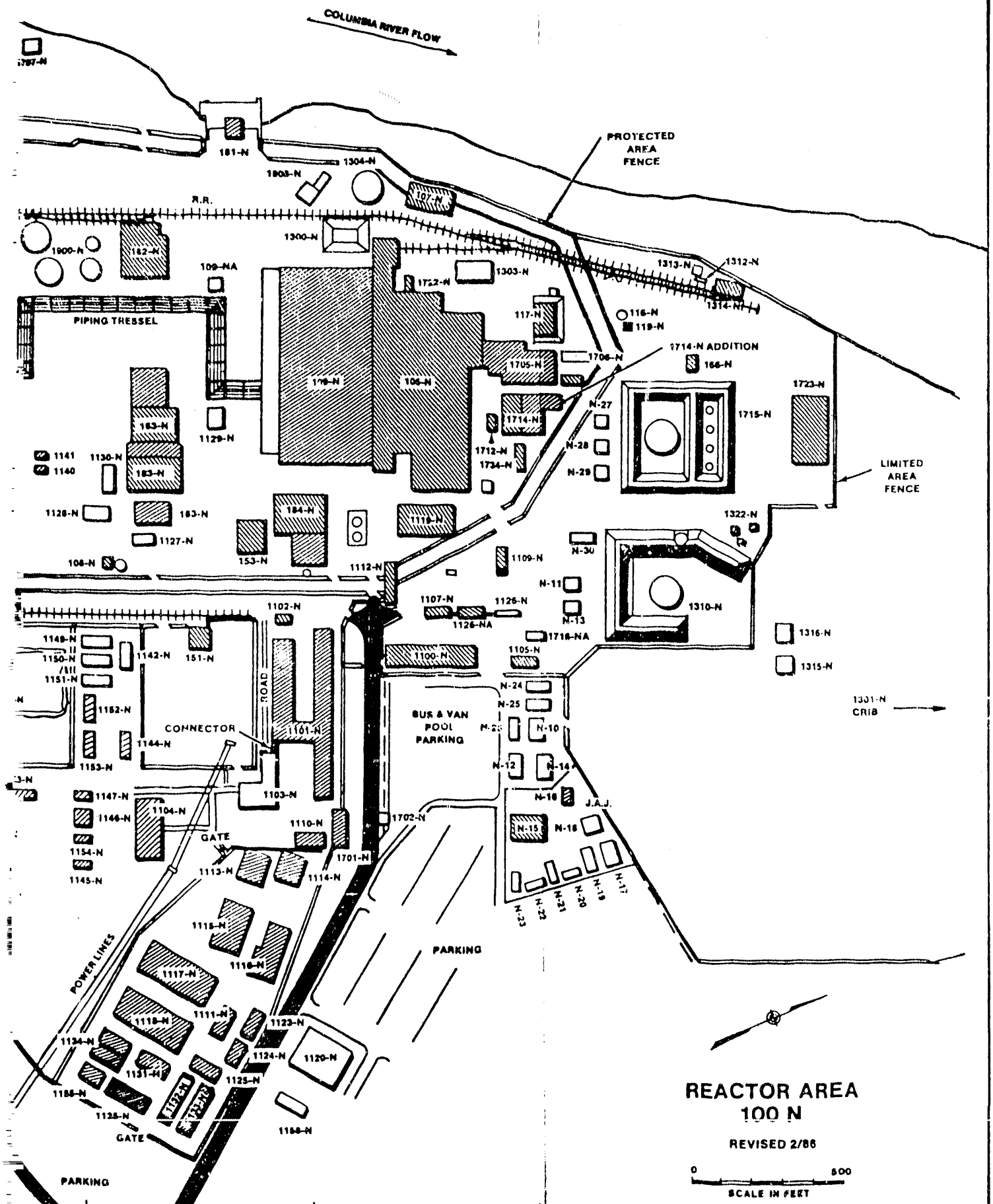


BUILDING LIST

BUILDING NUMBER	DESCRIPTION	BUILDING NUMBER	DESCRIPTION	BUILDING NUMBER	DESCRIPTION
105-N	REACTOR BUILDING	1125-N	OFFICE BUILDING (TLR.)	1324-NA	NON-RADIOACTIVE WASTE WATER PERCOLATION PONDS
107-N	BASIN RECIRCULATION FACILITY	1126-N	OFFICE BUILDING (TLR.)	1701-N	BADGE HOUSE (LIMITED AREA)
109-N	CHEMICAL UNLOADING FACILITY	1126-NA	OFFICE BUILDING (TLR.)	1702-N	VEHICLE INSPECTION STATION
109-N	HEAT EXCHANGER BUILDING	1127-N	MOBILE OUTAGE LOCKER ROOM	1703-N	WPPSS
109-NA	STEAM & FLOW BUILDING	1128-N	MOBILE OUTAGE LOCKER ROOM	1706-N	PLANT ASSISTANCE FACILITY
110-N	AIR STACK	1129-N	SPECIAL WAREHOUSE	1706-N	STORAGE BUILDING
117-N	FILTER BUILDING	1130-N	BWP CHANGE ROOM BLDG	1707-N	STORAGE BOAT HOUSE
117-NVH	VALVE CONTROL HOUSE	1131-N	KEH FIELD OFFICE	1712-N	INSULATION SHOP
119-N	AIR SAMPLING MONITORING	1132-N	MOBILE OFICE	1714-N	WAREHOUSE
151-N	230 KV ELEC. SUBSTATION	1133-N	MOBILE OFFICE	1714-NA	RECEIVING INSPECTION FACILITY
153-N	SWITCH GEAR BUILDING	1134-N	KEH MOBILE OFFICE	1714-NB	TOOL STORAGE SHED
155-N	B.P.A. SWITCH YARD	1134-NA	MOTOR GENERATOR SUPPORT	1715-N	DIESEL OIL STORAGE TANKS
163-N	DEMINERALIZATION PLANT	1135-N	MOBILE OFFICE	1715-NA	UNDERGROUND OIL TANK 195K GAL
166-N	FUEL OIL STORAGE	1140-N	WOMEN'S RESTROOM	1716-N	GAS STATION
181-N	RIVER PUMP HOUSE (105-N)	1141-N	MEN'S RESTROOM	1722-N	DECONTAMINATION HOT SHOP BLDG
181-NE	RIVER PUMP HOUSE (WPPSS)	1142-N	TELEPHONE CENTER	1723-N	CONTAM. EQUIP. STORAGE BLDG
182-N	HIGH LIFT PUMP HOUSE	1143-N	PAINT SHOP	1734-N	GAS BOTTLE STORAGE
183-N	WATER FILTER PLANT	1144-N	SANDIA NATIONAL LAB	1908-N	WATER SUPPLY TANKS
184-N	PLANT SERVICE POWER HOUSE	1145-N	LOCKER ROOM TRAILER	1908-N	SEAL WELL
184-NA	AUXILIARY POWER ANNEX BLDG.	1146-N	OFFICE BLDG. TRAILER	1908-NE	SEAL WELL (WPPSS)
185-N	TURBINE GEN. BLDG. (WPPSS)	1147-N	OFFICE FACILITY	M-10	ALL CRAFTS LUNCHROOM
1100-N	ADMINISTRATION & FIRST AID BLDG.	1149-N	OFFICE FACILITY	M-11	INSULATORS SHOP BLDG.
1101-N	OFFICE BUILDING	1150-N	OFFICE FACILITY	M-12	OFFICE BLDG. (TLR.)
1101-N	OFFICE BUILDING	1151-N	OFFICE FACILITY	M-13	PIPEFITTER STORAGE
1103-N	OFFICE BUILDING (TLR.)	1152-N	OFFICE FACILITY	M-14	OFFICE BUILDING (TLR)
1104-N	OFFICE BUILDING (TLR.)	1153-N	OFFICE FACILITY	M-15	PIPEFITTER SHOP & IRONWORKER
1105-N	OFFICE BUILDING (TLR.)	1154-N	OFFICE FACILITY	M-16	CARPENTER SHOP
1107-N	OFFICE BUILDING (TLR.)	1156-N	OFFICE FACILITY	M-17	PAINT SHOP
1109-N	OFFICE BUILDING (TLR.)	1157-N	OFFICE FACILITY	M-18	ELECTRICIAN SHOP BLDG
1110-N	OFFICE BUILDING (TLR.)	1158-N	OFFICE FACILITY	M-19	PIPEFITTER SHOP
1111-N	OFFICE BUILDING (TLR.)	1200-N	RADIOACTIVE WASTE DISPOSAL	M-20	CRAFT SHOP
1112-N	BADGE HOUSE PROTECTED AREA	1201-N	CRIB	M-21	CRAFT SHOP
1113-N	OFFICE BUILDING (TLR.)	1202-N	RADIOACTIVE DUMMY BURIAL FACIL.	M-22	CRAFT SHOP
1114-N	OFFICE BUILDING (TLR.)	1204-N	EMERGENCY SUMP TANK	M-23	CRAFT SHOP
1115-N	OFFICE BUILDING (TLR.)	1210-N	RADIOACTIVE CHEM. WASTE TREATMENT	M-24	CRAFT SHOP
1116-N	SIMULATOR BUILDING (TLR.)	1212-N	LIQUID WASTE LOADOUT STATION	M-25	CRAFT SHOP
1117-N	OFFICE BUILDING (TLR.)	1213-N	CHANGE & CONTROL ROOM	M-26	CRAFT SHOP
1118-N	OFFICE BUILDING (TLR.)	1214-N	LIQUID WASTE DISPOSAL STATION	M-27	CRAFT SHOP
1119-N	LOCKER ROOM BUILDING (TLR.)	1215-N	DIVERSION SYSTEM VALVE HOUSE	M-28	CRAFT SHOP
1120-N	WAREHOUSE-TRAINING BLDG.	1216-N	VALVE HOUSE	M-29	CRAFT SHOP
1122-N	OFFICE BUILDING (TLR.)	1220-N	WASTE TREATMENT PILOT PLANT FACIL.	M-30	CRAFT SHOP
1124-N	EMERGENCY CONTROL CENTER (TLR)	1324-N	NON-RADIOACTIVE WASTE WATER PERCOLATION PONDS		



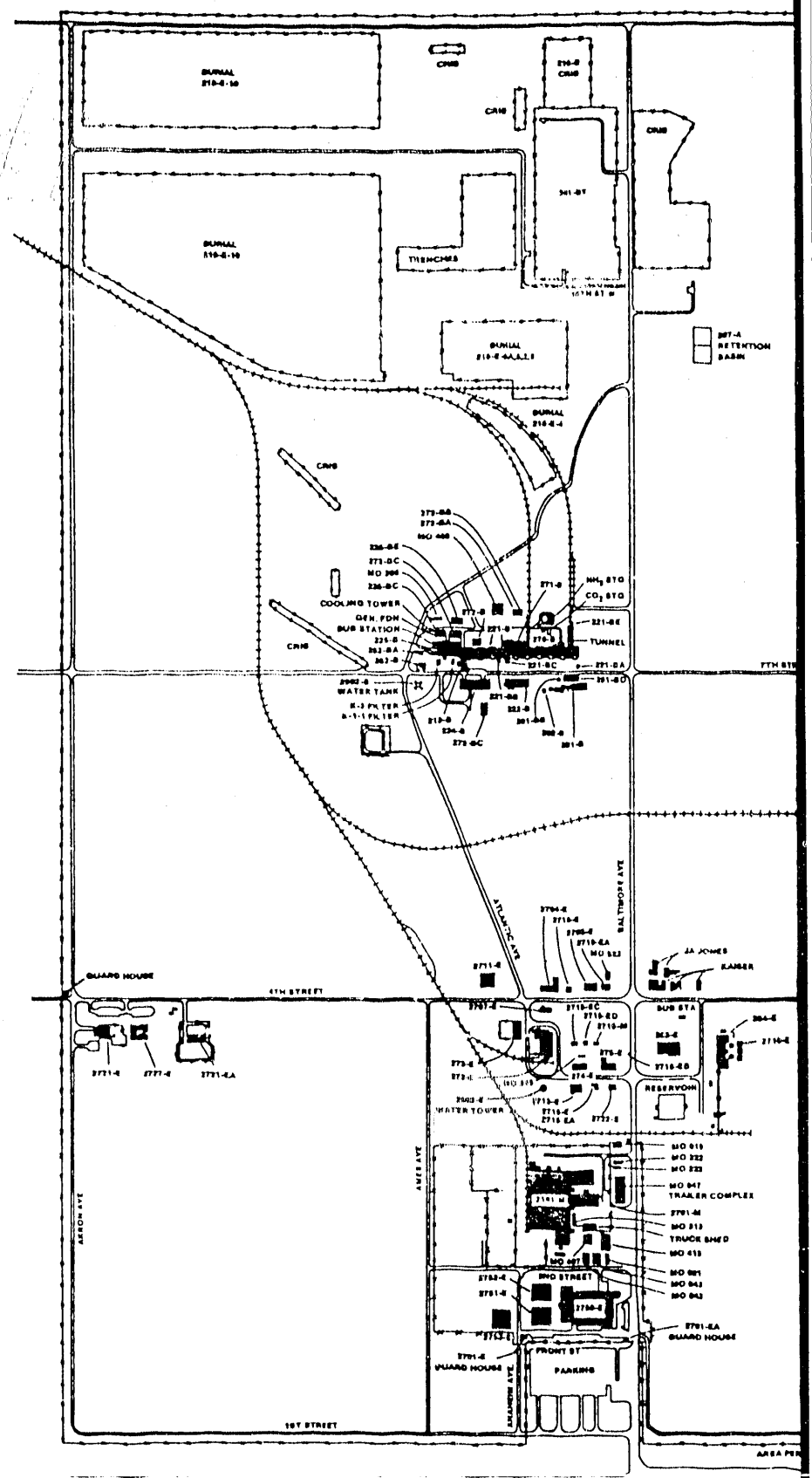
REACTOR AREA
100 N

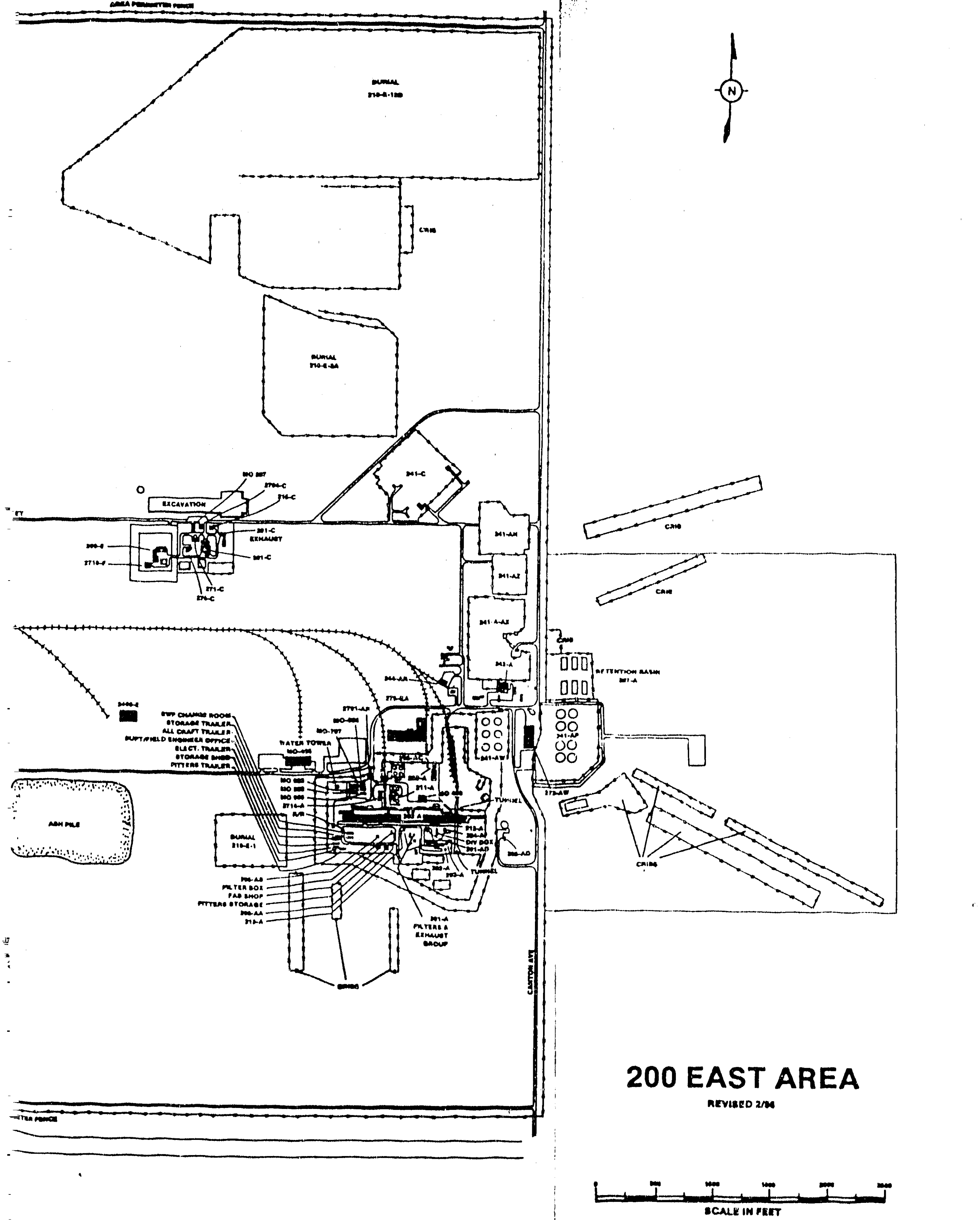
REVISED 2/86

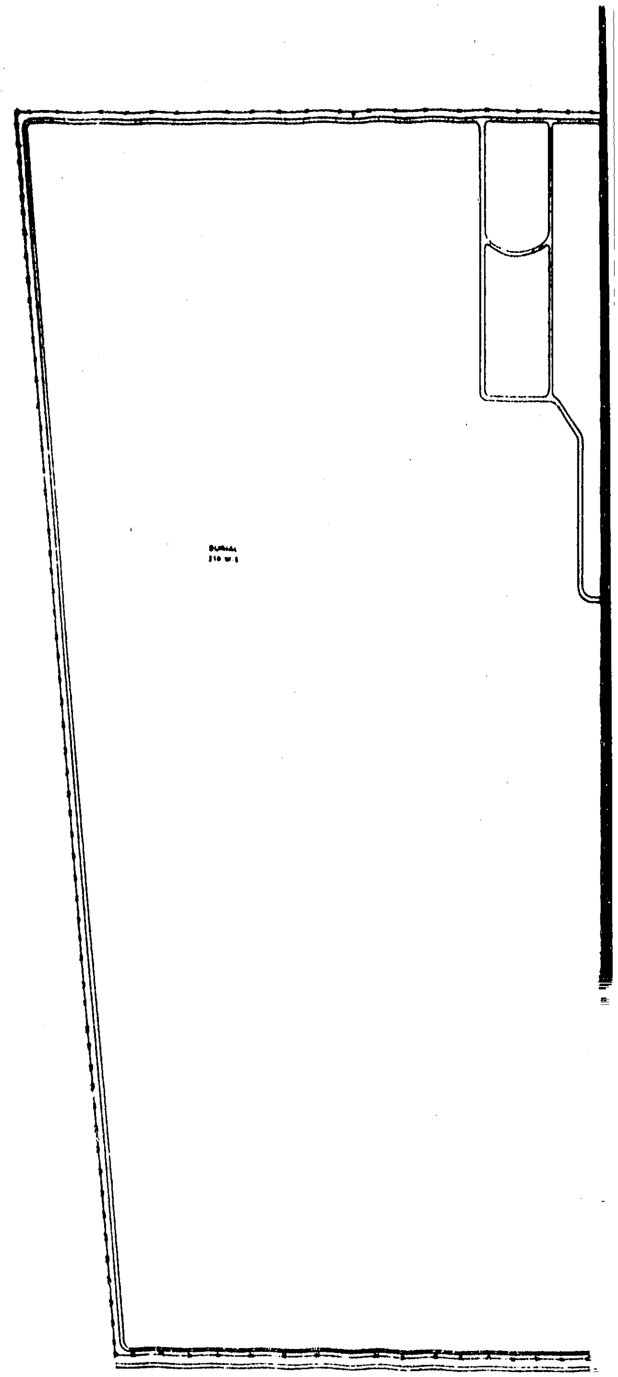
0 500
SCALE IN FEET

BUILDING LIST

201-C	STRONTIUM SEMI WORKS
202-A	PUREX
207-A	RETENTION BASIN
209-E	BNW CRITICAL MASS LAB
211-A	CHEMICAL MAKE-UP TANK FARM
212-A, 212-B	FISSION PRODUCTS, LOADOUT STATION
215-C	GAS PREPARATION BUILDING
216-C	GAS PREPARATION BUILDING
218-E-4,5,5A,7,9	BURIAL GROUNDS
218-E-10	BURIAL GROUND
218-E-12B	BURIAL GROUND
221-E	SEPARATION BUILDING
211-BF	CONDENSATE EFFLUENT DISCHARGE FACILITY
222-B	OFFICE BUILDING
224-B	STORAGE BUILDING
225-B	ENCAPSULATION BUILDING
241-A, AX	WASTE STORAGE TANK FARM
241-AN	TANK FARM
241-AY	TANK FARM
241-BY	TANK FARM
241-AW	WASTE STORAGE TANK FARM
241-AZ	WASTE STORAGE TANK FARM
241-C	WASTE STORAGE TANK FARM
242-A	EVAPORATION BUILDING
244-A, AR, BXR	VAULTS
271-B	SERVICE BUILDING
271-CR	CONTROL HOUSE
272-BC, E	SHOPS
273-E	ABANDONED
274-E	MAINTENANCE SHOP
275-E	CARPENTER'S PAINT SHOP
275-EA	WAREHOUSE
276-B	SOLVENT STORAGE
282-E	RESERVOIR
283-E	FILTER PLANT
284-E	POWER HOUSE
291-A	FAN HOUSE & STACK
291-B	SAND FILTERS
291-BC, BD, BF	NEW FILTERS
291-BE	STACK
2910-BG	STACK AIR SAMPLER
291-C, 292-B	VENTILATING STACKS
293-A	OFF GAS TREATMENT & ACID RECOVERY BLDG.
2101-M	SPARE PARTS AND ELECTRICAL WAREHOUSE
2400-E	DRY MATERIAL HANDLING FACILITY
2701-M	STORAGE BUILDING
2703-E	CHEMICAL TESTING FACILITY
2704-C, E	OFFICE BUILDING
2707-E	CHANGE HOUSE
2709-E	VACANT
2713-E	OFFICE BUILDING
2715-E	OIL & PAINT STORAGE BUILDING
2715-M	INFLAMMABLE STORAGE & PAINT SPRAY BLDG.
2716-E	STORAGE
2718-E	CRITICAL MASS FISSILE STORAGE BLDG.
2719-E	FIRST AID STATION
2720-E	VACANT
2721-E	PATROL HEADQUARTERS
2721-EA	HELICOPTER FACILITY
2722-E	OFFICE BUILDING
2727-E	OFFICE BUILDING
2750-E	OFFICE BUILDING
2751-E	OFFICE BUILDING
2752-E	OFFICE BUILDING
2753-E	OFFICE BUILDING



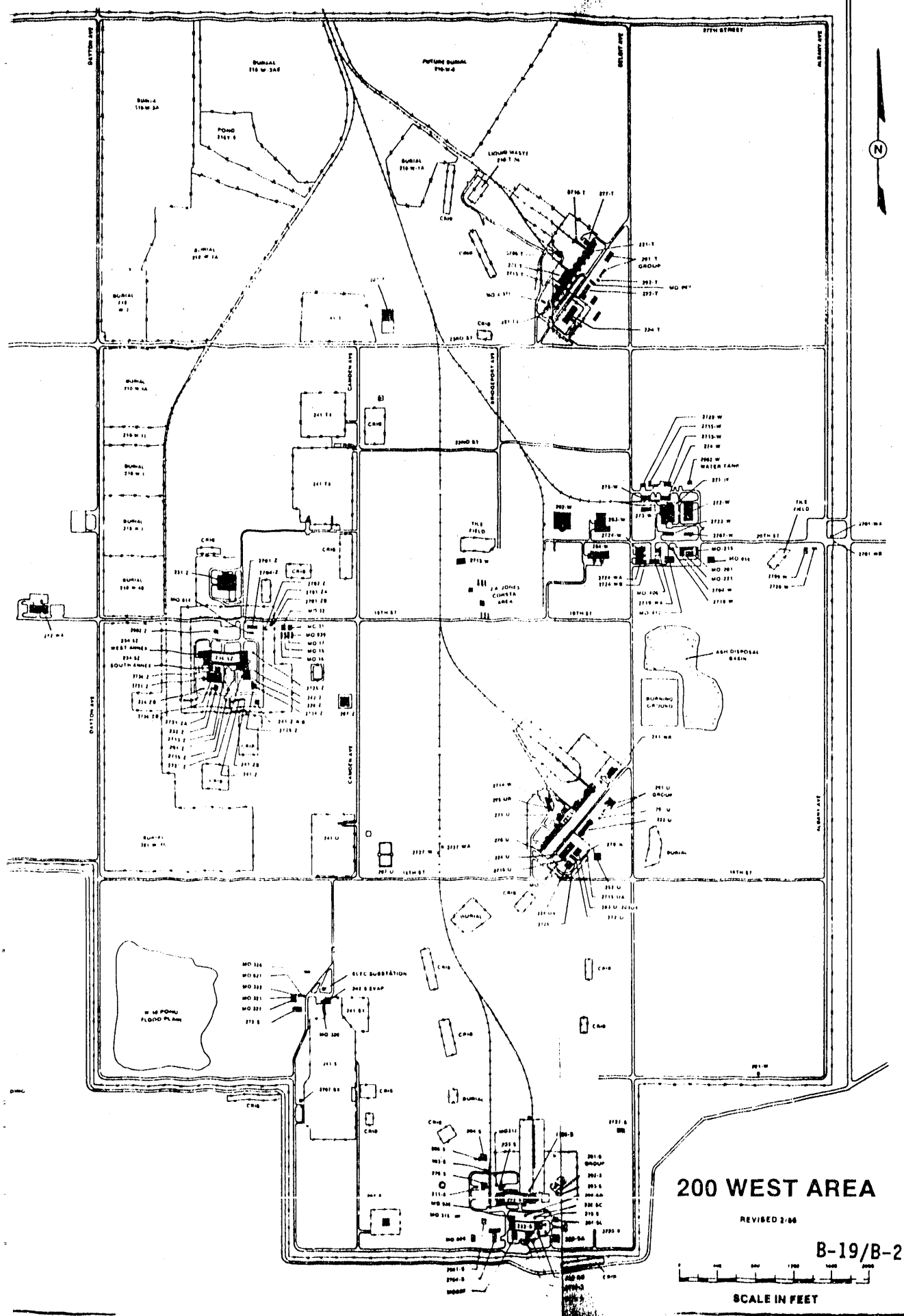

N
EXCAVATION
ASH PILE
WATER TOWER
RETENTION BASIN
TUNNEL
CANTON AVE
200 EAST AREA
SCALE IN FEET



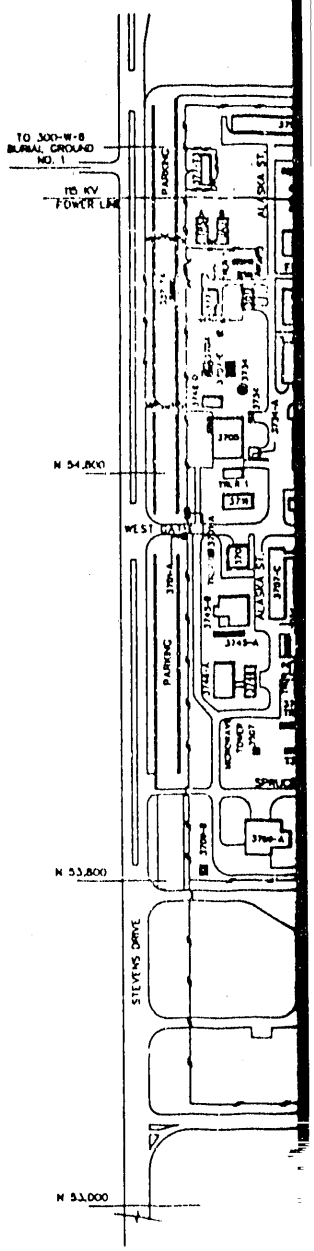
200 WEST BUILDINGS

BUILDING NUMBER	DESCRIPTION
201-W	INSTRUMENT BUILDING
202-S	REDOX CANYON & SERVICE FACILITY
203-S	METAL STORAGE TANKS
203-U, 203-[illegible]	UNH STORAGE & GAS STORAGE
204-S, 205-S	UNH LAG STORAGE
207-SL	[illegible] STORAGE
211-S	REAGENT TANK FARM
216-T-[illegible]	200 LIQUID WASTE DISPOSAL
216-W-1,2,3,4,5,6	BURIAL GROUND
216-W-[illegible]	INDUSTRIAL BURIAL GROUND
216-W-[illegible]	DRY WASTE BURIAL
219-S	WASTE TREATMENT BUILDING
221-T	EQUIPMENT DECONTAMINATION FACILITY
221-TA	FAN HOUSE
221-U	CANYON BUILDING SHUTDOWN
222-S	REDOX LABORATORY
222-SB	FILTER BUILDING
222-T	OFFICE BUILDING
222-U	LABORATORY BUILDING
224-T	Pu STORAGE
224-U	UO3 PLANT - UNH CONCENTRATION & CENTRAL CONTROL
224-UA	UO3 PLANT - UNH CALCINATION & LOADOUT
231-Z	PLUTONIUM METALLURGY LABORATORY
232-Z	INCINERATOR
233-S	CONCENTRATION FACILITY
234-5-[illegible]	STORAGE
234-5Z	PLUTONIUM FINISHING FACILITY
236-Z	PLUTONIUM RECLAMATION FACILITY
241-S	WASTE STORAGE TANK FARM
241-SX	WASTE STORAGE TANK FARM
241-TX	WASTE STORAGE TANK FARM
[illegible]	WASTE STORAGE TANK FARM
241-U	WASTE STORAGE TANK FARM
241-[illegible]	THORIUM STORAGE VAULT
241-Z	WASTE STORAGE TANK FARM
242-S-[illegible]	TURBINE BUILDING VENTILATION
242-Z	WASTE TREATMENT AND [illegible]
252-W	ELECTRICAL SUBSTATIONS

BUILDING NUMBER	DESCRIPTION
271-T, 271-U	OFFICE BUILDINGS
272-W	MACHINE SHOP BUILDING
272-WA	TANK FARM OPERATIONS BUILDING
273-W	SHOPS STORAGE
274-W	CHANGE HOUSE & SHOP
275-W	CHANGE HOUSE & SHOP
276-S, 276-U	SOLVENT HANDLING BUILDING
277-W	FABRICATION SHOP
282-W	RESERVOIR
283-W	FILTER PLANT
284-W	POWER HOUSE
291-S	EXHAUST FAN CONTROL HOUSE STACK
291-T, 291-U	STACK AND SAND FILTERS
291-Z	EXHAUST AIR FILTER STACK BUILDING
296-S	STACK MONITORING BUILDING
292-T	FISSION PRODUCTS RELEASE LAB
296-U	STACK MONITORING STATION
293-S	OFF GAS TREATMENT & ACID RECOVERY
2701-Z	GATEHOUSE
2701-ZA	EXCLUSION AREA GATEHOUSE
2704-S, 2704-W, 2704-Z	OFFICE BUILDINGS
2706-S	STACK
2706-T	EQUIPMENT DECONTAMINATION BUILDING
2707-SA, 2707-W	CHANGE HOUSES
2709-W	OFFICE BUILDING
2714-U	UO3 STORAGE
2715-T	PAINT STORAGE
2715-W	INFLAMMABLE STORAGE
2716-T	[illegible] CHECK OUT STATION
2722-W	WELDING LAB
2723-W	MASK LAUNDRY OFFICE BUILDING
2724-W	LAUNDRY
[illegible]	STORAGE BUILDING LAUNDRY
2726-U	PROPANE STORAGE
2727-Z	STORAGE
2734-Z	CYLINDER STORAGE
2736-Z	Pu STORAGE


N
200 WEST AREA
REVISED 2/86
B-19/B-20
SCALE IN FEET

BLDG	BLDG NAME	LANDLORD
201	STORAGE	WHC
202-A	URANIUM STORAGE	UNC
202-B	URANIUM STORAGE	UNC
202-C	MATERIALS EVALUATION LAB	PNL
202-E	URANIUM STORAGE	UNC
202-F	CHEMICAL PUMP HOUSE	UNC
202-G	URANIUM STORAGE	UNC
202-J	MATERIAL STORAGE	PNL
202-K	STORAGE	UNC
202-S	URANIUM OXIDE FACILITY	UNC
204	CONSTRUCTION FACILITY	UNC
205	HOT CELL VERIFICATION FACILITY (HCVF)	WHC
205A	ENGINEERING DEVELOPMENT LAB ANNEX	PNL
206(EAST)	FABRICATION AND TESTING LAB	WHC
206(WEST)	FABRICATION DEVELOPMENT LAB	PNL
208	FUELS DEVELOPMENT LABORATORY	WHC
209	CONTROL AND DATA SYSTEMS	WHC
211	STEEL HOUSE	UNC
213	FUELS MANUFACTURING LABORATORY	UNC
214	ENGINEERING DEVELOPMENT LAB	PNL
216	FILTERED WATER PLANT	WHC
218	RADIOLOGICAL CALIBRATIONS & DEVELOPMENT LAB	PNL
220	ANALYSIS & NUCLEAR RESEARCH	PNL
221	HYDROMECHANICAL FACILITY	WHC
223	METALS CREEP LABORATORY	WHC
224A & C	CHEMICAL ENGINEERING LABORATORY	WHC
225	RADIOCHEMISTRY LABORATORY	WHC
235	MATERIALS TECHNOLOGY LABORATORY	WHC
237	POST IRRADIATION TESTING LABORATORY	WHC
239	ENGINEERING SERVICES AND SAFETY	WHC
329	PHYSICAL SCIENCE LABORATORY	PNL
331	LIFE SCIENCES LABORATORY	PNL
331-A	VIROLOGY LABORATORY	PNL
331-B	DOG KENNEL	PNL
331-C	ANIMAL CARE FACILITY STORAGE	PNL
331-D	BIOMAGNETIC EFFECTS LAB	PNL
331-E	GREENHOUSE	PNL
331-F	ANIMAL RESOURCE STORAGE	PNL
331-G	FARROWING FACILITY	PNL
331-H	PLANT EXPOSURE FACILITY	PNL
332	HAZARDOUS WASTE INTERIM HOLDING FACILITY	PNL
333	N FUELS MANUFACTURING	UNC
333-1 TRL	OFFICES	UNC
334	SAMPLING SHED	UNC
334-A	SPENT ACID STORAGE	UNC
335	AEROBAL TEST FACILITY	PNL
336A	FAST REACTOR THERMAL ENGINEERING FACILITY	WHC
336	HIGH BAY TEST FACILITY	PNL
337	HIGH TEMPERATURE SODIUM FACILITY AND OFFICES	WHC
338	SAF COLD TEST FACILITY	WHC
340A	RETENTION AND NEUTRALIZATION FACILITY	WHC
340B & C	RR WASTE LOADOUT FACILITY	WHC
364	PLANT OPERATIONS AND MAINTENANCE FACILITY	PNL
366A	PAINT SHOP	PNL
366B	WAREHOUSE	PNL
366C	STORAGE	PNL
366G-A	INFRA RED LAB	WHC
382E	GENERATOR SUBSTATION	WHC
377	STEAM GENERATOR EXAMINATION FACILITY	PNL
382	PUMP HOUSE	WHC
382A	NORTH GROUND WATER TANK 200,000 GAL	WHC
382B	SOUTH GROUND WATER TANK 225,000 GAL	WHC
382C	WEST GROUND WATER TANK 500,000 GAL	WHC
384	POWER HOUSE	WHC
3606-A	MATERIALS PROPERTIES LAB	WHC
3606-B	SERVICE SHOP	WHC
3607	SEPTIC TANKS	WHC
3612B & C	EMERGENCY GENERATOR AND CONTROL	WHC
3621C	EMERGENCY GENERATOR STATION #3	WHC
3701A	APPLE STREET GUARD STATION	WHC
3701D	PATROL HEADQUARTERS	WHC
3701L	WISCONSIN STREET GUARD STATION	WHC
3701N	NORTH GUARD STATION	UNC
3701R	CYPRESS STREET GUARD STATION	WHC
3701S	GEORGE WASHINGTON WAY GUARD STATION	WHC
3701U	PROTECTED AREA GUARD STATION	WHC
3702	OFFICES	WHC
3703	OFFICES	WHC
3704	STORAGE (JAJ)	JAJ
3705	PHOTOGRAPHY	PNL
3706	INFORMATION SERVICES	WHC
3707A	FUELS TRAINING	UNC
3707B	CUSTODIAL SERVICES	WHC
3707C	AUTOMATED TECHNOLOGY	WHC
3707D	INFORMATION SERVICES	WHC
3707E	STORAGE (JAJ)	WHC
3707F	PERSONNEL SURVEY	WHC
3707	CHANGE ROOM	WHC
[illegible]	RADIOANALYTICAL LABORATORY	PNL
[illegible]	MED. PAINT SHOP	WHC
[illegible]	FIRE STATION	WHC
[illegible]A	OIL STORAGE	WHC
3711	MAINTENANCE STORAGE	WHC
3712	PLANT'S WAREHOUSE	UNC
3713	PAINT AND CARPENTER SHOP	UNC
3714	ORGANIC CHEMISTRY LABORATORY	PNL
3715	STORAGE	WHC
3716	STORAGE	UNC
3717	SHEET METAL AND ENGINEERING OFFICES	UNC
3717B	STANDARDS LABORATORY	WHC
3717C	ARCHIVE STORAGE	WHC
3718	OPERATIONS SUPPORT SERVICES MECHANICAL	WHC
3718A	LABORATORY EQUIPMENT CENTRAL POOL	PNL
3718B	LABORATORY EQUIPMENT CENTRAL POOL	PNL
3718C	STORAGE (306)	WHC
3718E	STORAGE (324)	WHC
3718G	STORAGE BUILDING	PNL
3718H	SODIUM STORAGE FACILITY	WHC
3718M	OPERATIONS SUPPORT SERVICES ELECTRICAL	WHC
3719	COMPUTER FACILITY	WHC
3720	MATERIALS SCIENCE LAB	PNL
3722	CONSTRUCTION SHOP	JAJ
3727	ARCHIVE FISSILE SPECIMEN VAULT	WHC
3728	TEST ARTICLE STORAGE	WHC
3730	GAMMA NEUTRON IRRADIATION FACILITY	WHC
3731	LABORATORY EQUIPMENT CENTRAL POOL	PNL
3734	STORAGE	UNC
3734-A	PAINT STORAGE	UNC
3746	RADIOLOGICAL CALIBRATIONS AND STANDARDS	PNL
3746A	ELECTRON ACCELERATOR	PNL
3746B	POSITIVE ION ACCELERATOR	PNL
3748	RADIOLOGICAL PHYSICS BLDG	PNL
3748A	RADIOLOGICAL PHYSICS LABORATORY	PNL
3748D	TECHNICAL SERVICE ANNEX	PNL
3750	TECHNICAL INFORMATION BLDG	PNL
3752	LABORATORY SAFETY	PNL
3753	OFFICES	WHC
3754	OFFICES	PNL
3756	OFFICES	WHC
3758	OFFICES	WHC
3767	OFFICES	WHC
3768	OFFICES	WHC
3769	OFFICES	WHC
3770	OFFICES	WHC
3790	SECURITY OPERATIONS	WHC



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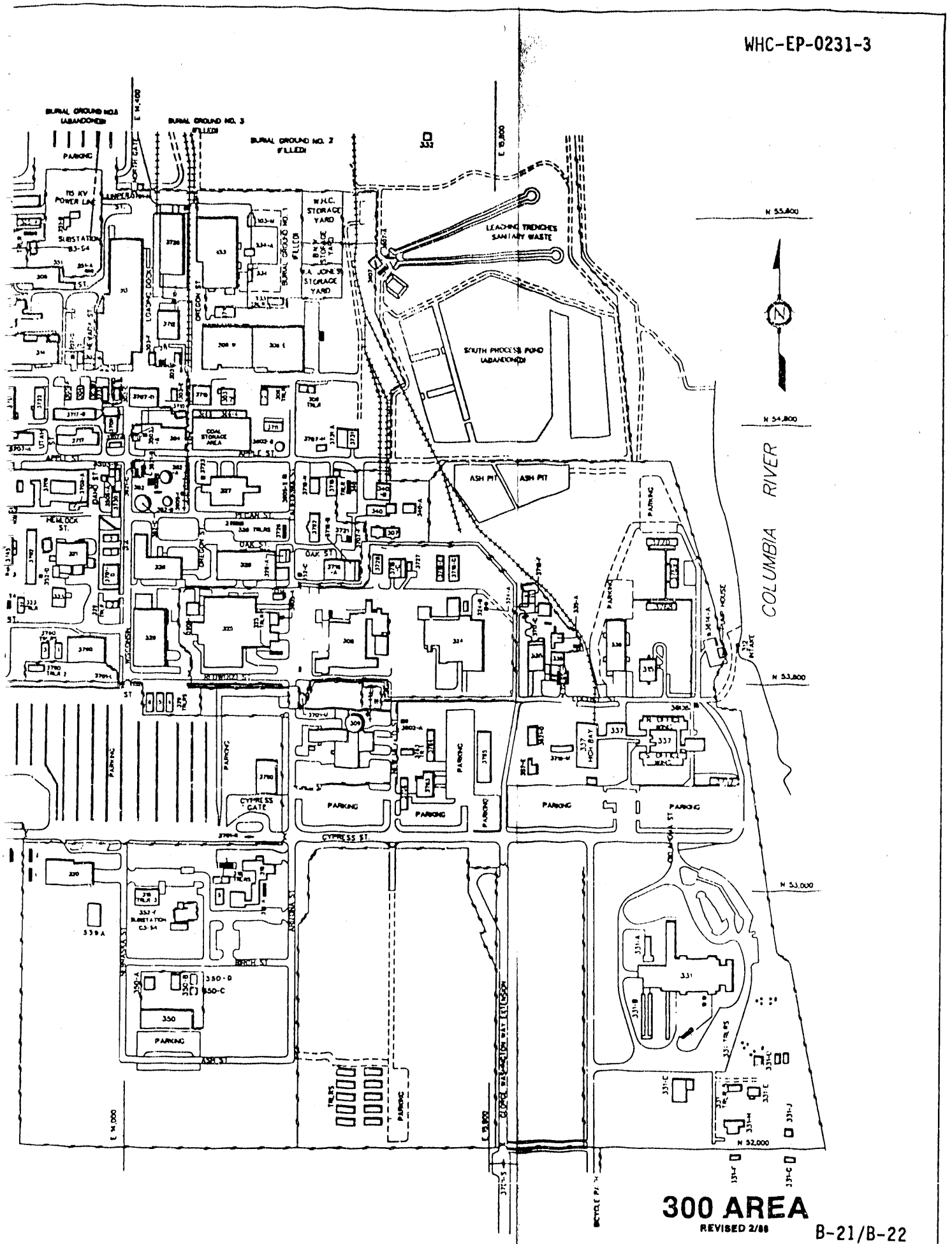
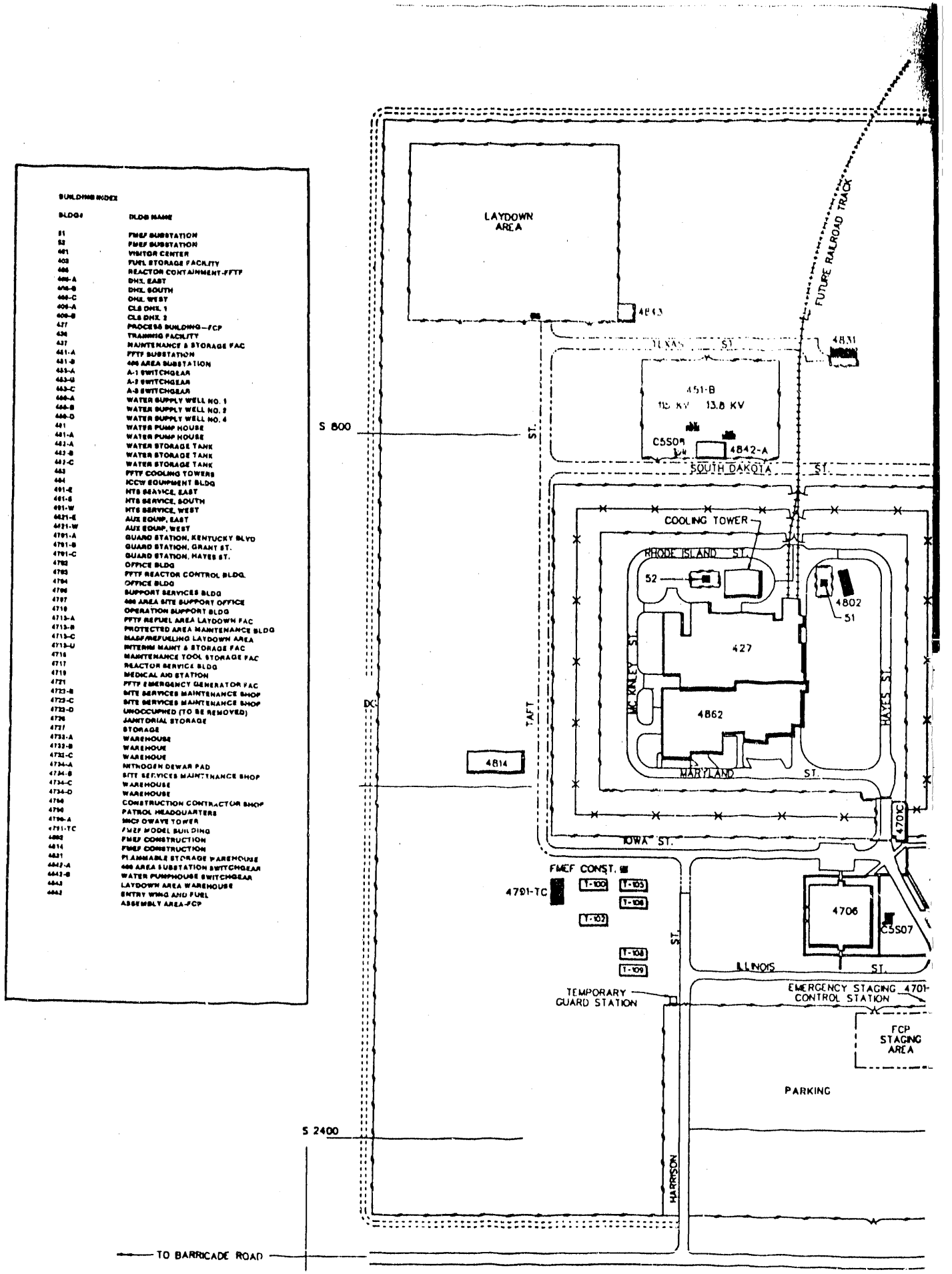
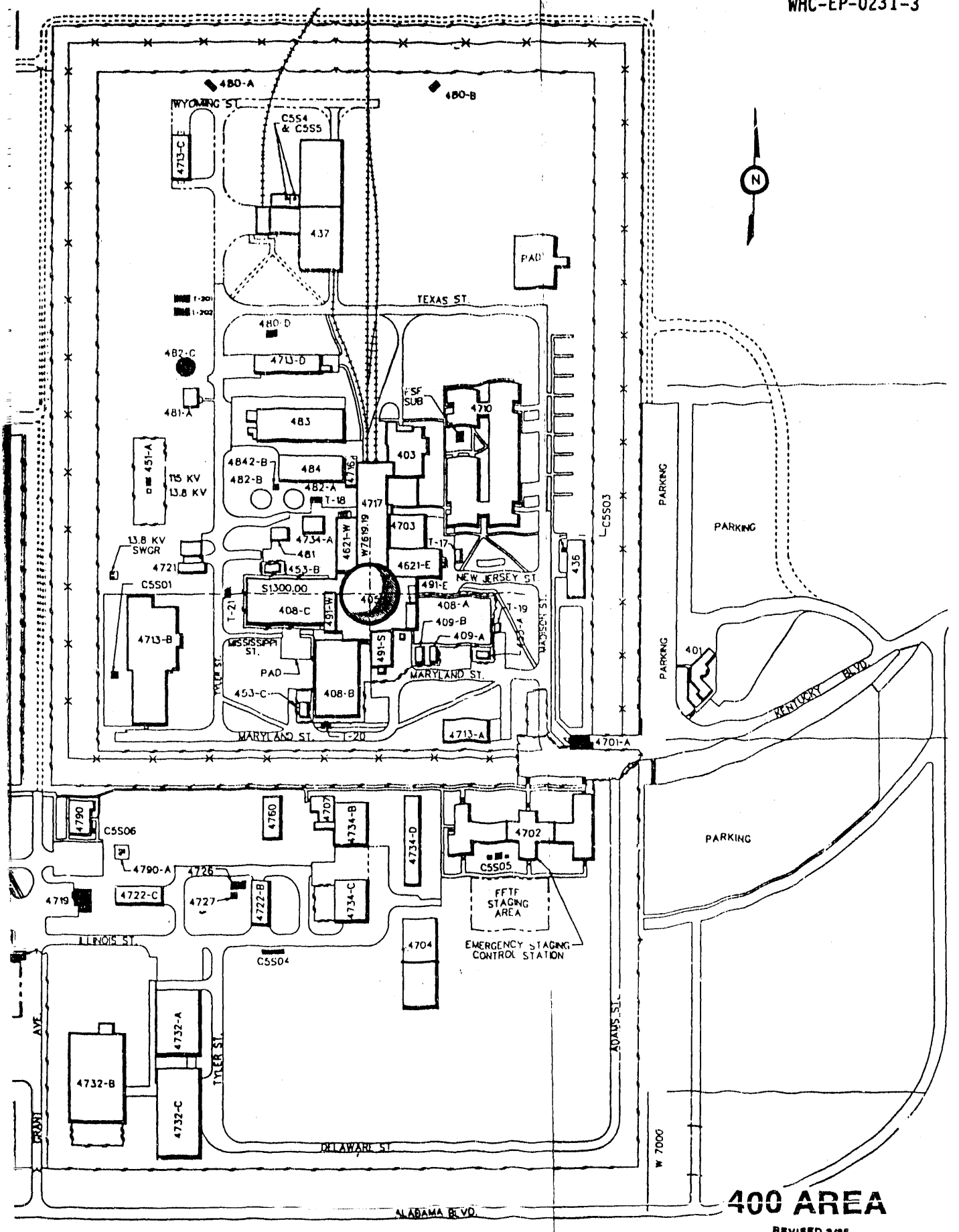


B-21/B-22


BUILDING INDEX
BLDG # BLDG NAME
51 FMEF SUBSTATION
52 FMEF SUBSTATION
401 VISITOR CENTER
402 FUEL STORAGE FACILITY
405 REACTOR CONTAINMENT-FFTF
405-A DHL EAST
405-B DHL SOUTH
405-C DHL WEST
405-A CLS DHL 1
405-B CLS DHL 2
427 PROCESS BUILDING—FCP
436 TRAINING FACILITY
437 MAINTENANCE & STORAGE FAC
451-A FFTF SUBSTATION
451-B 400 AREA SUBSTATION
453-A A-1 SWITCHGEAR
453-B A-2 SWITCHGEAR
453-C A-3 SWITCHGEAR
466-A WATER SUPPLY WELL NO. 1
466-B WATER SUPPLY WELL NO. 2
466-D WATER SUPPLY WELL NO. 4
481 WATER PUMP HOUSE
481-A WATER PUMP HOUSE
482-A WATER STORAGE TANK
482-B WATER STORAGE TANK
482-C WATER STORAGE TANK
483 FFTF COOLING TOWERS
484 ICCW EQUIPMENT BLDG
491-E MTS SERVICE, EAST
491-S MTS SERVICE, SOUTH
491-W MTS SERVICE, WEST
4621-E AUX EQUIP, EAST
4621-W AUX EQUIP, WEST
4701-A GUARD STATION, KENTUCKY BLVD
4701-B GUARD STATION, GRANT ST.
4701-C GUARD STATION, HAYES ST.
4702 OFFICE BLDG
4703 FFTF REACTOR CONTROL BLDG.
4704 OFFICE BLDG
4706 SUPPORT SERVICES BLDG
4707 400 AREA SITE SUPPORT OFFICE
4710 OPERATION SUPPORT BLDG
4713-A FFTF REFUEL AREA LAYDOWN FAC
4713-B PROTECTED AREA MAINTENANCE BLDG
4713-C MAB/REFUELING LAYDOWN AREA
4713-D INTERIM MAINT & STORAGE FAC
4716 MAINTENANCE TOOL STORAGE FAC
4717 REACTOR SERVICE BLDG
4719 MEDICAL AID STATION
4721 FFTF EMERGENCY GENERATOR FAC
4723-B SITE SERVICES MAINTENANCE SHOP
4723-C SITE SERVICES MAINTENANCE SHOP
4723-D UNOCCUPIED (TO BE REMOVED)
4726 JANITORIAL STORAGE
4727 STORAGE
4732-A WAREHOUSE
4732-B WAREHOUSE
4732-C WAREHOUSE
4734-A NITROGEN DEWAR PAD
4734-B SITE SERVICES MAINTENANCE SHOP
4734-C WAREHOUSE
4734-D WAREHOUSE
4750 CONSTRUCTION CONTRACTOR SHOP
4750 PATROL HEADQUARTERS
4790-A MICROWAVE TOWER
4791-TC FMEF MODEL BUILDING
4802 FMEF CONSTRUCTION
4814 FMEF CONSTRUCTION
4821 FLAMMABLE STORAGE WAREHOUSE
4842-A 400 AREA SUBSTATION SWITCHGEAR
4842-B WATER PUMPHOUSE SWITCHGEAR
4843 LAYDOWN AREA WAREHOUSE
4862 ENTRY WING AND FUEL ASSEMBLY AREA-FCP
LAYDOWN AREA
4843
FUTURE RAILROAD TRACK
TEXAS ST.
4831
451-B
115 KV 13.8 KV
C5509
4842-A
SOUTH DAKOTA ST.
S 800
ST.
COOLING TOWER
RHODE ISLAND ST.
52
4802
51
427
WC KINLEY ST.
4862
HAYES ST.
TAFT
DC
4814
MARYLAND ST.
4701C
IOWA ST.
FMEF CONST.
4791-TC
T-100
T-105
T-106
T-107
T-108
T-109
4706
C5507
ILLINOIS ST.
TEMPORARY GUARD STATION
EMERGENCY STAGING 4701 CONTROL STATION
FCP STAGING AREA
PARKING
S 2400
HARRISON
TO BARRICADE ROAD

WHC-EP-0231-3

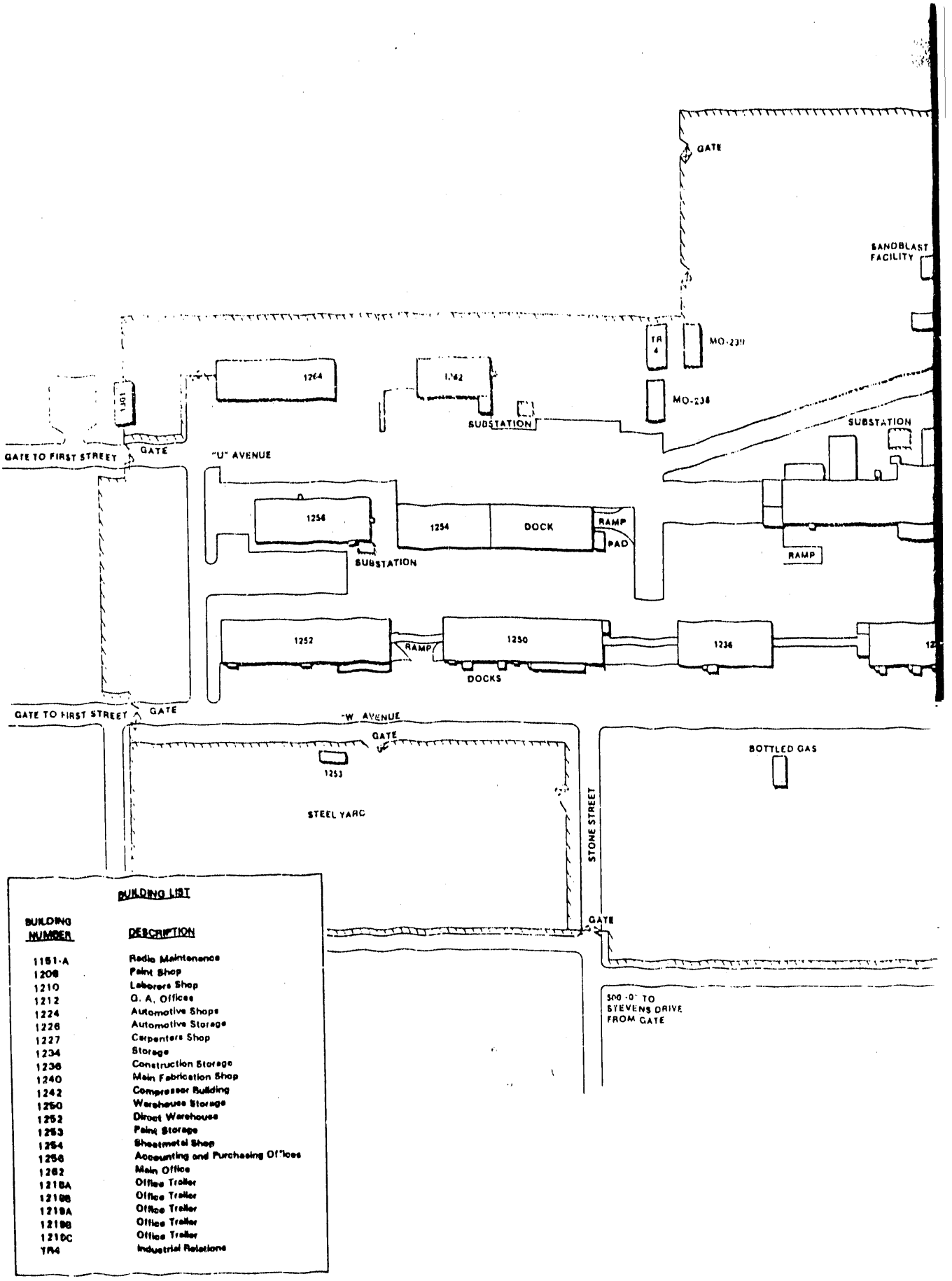


400 AREA

REVISED 2/86

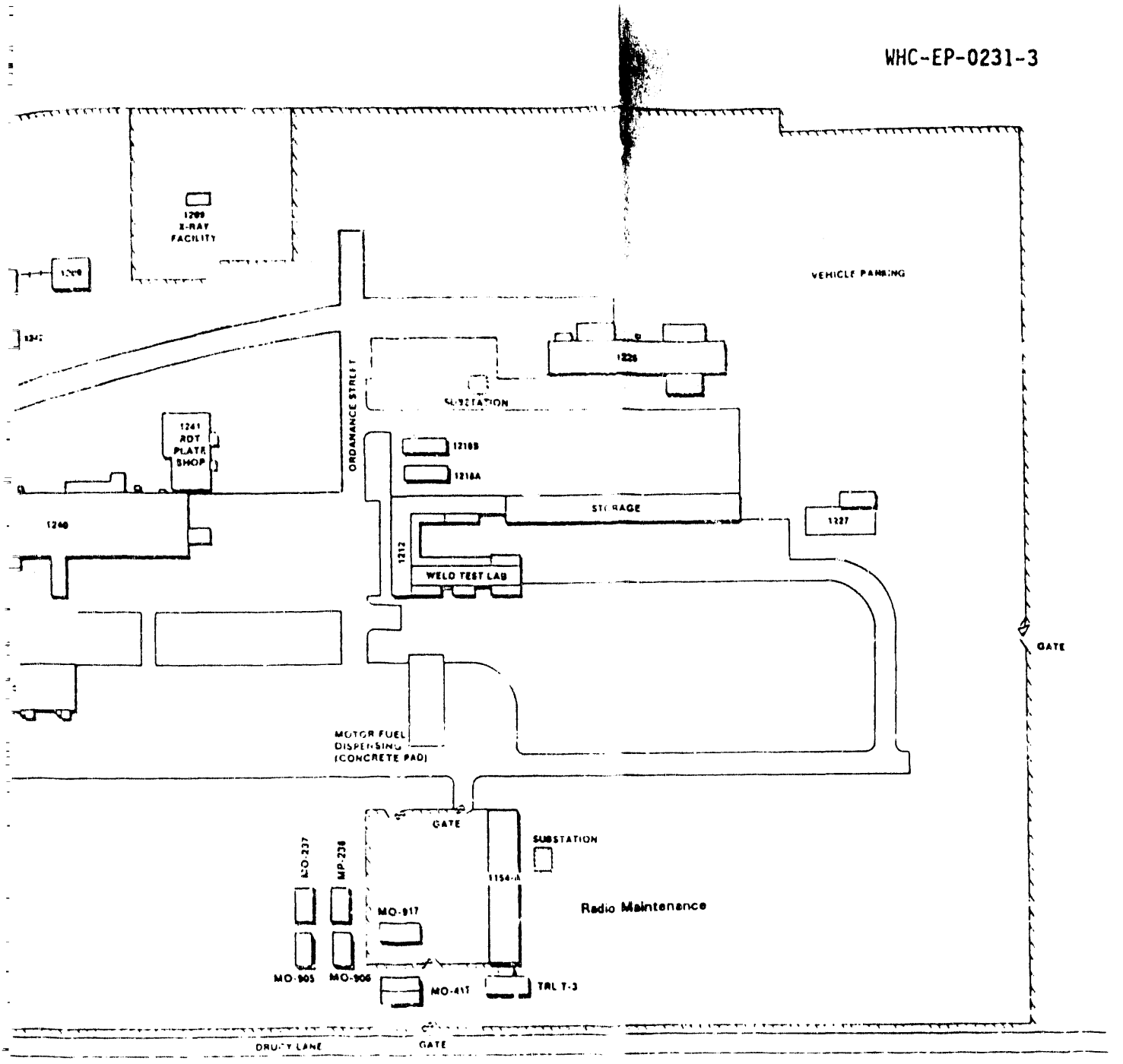
SCALE IN FEET

B-23/B-24



BUILDING LIST

BUILDING NUMBER	DESCRIPTION
1151-A	Radio Maintenance
1208	Paint Shop
1210	Laborers Shop
1212	G. A. Offices
1224	Automotive Shops
1226	Automotive Storage
1227	Carpenters Shop
1234	Storage
1236	Construction Storage
1240	Main Fabrication Shop
1242	Compressor Building
1250	Warehouse Storage
1252	Direct Warehouse
1253	Paint Storage
1254	Sheetmetal Shop
1256	Accounting and Purchasing Offices
1262	Main Office
1218A	Office Trailer
1218B	Office Trailer
1219A	Office Trailer
1219B	Office Trailer
1219C	Office Trailer
TR4	Industrial Relations

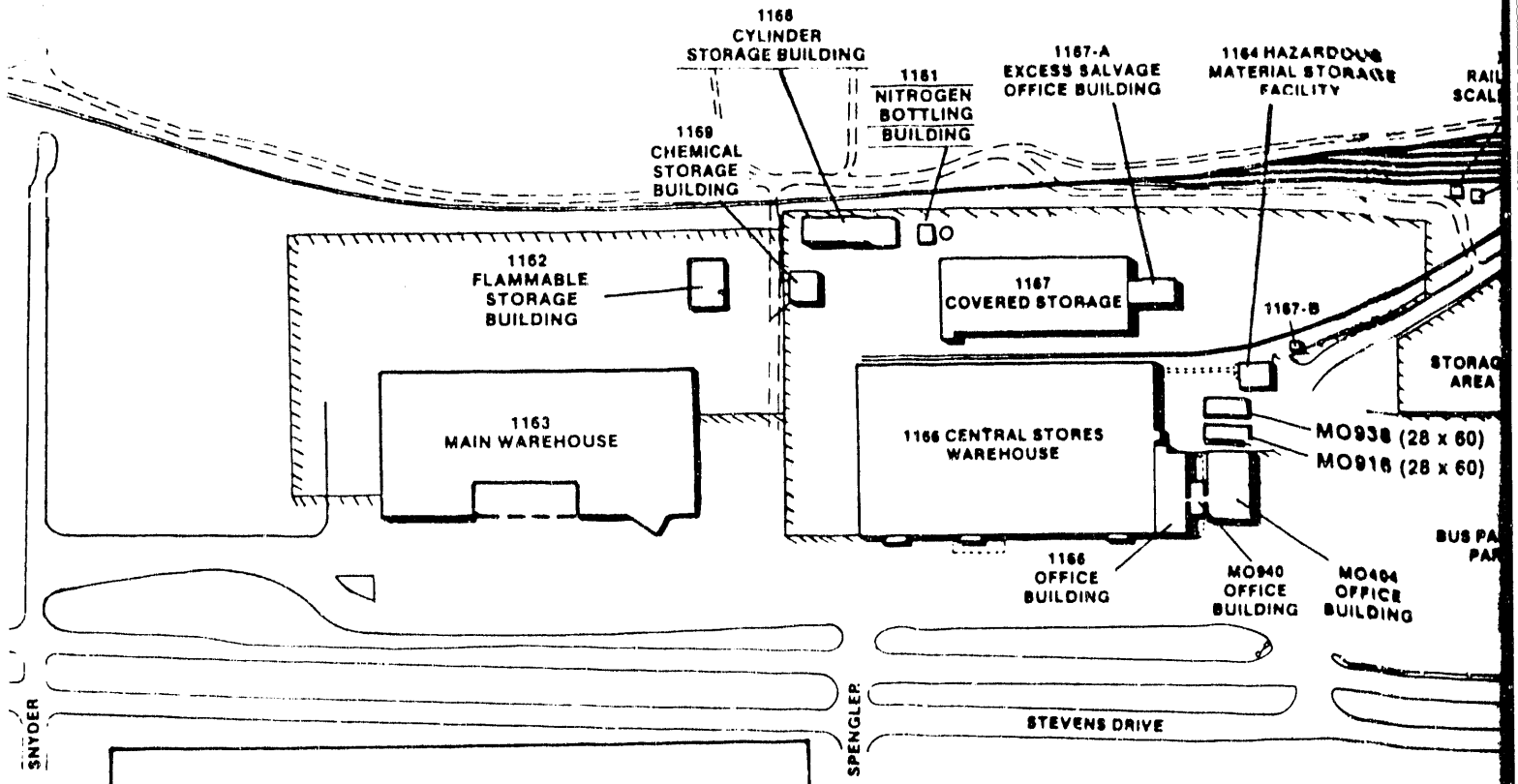


3000 AREA

REVISED 4/87

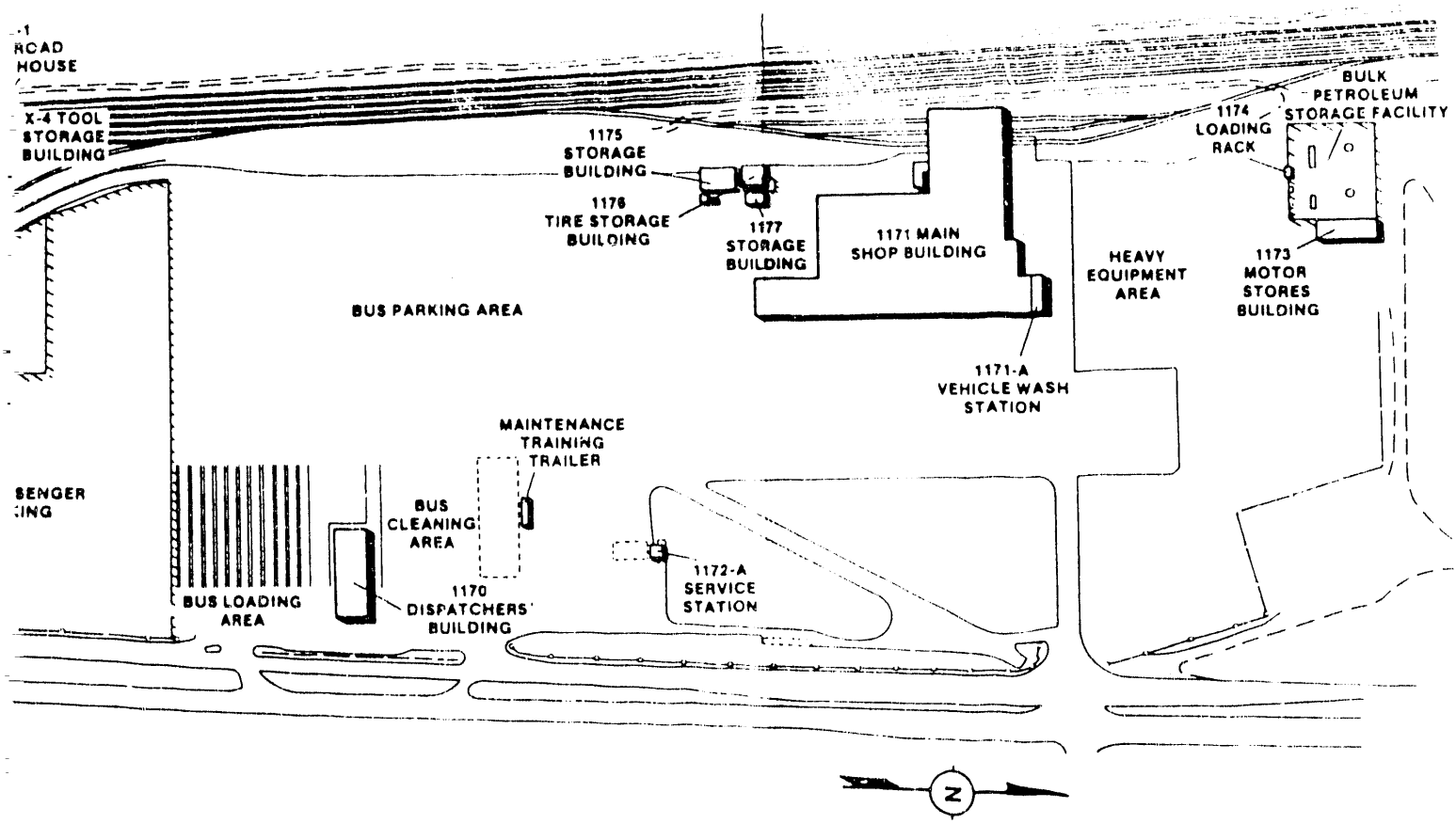
0 100 200 300

SCALE IN FEET



BUILDING LIST

BLDG. NO.	DESCRIPTION
1161	NITROGEN BOTTLING BLDG.
1162	FLAMMABLE STORAGE BLDG.
1163	MAIN WAREHOUSE
1164	HAZARDOUS MATERIAL STORAGE FACILITY
1166	CENTRAL STORES WAREHOUSE AND OFFICES
1167	STORAGE
1167-A	EXCESS SALVAGE OFFICE BUILDING
1168	CYLINDER STORAGE BUILDING
1169	CHEMICAL STORAGE BUILDING
1170	DISPATCHER'S BUILDING
1171	SHOP BUILDING
1171-A	VEHICLE WASH STATION
1172-A	SERVICE STATION
1173	MOTOR STORES BUILDING
1174	LOADING RACK
1175	STORAGE BUILDING
1176	TIRE STORAGE BUILDING
1177	STORAGE BUILDING



1100 AREA

SCALE IN FEET

REVISED 4/87

BUILDING LIST

BLDG. NUMBER	DESCRIPTION
701A	ELECTRICIANS SHOP
703	DOE OFFICE BUILDING
712	RECORDS CENTER
747	ENVIRONMENTAL HEALTH SCIENCES LAB/FILTER TEST FACILITY (HEHF)
747 A	WHOLE BODY OUNTER (PNL)
747A/T1	OFFICE TRAILER
747 B	OFFICE ANNEX (HEHF)
748	EMERGENCY DECONTAMINATION FACILITY (HEHF)

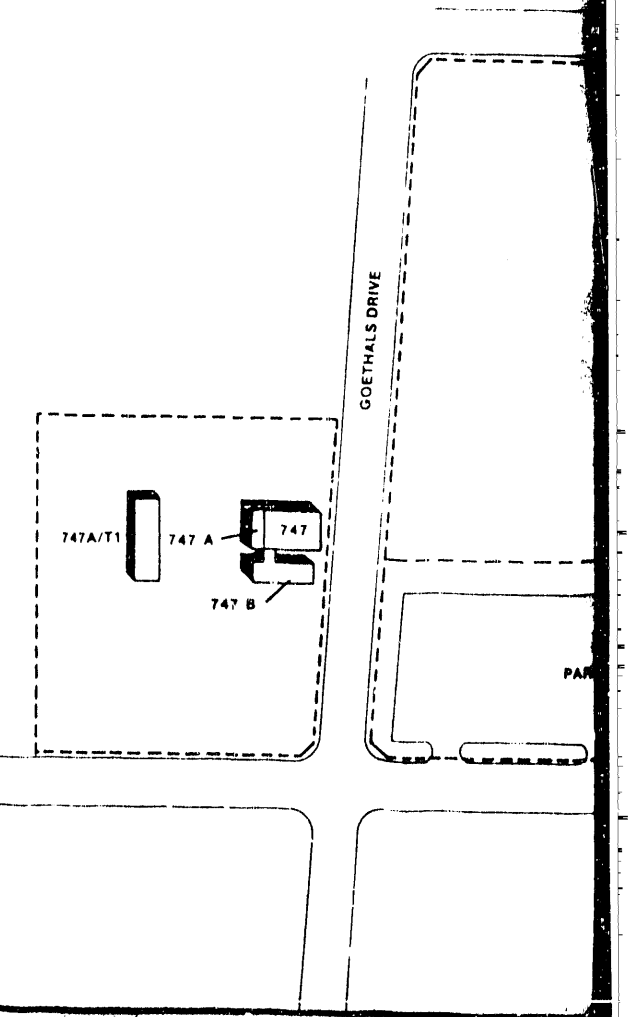
700 AREA

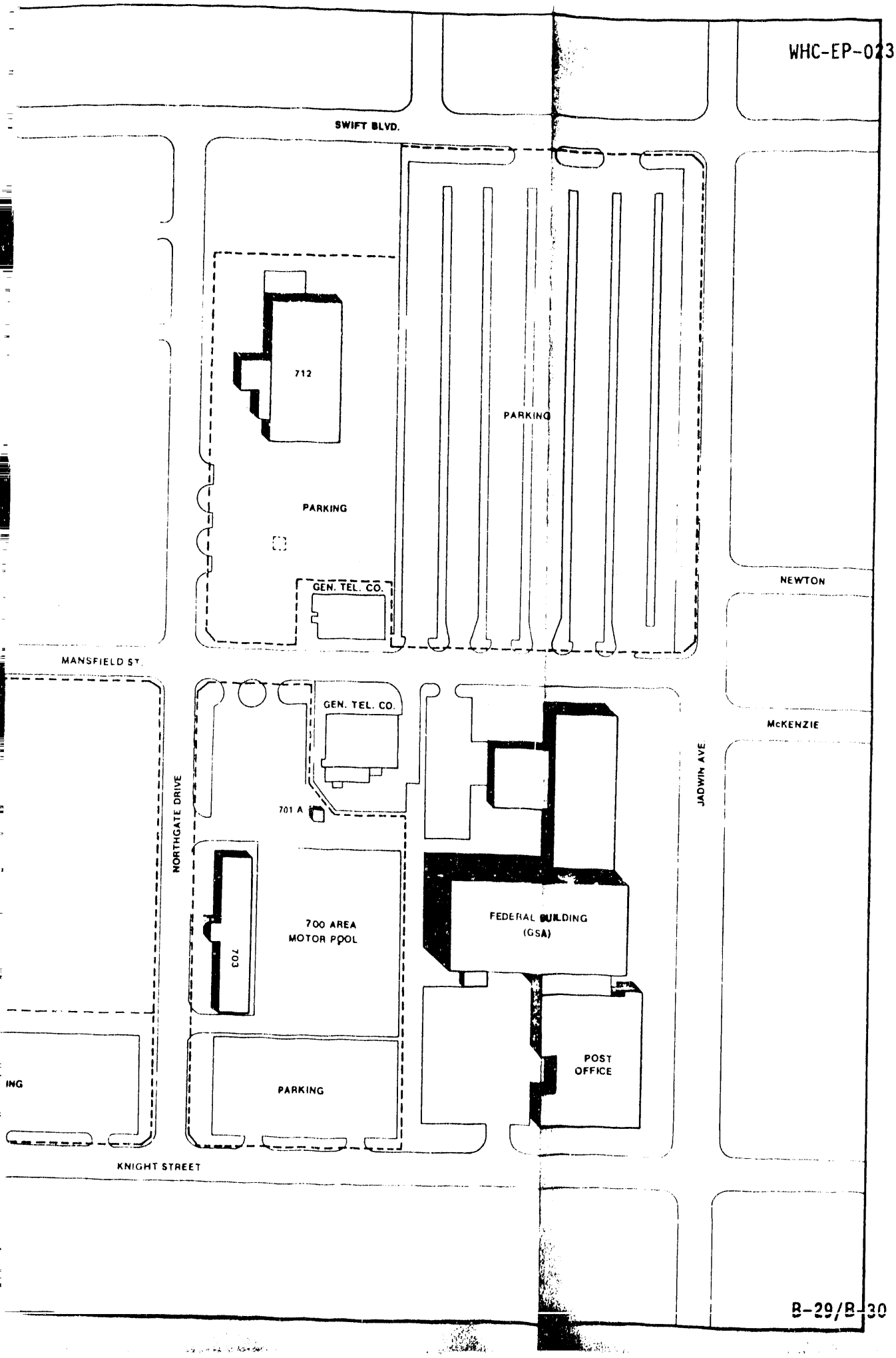
REVISED 2/86

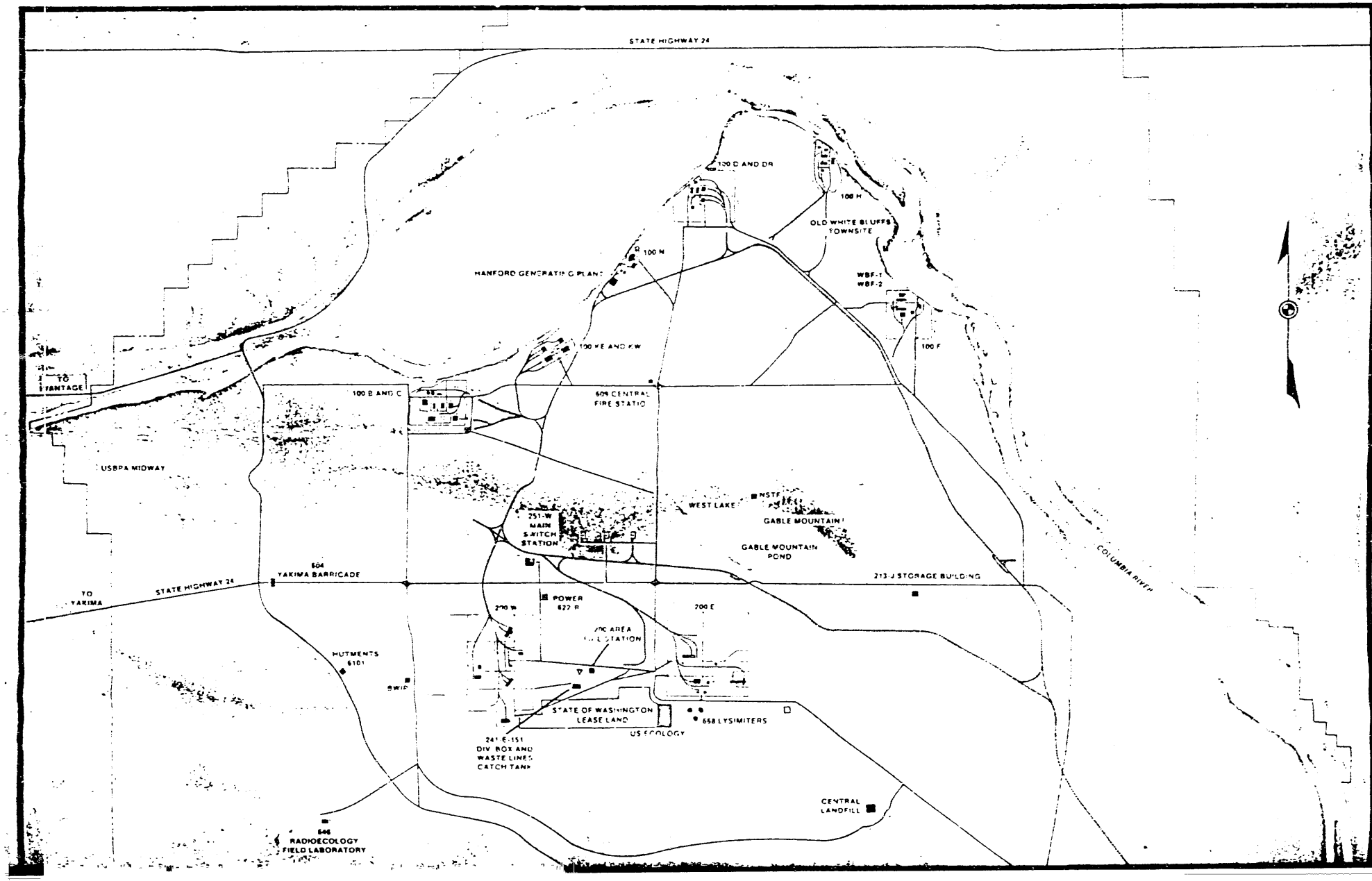
0 50 100 150 200 250

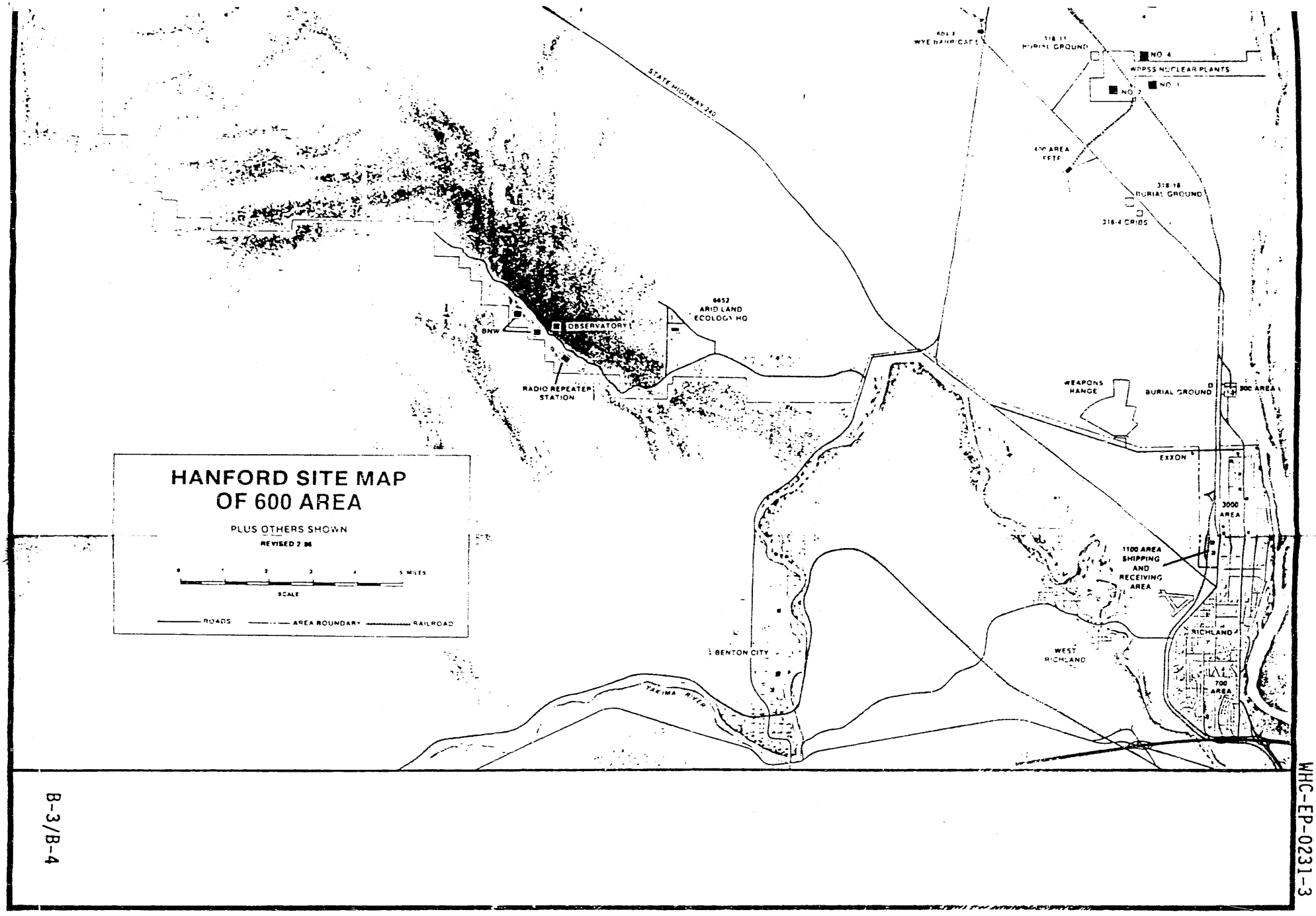
SCALE IN FEET

DOE PROPERTY



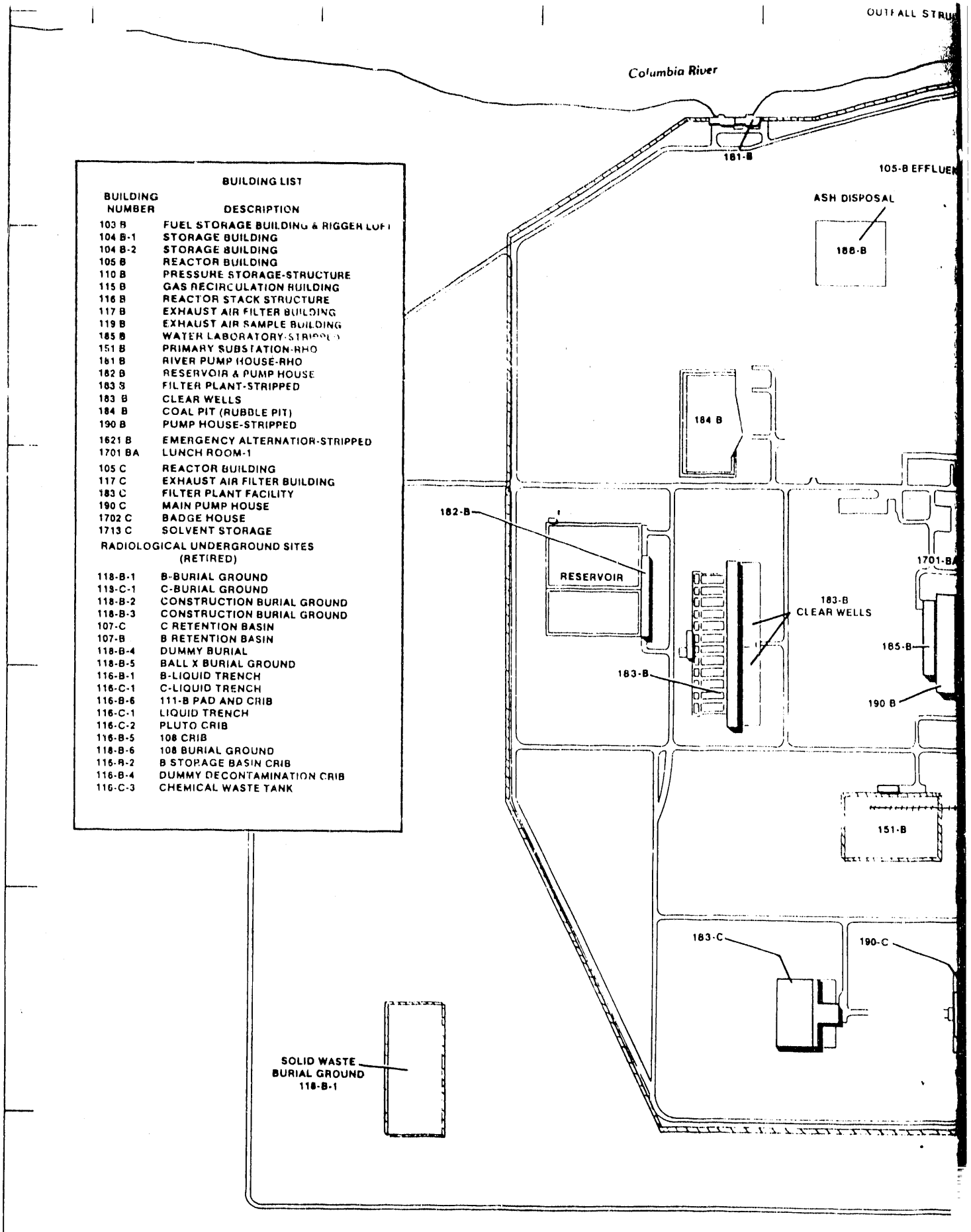

SWIFT BLVD.
712
PARKING
PARKING
GEN. TEL. CO.
NEWTON
MANSFIELD ST.
GEN. TEL. CO.
McKENZIE
NORTHGATE DRIVE
701 A
JADWIN AVE
703
700 AREA
MOTOR POOL
FEDERAL BUILDING
(GSA)
ING
PARKING
POST
OFFICE
KNIGHT STREET


STATE HIGHWAY 24
100 D AND DR
100 H
OLD WHITE BLUFFS TOWNSITE
100 N
HANFORD GENERATING PLANT
WBF-1
WBF-2
100 KE AND KW
100 F
TO RICHLAND
100 B AND C
609 CENTRAL FIRE STATION
USBPA MIDWAY
WEST LAKE
GABLE MOUNTAIN
GABLE MOUNTAIN POND
251-W MAIN SWITCH STATION
604 YAKIMA BARRICADE
213-J STORAGE BUILDING
COLUMBIA RIVER
TO YAKIMA
STATE HIGHWAY 24
POWER 622 R
200 W
200 E
200 AREA FIRE STATION
HUTMENTS 6101
STATE OF WASHINGTON LEASE LAND
US ECOLOGY
658 LYSIMETERS
241-E-151 DIV. BOX AND WASTE LINES CATCH TANK
CENTRAL LANDFILL
646 RADIOECOLOGY FIELD LABORATORY



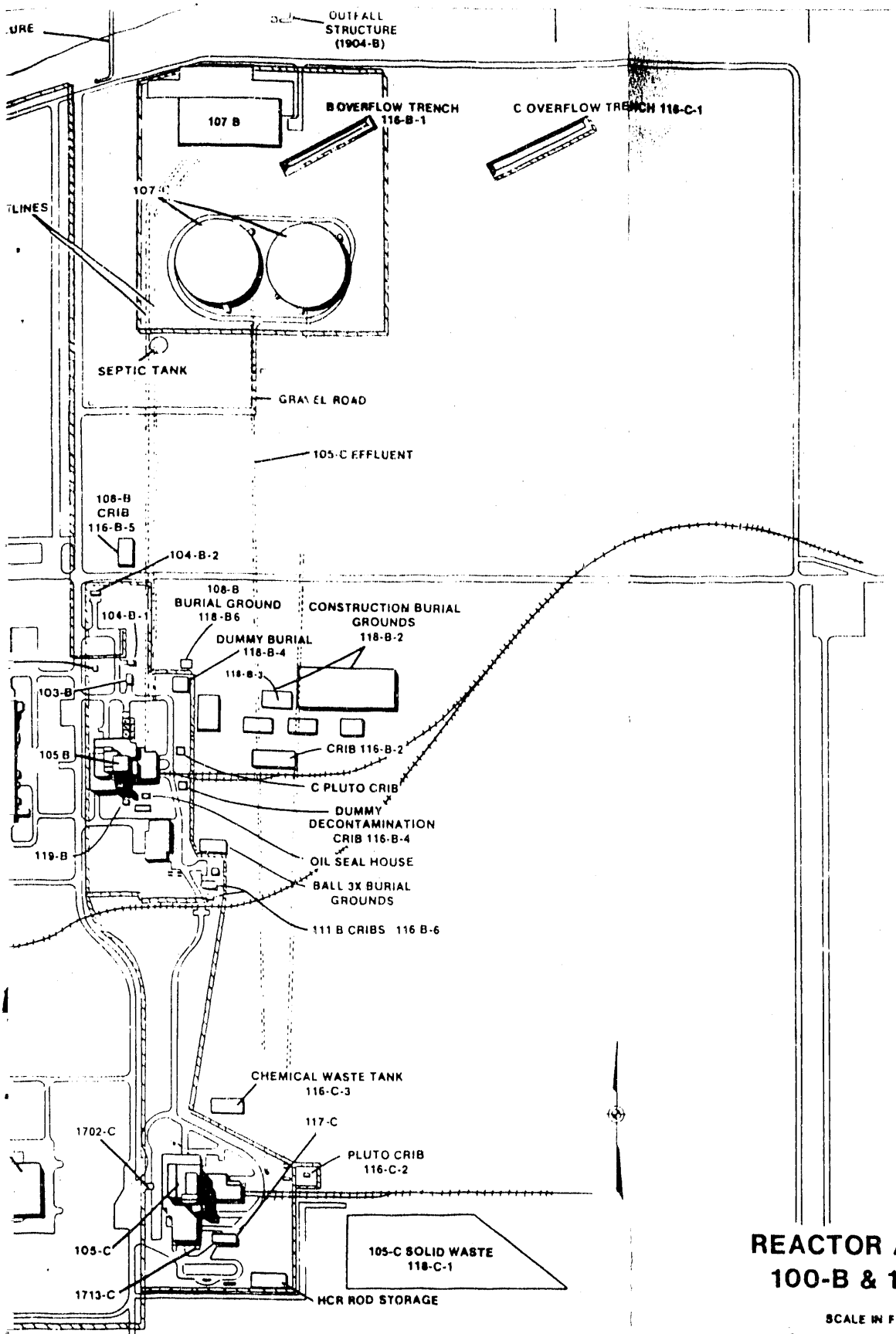
B-3/B-4

WHC-EP-0231-3



BUILDING LIST

BUILDING NUMBER	DESCRIPTION
103 B	FUEL STORAGE BUILDING & RIGGER LOFT
104 B-1	STORAGE BUILDING
104 B-2	STORAGE BUILDING
105 B	REACTOR BUILDING
110 B	PRESSURE STORAGE-STRUCTURE
115 B	GAS RECIRCULATION BUILDING
116 B	REACTOR STACK STRUCTURE
117 B	EXHAUST AIR FILTER BUILDING
119 B	EXHAUST AIR SAMPLE BUILDING
185 B	WATER LABORATORY-STRIPPED
151 B	PRIMARY SUBSTATION-RHO
181 B	RIVER PUMP HOUSE-RHO
182 B	RESERVOIR & PUMP HOUSE
183 B	FILTER PLANT-STRIPPED
183 B	CLEAR WELLS
184 B	COAL PIT (RUBBLE PIT)
190 B	PUMP HOUSE-STRIPPED
1621 B	EMERGENCY ALTERNATION-STRIPPED
1701 BA	LUNCH ROOM-1
105 C	REACTOR BUILDING
117 C	EXHAUST AIR FILTER BUILDING
183 C	FILTER PLANT FACILITY
190 C	MAIN PUMP HOUSE
1702 C	BADGE HOUSE
1713 C	SOLVENT STORAGE
	RADIOLOGICAL UNDERGROUND SITES (RETIRED)
118-B-1	B-BURIAL GROUND
118-C-1	C-BURIAL GROUND
118-B-2	CONSTRUCTION BURIAL GROUND
118-B-3	CONSTRUCTION BURIAL GROUND
107-C	C RETENTION BASIN
107-B	B RETENTION BASIN
118-B-4	DUMMY BURIAL
118-B-5	BALL X BURIAL GROUND
116-B-1	B-LIQUID TRENCH
116-C-1	C-LIQUID TRENCH
116-B-6	111-B PAD AND CRIB
116-C-1	LIQUID TRENCH
116-C-2	PLUTO CRIB
116-B-5	108 CRIB
118-B-6	108 BURIAL GROUND
116-B-2	B STORAGE BASIN CRIB
116-B-4	DUMMY DECONTAMINATION CRIB
116-C-3	CHEMICAL WASTE TANK

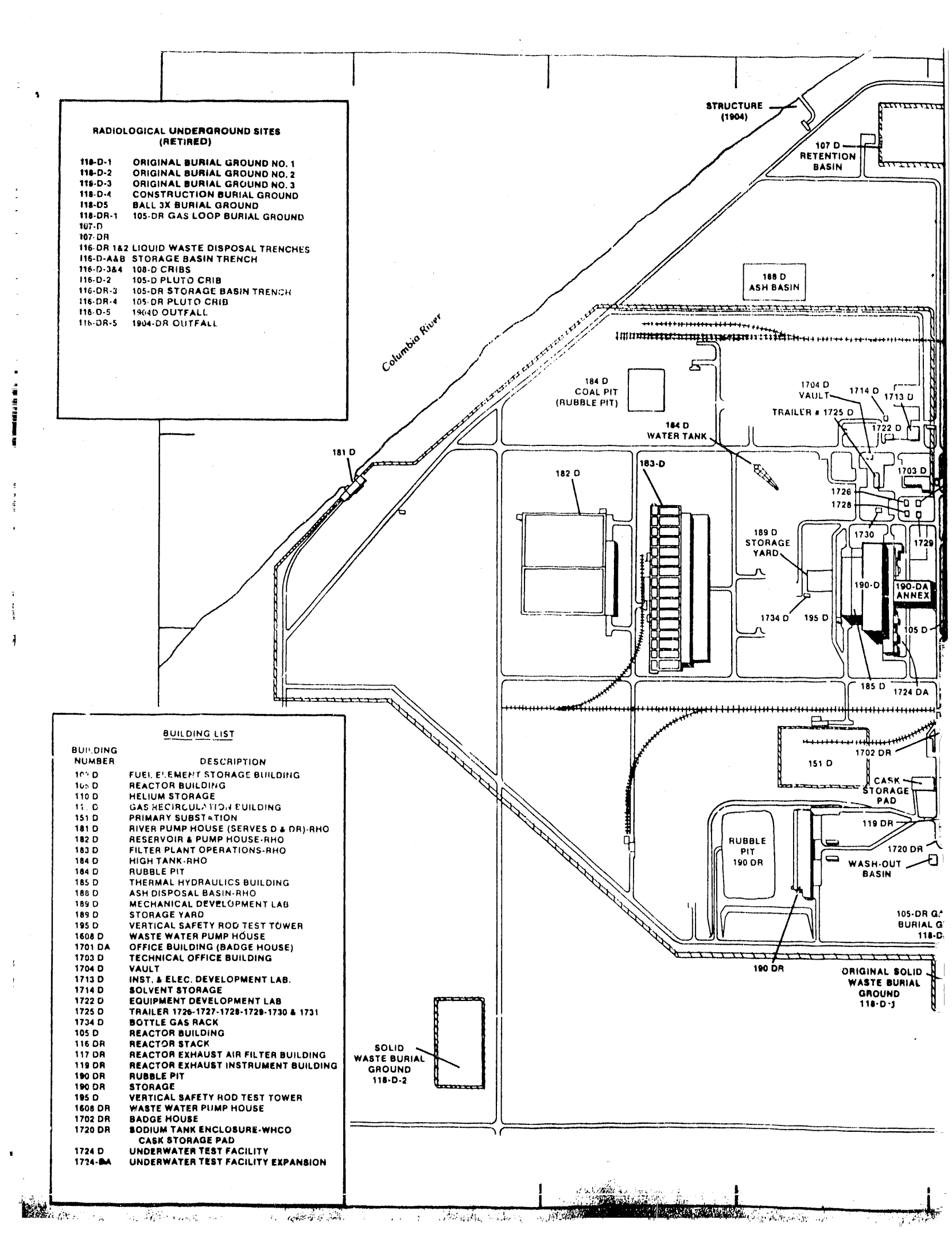


REACTOR AREAS 100-B & 100-C

SCALE IN FEET

0 200 400 600

REVISED 2/86

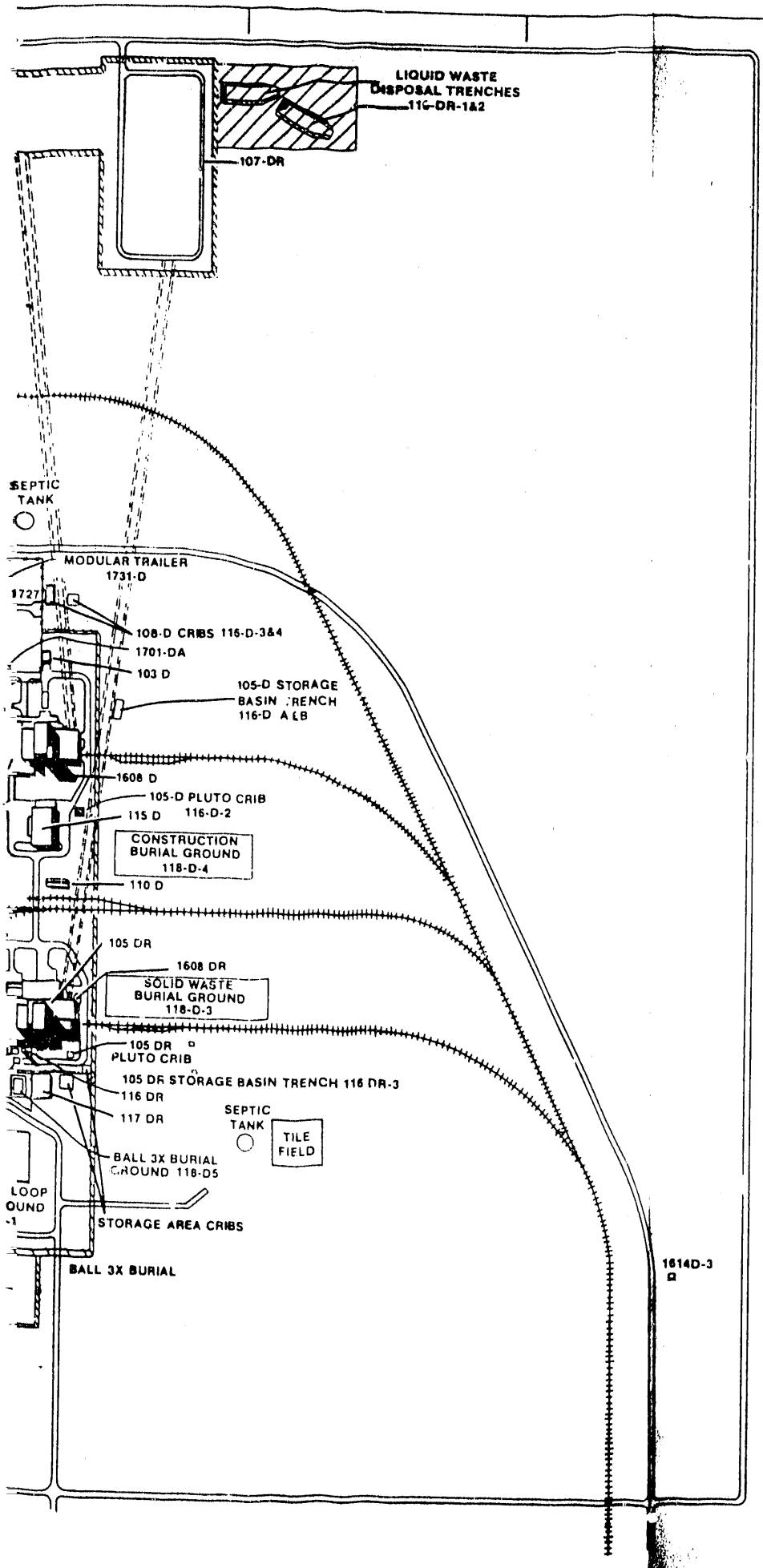


RADIOLOGICAL UNDERGROUND SITES (RETIRED)

118-D-1	ORIGINAL BURIAL GROUND NO. 1
118-D-2	ORIGINAL BURIAL GROUND NO. 2
118-D-3	ORIGINAL BURIAL GROUND NO. 3
118-D-4	CONSTRUCTION BURIAL GROUND
118-D5	BALL 3X BURIAL GROUND
118-DR-1	105-DR GAS LOOP BURIAL GROUND
107-D	
107-DR	
116-DR 1&2	LIQUID WASTE DISPOSAL TRENCHES
116-D-A&B	STORAGE BASIN TRENCH
116-D-3&4	108-D CRIBS
116-D-2	105-D PLUTO CRIB
116-DR-3	105-DR STORAGE BASIN TRENCH
116-DR-4	105-DR PLUTO CRIB
116-D-5	1904D OUTFALL
116-DR-5	1904-DR OUTFALL

BUILDING LIST

BUILDING NUMBER	DESCRIPTION
109 D	FUEL ELEMENT STORAGE BUILDING
105 D	REACTOR BUILDING
110 D	HELIUM STORAGE
11[illegible] D	GAS RECIRCULATION BUILDING
151 D	PRIMARY SUBSTATION
181 D	RIVER PUMP HOUSE (SERVES D & DR)-RHO
182 D	RESERVOIR & PUMP HOUSE-RHO
183 D	FILTER PLANT OPERATIONS-RHO
184 D	HIGH TANK-RHO
184 D	RUBBLE PIT
185 D	THERMAL HYDRAULICS BUILDING
188 D	ASH DISPOSAL BASIN-RHO
189 D	MECHANICAL DEVELOPMENT LAB
189 D	STORAGE YARD
195 D	VERTICAL SAFETY ROD TEST TOWER
1608 D	WASTE WATER PUMP HOUSE
1701 DA	OFFICE BUILDING (BADGE HOUSE)
1703 D	TECHNICAL OFFICE BUILDING
1704 D	VAULT
1713 D	INST. & ELEC. DEVELOPMENT LAB.
1714 D	SOLVENT STORAGE
1722 D	EQUIPMENT DEVELOPMENT LAB
1725 D	TRAILER 1726-1727-1728-1729-1730 & 1731
1734 D	BOTTLE GAS RACK
105 D	REACTOR BUILDING
116 DR	REACTOR STACK
117 DR	REACTOR EXHAUST AIR FILTER BUILDING
119 DR	REACTOR EXHAUST INSTRUMENT BUILDING
190 DR	RUBBLE PIT
190 DR	STORAGE
195 D	VERTICAL SAFETY ROD TEST TOWER
1608 DR	WASTE WATER PUMP HOUSE
1702 DR	BADGE HOUSE
1720 DR	SODIUM TANK ENCLOSURE-WHCO CASK STORAGE PAD
1724 D	UNDERWATER TEST FACILITY
1724-DA	UNDERWATER TEST FACILITY EXPANSION



REACTOR AREAS
100-D & 100-DR

REVISED 2/86

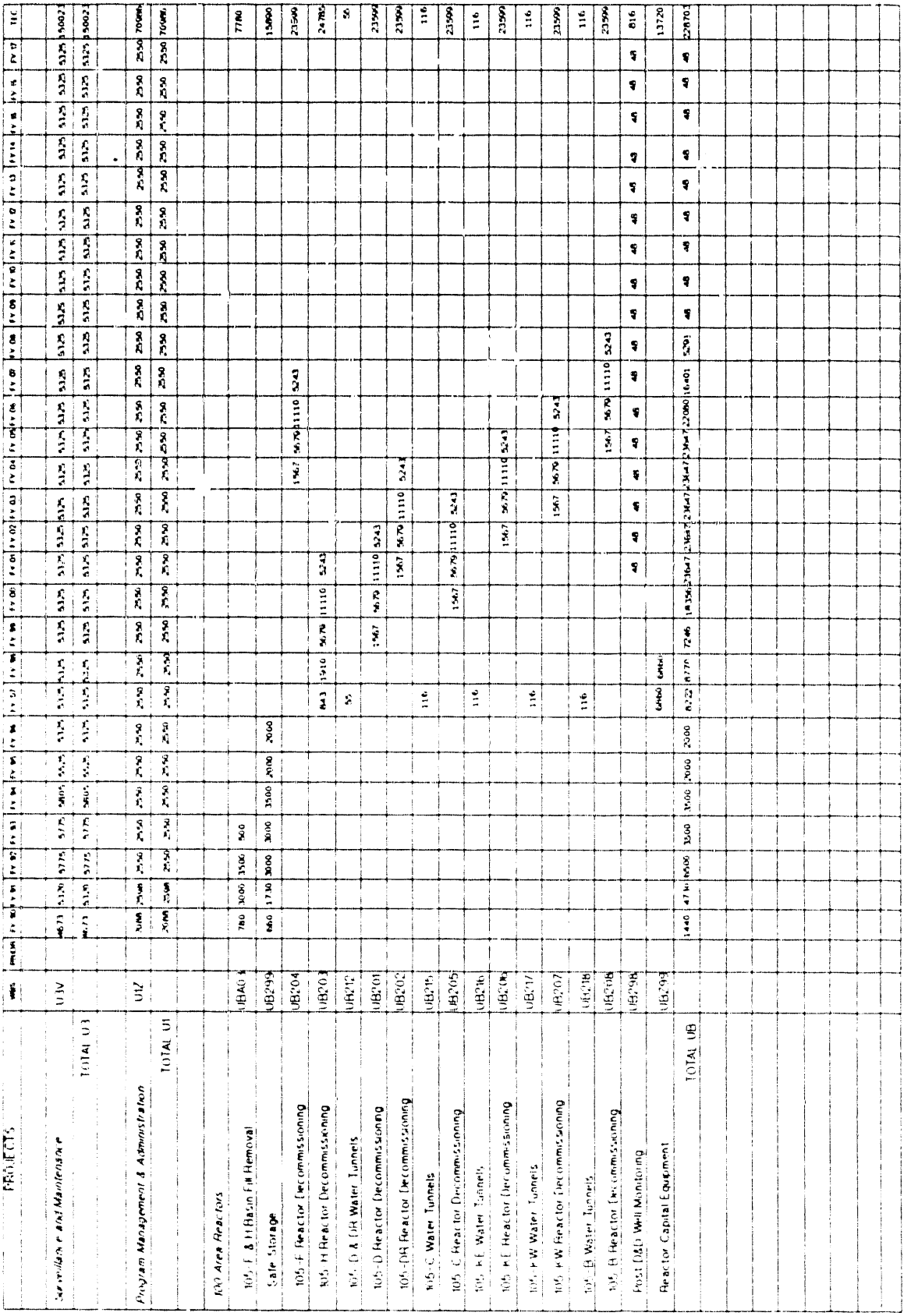
0 200 400 600

SCALE IN FEET

APPENDIX C

LONG-RANGE COST/SCHEDULE PROJECTION

Table 1. Hanford Decommissioning Baseline Long-Range Projection. ($000) (sheet 1 of 7)



PROJECTS	WBS	PRIOR	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	TTC
Surveillance and Maintenance	U1V		4673	5125	5775	5775	5600	5775	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	56023
TOTAL U1			4673	5125	5775	5775	5600	5775	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	5125	56023
Program Management & Administration	U1Z		3080	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	70080
TOTAL U1			3080	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	2560	70080
100 Area Reactors																															
105-F & H Basin Fill Removal	UBA01		780	3085	3586	960																									7780
Sale Storage	UB299		860	1730	3000	3000	3500	3000	2060																						15090
105-F Reactor Decommissioning	UB204																1567	5679	11110	5243											23599
105-H Reactor Decommissioning	UB203											843	1910	5679	11110	5243															24785
105-D & DR Water Tunnels	UB212											55																			55
105-D Reactor Decommissioning	UB201													1567	5679	11110	5243														23599
105-DR Reactor Decommissioning	UB202														1567	5679	11110	5243													23599
105-C Water Tunnels	UB215											116																			116
105-C Reactor Decommissioning	UB205													1567	5679	11110	5243														23599
105-KE Water Tunnels	UB216											116																			116
105-KE Reactor Decommissioning	UB206														1567	5679	11110	5243													23599
105-KW Water Tunnels	UB217											116																			116
105-KW Reactor Decommissioning	UB207															1567	5679	11110	5243												23599
105-B Water Tunnels	UB218											116																			116
105-B Reactor Decommissioning	UB208																1567	5679	11110	5243											23599
Post D&D Well Monitoring	UB298																				45	45	45	45	45	45	45	45	45	45	816
Reactor Capital Equipment	UB299											6460	6460																		13720
TOTAL UB			1640	4715	6586	3960	3500	3066	2060	2560	2560	8272	8770	7246	18356	23647	23647	23647	23647	23647	2605	2605	2605	2605	2605	2605	2605	2605	2605	2605	228703

Table 1. Hanford Decommissioning Baseline Long-Range Projection. ($000) (sheet 2 of 7)

PROJECTS	WBS	Inactive	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	TEC
100 Area Ancillaries																															
116-D Exhaust Air Stack	UA101					270																									270
116-DR Exhaust Air Stack	UAT02					270																									270
117-DR Exhaust Air Filter Building	UAA04					247																									247
119-DR Exhaust Air Sampling Building	UAA03					15																									15
108-F Biology Laboratory Building	UAB01					3296																									3296
103-D Unirradiated Fuel Element Storage	UAA01					39																									39
115-B/C Gas Recirculation Building COMPLETED	UAA27	768																													768
115-KE Gas Recirculation Building	UAA06				1080																										1080
115-KW Gas Recirculation Building	UAA07						1103																								1103
117-C Exhaust Air Filter Building COMPLETED	UAA32	281																													281
117-KE Exhaust Air Filter Building	UAA08				247																										247
117-KW Exhaust Air Filter Building	UAA09				247																										247
126-B Exhaust Air Stack	UAT03				260																										260
116-KE Exhaust Air Stack	UA 04					463																									463
116-KW Exhaust Air Stack	UAT05					463																									463
104-B-1 Tritium Vault	UA901					27																									27
104-B-2 Tritium Laboratory	UA902					27																									27
190-KE Exhaust Air Sampling Building	UAA05					15																									15
119-KW Exhaust Air Sampling Building	UAA02					15																									15
1706-KE/KEL/KE4 Test Facility	UAH01					408	3255																								3663
109-B Unirradiated Fuel Storage	UA010				37																										37
181-B Decontamination Station	UA903				180																										180
TOTAL UA		1049			2051	5655	3255	1103																							13013

Table 1. Hanford Decommissioning Baseline Long-Range Projection. ($000) (sheet 3 of 7)

PROJECTS	WBS	PMDM	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	TEC
100 Area Effluents																													
1904-B1/B2 Effluent Water Outfall Structure	UCA05																				235								235
1904-C Effluent Water Outfall Structure	UCA07																				235								235
1908-K Effluent Water Outfall Structure	UCA06																				457								457
100-B/C Effluent Lines	UC403		243		298																								541
100-KE/KW Effluent Lines	UC404		208																										208
100-B/C, KE/KW Effluent River Lines	UC405		385	152					562																				1099
1904-F Effluent Water Outfall Structure	UCA01																				235								235
1904-H Effluent Water Outfall Structure	UCA02																				235								235
1904-D Effluent Outfall Structure	UCA03																				235								235
1904-DR Effluent Outfall Structure	UCA04																				235								235
100-F, H, D & DR River Lines	UC401							551																					551
100-F, H, D & DR Effluent Lines	UC402																				315								315
TOTAL UC			836	152	298			551	562												1242	940							4671

Table 1. Hanford Decommissioning Baseline Long-Range Projection.
($000) (sheet 4 of 7)

PROJECTS	WBS	PRIOR	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	TEC
Hanford Excess Support Facilities																															
1701-FA Gate House	UVP02								13																						13
1720-HA Arsenal	UV102								5																						5
1713-H Warehouse	UVA04																				404										404
1702-DR Area Badge House	UVP04								7																						7
1713-KER Warehouse	UVA03																				18										18
167-K Crosstie Tunnel Building	UV405																				5	5									5
166-AKE Oil Storage Facility	UVA05																				6	6									6
1702-KE Badge House	UVP05																				6	6									6
185-B Water Treatment Plant	UVA02					248																									248
1702-KW Badge House	UVP06																			9											9
1714-KW Warehouse	UVA06																			16											16
1714-C Solvent Storage	UVA01								5																						5
182-K Emergency Water Reservoir & Pumphouse	UV404																				75										75
110-KE Gas Storage Facility	UV406																					304									304
110-KW Gas Storage Facility	UV407																					304									304
1702-C Area Badge House	UVP03								5																						5
190-B Main Pumphouse	UV402						277	525	309																						1636
1701-BA Area Badge House	UVP01																				9										9
183-C Filter Plant	UV401								181																						181
165-KW Power Control Building	UV403																			542											542
Engineering & Planning	UVZ99				525																										525
TOTAL UV					525	525	525	525	525											567	523	608									4323
200 Area Storage Vaults (Cost is for both vaults)																		1103	1103	1103	1196										4505
244-UR Vault	UUU01																														
241-WR Vault	UUU02																														
TOTAL UU																		1103	1103	1103	1196										4505
																		1103	1103	1670	1719	608									

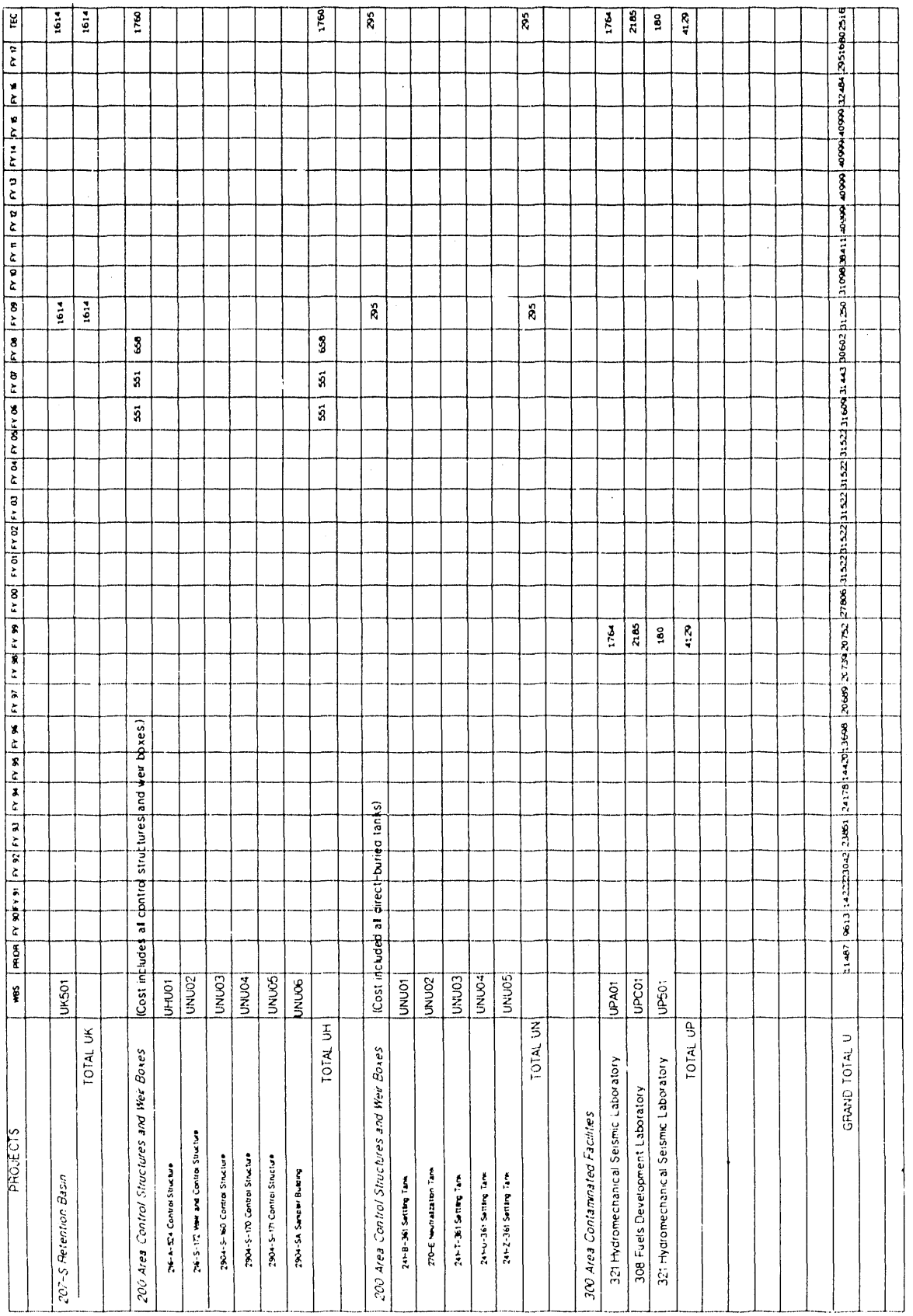
Table 1. Hanford Decommissioning Baseline Long-Range Projection.
($000) (sheet 5 of 7)

PROJECTS	WBS	PMOM	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	TEC
200 Area Major Process Support Buildings																															
201-C Process Building (Cost includes all buildings)	UE503	9950	1200	1574	2465	1937	3082	100					1575																		21883
215-C Gas Preparation Structure																															
291-C Fan House ALREADY DEMOLISHED																															
2707-C Storage and Change House ALREADY DEMOLISHED																															
241-CX-70 Tank																															
241-CX-71 Tank																															
241-CX-72 Tank and Vault																															
291-C-1 Stack ALREADY DEMOLISHED																															
296-C-2 Stack																															
233-S Plutonium Concentration Facility*	UE502		212		150	165	500	1800	3000	4000	3532																			11550
233-SA Exhaust Air Filter Building																															
296-S-7 Stack																															
*(Cost is for all three facilities)																															
233-S Capital Equipment	UE299					500																									500
224-B Plutonium Concentration Facility	UE505	488			2100	3192	4061	817																							
212-N Storage Building	UEA10																					1036									1036
212-P Storage Building	UEA11																					1036									1036
212-R Storage Building	UEA12																					1036									1036
241-SX-401 Condenser Loadout Facility	UE401																													1250	1250
241-SX-402 Condenser Loadout Facility	UE402																													1250	1250
202-A Canyon Building (REDOX) (Cost includes all buildings)	UE501																			2613	5513	5513	5513	10251	16538	16538	16538	16538	16538	19093	134860
291-S Fan House and Filter																															
296-S-Jet Pit House																															
292-S Offgas Treatment Facility																															
271-S Stack Monitoring Building																															
276-S Sand Filter Sampler																															
296-S-1 Stack																															
296-S-1 Stack																															
296-S-2 Stack																															
296-S-4 Stack																															
296-S-4 Stack																															
SUBTOTAL UE		10438	1412	1574	4715	5704	8543	2717	3000	4000	3532	0	1575	0	0	0	0	0	0	5513	5513	8621	5513	10251	16538	16538	16538	16538	16538	21593	187760

Table 1. Hanford Decommissioning Baseline Long-Range Projection.
($000) (sheet 6 of 7)

PROJECTS	WBS	PRIOR	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	TEC
200 Area Major Process/Support Buildings - Cont																															
232-Z Waste Incinerator Facility	UEA04											507																			507
221-U Canyon Building (U Plant) Cost includes all buildings	UEA02																					4956	1051	14538	16538	16538	16538	16538	8023		126720
296-U Solvent Handling Facility																															
271-U Office Building																															
291-U Fan House and Filter Building																															
296-U-1 Stack																															
296-U-6 Stack																															
296-U-10 Stack																															
241-C-801 Cesium Loadout Facility	UEA03																					565									565
276-S Solvent Handling Facility Cost includes all buildings	UEA01											798																			798
296-S-12 Stacks																															
276-S-141 Hexone Storage Tank																															
276-S-142 Hexone Storage Tank																															
222-T Office Building	UEB01																				1775										1775
205-S Silica Gel	UEA06																				371										371
241-A-431 Tank Farm Ventilation Building	UEA07																				718										718
242-B Facility	UEH01																						1274								1274
222-U Office Building	UEB02																				1775										1775
242-B Facility	UEA09											197																			197
242-B Facility	UEA08																						1985								1985
242-B Facility	UEK01									41																					41
SUBTOTAL UE (page 2)		0	0	0	0	0	0	0	0	41	0	1502	0	0	0	0	0	0	0	0	9695	11078	1581	18523	16538	16538	16538	16538	8023	0	130726
SUBTOTAL UE (page 1)		10438	1412	1574	4715	5704	8543	2717	3000	4000	3532	0	1575	0	0	0	0	0	0	5513	5513	86.21	5513	11025	16538	16538	16538	16538	16538	21593	187760
TOTAL UE		10438	1412	1574	4715	5704	8543	2717	3000	4041	3532	1502	1575	0	0	0	0	0	0	5513	15208	19699	21325	29548	33076	33076	33076	33076	24561	21593	318486

Table 1. Hanford Decommissioning Baseline Long-Range Projection.
($000) (sheet 7 of 7)



PROJECTS	WBS	PRIOR	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	TEC
207-S Retention Basin	UK501																					1614									1614
TOTAL UK																						1614									1614
200 Area Control Structures and Wet Boxes	(Cost includes all control structures and wet boxes)																		551	551	658										1760
246-A-524 Control Structure	UHU01																														
246-S-172 Weir and Control Structure	UNU02																														
2904-S-160 Control Structure	UNU03																														
2904-S-170 Control Structure	UNU04																														
2904-S-171 Control Structure	UNU05																														
2904-SA Sampler Building	UNU06																														
TOTAL UH																			551	551	658										1760
200 Area Control Structures and Wet Boxes	(Cost included all direct-buried tanks)																					295									295
241-B-361 Settling Tank	UNU01																														
270-E Neutralization Tank	UNU02																														
241-T-361 Settling Tank	UNU03																														
241-U-361 Settling Tank	UNU04																														
241-Z-361 Settling Tank	UNU05																					295									295
TOTAL UN																						295									295
300 Area Contaminated Facilities																															
321 Hydromechanical Seismic Laboratory	UPA01											1764																			1764
308 Fuels Development Laboratory	UPC01											2185																			2185
321 Hydromechanical Seismic Laboratory	UP501											180																			180
TOTAL UP												4129																			4129
GRAND TOTAL U		31487	9613	14322	23042	23861	24178	14420	13698	20689	25739	20752	27806	31522	31522	31522	31522	31522	31609	31443	30602	31250	31098	30411	40000	40000	40000	32484	29516	80251	6

END

DATE FILMED

12/21/90