

## Facility Decommissioning Evaluation Building 484-4D, Powerhouse Maintenance Facility

**This is a Simple Model Decommissioning per Facility Disposition Manual 1C**

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## Introduction

This document contains an evaluation of available existing information about a facility that is slated for decommissioning. This evaluation screens the project to determine whether it is appropriate to conduct the decommissioning under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or to use a simpler graded approach.

This Facility Decommissioning Evaluation (FDE) consists of three sections. Part 1 contains a description of the project scope, including a brief summary of the purpose and history of the facility and photographs of the structures that are part of the project. Part 2 encompasses a series of questions, the answers to which determine the decommissioning model (CERCLA Model, Integrated Sampling Model, or Simple Model) that will be used. The three graded approach models are described in Facility Disposition Manual 1C, Procedure 501. Part 2 also includes a justification for the answers to each question. Part 3 is a list of references that were used for the evaluation.

## Conclusion

A review of the existing characterization data, process/building history, sample data and walk downs of the facility, supports the determination that this building and its ancillary structures meet the criteria of a Clean Building, Simple Model as described in Facility Disposition Manual 1C, Procedure 501. This decision is supported by the documentation found throughout the body of this document. No chemical or hazardous radioactive contaminants are associated with this structure.

## Part 1. Project Scope

### Scope

This Evaluation has been prepared in accordance with requirements found in Facility Disposition Manual 1C, Procedure 502, "Preparing Decommissioning Decision Documents". The scope of this evaluation includes Building 484-4D, Powerhouse Maintenance Facility and the following ancillary structures:

- Compressed gas cylinder storage area;
- Lay-down yard; and
- North side storage (two small buildings with covered area between).

The proposed decommissioning end-state for this facility is demolition to the building slab.

The described decommissioning activities are not the final area closure actions. The decommissioning of a building is intended to reduce landlord costs, increase safety by removing excess facilities and reduce the potential for releases of hazardous substances to the environment.

## Facility Description

Building 484-4D is in the northern section of 400-D Area of the Savannah River Site (SRS) (Figure 1). Building 484-4D is metal frame construction with a metal roof, constructed on a concrete slab (Figure 2). The building consists of spaces for mechanical maintenance, electrical and instrumentation maintenance, welding, miscellaneous storage, storage and distribution of tools, and personnel spaces, including office space, restrooms, locker rooms and break facilities. Construction of the facility was completed in 1981. The facility is 11,694 square feet (see Figure 3 for layout) and had climate controls, plumbing for domestic water and plumbing for sanitary sewage. Most of the sanitary sewer connections outside the restrooms are hub connections above the slab (Figure 4). The main shop, the welding shop and the electrical shop were not climate controlled. The remaining spaces were climate controlled and insulated. All fluorescent lamps, light bulbs, exit signs, heating, ventilation, and air conditioning (HVAC) units, etc. were removed during deactivation (refer to “Deactivation Project Final Report Building 484-D Powerhouse and Ancillary Buildings”, V-PCOR-D-00042, Reference 6).

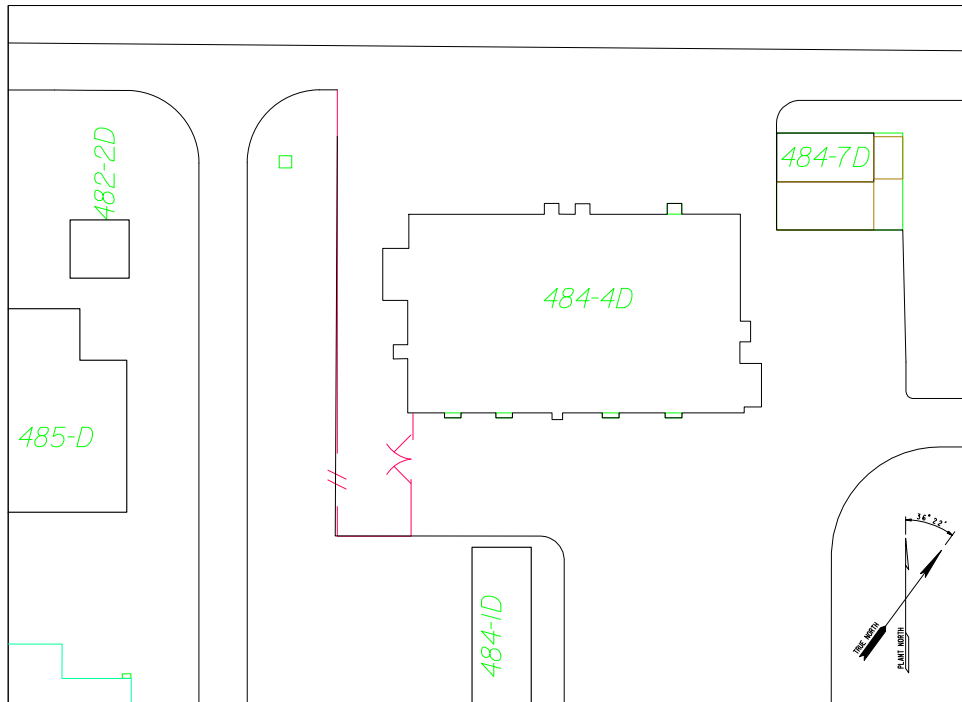
The main shop is approximately (~) 18.5-feet (ft) by 49.5-ft and 15-ft to 19-ft high (building roof height). The main shop contained common stationary industrial tools, such as an engine lathe, grinder, drill presses, band saw, etc. The main shop had a self-contained solvent rinse station that used Safety Kleen™ parts cleaner (hydrotreated kerosene). There was a 95-gallon (gal) poly collection bin for used aerosol cans. There was a gantry crane located in the overhead of the shop. Along the north wall of the shop were two (2) flammable storage cabinets. There are numerous small oil stains on the floor, typically around tools and/or workstations (Figure 4). On the south wall of the main shop is a 10-ft roll-up door, as well as a normal swinging door for personnel use. The remainder of the building can be easily accessed via the main shop. Plant air and communications from the Powerhouse were provided to the building at the southeast corner of the main shop.

Storage Area 1 is ~4 ft by 6 ft with no ceiling. The storage room contained water, coveralls, welding helmets, etc., and has been completely emptied of everything. Storage Area 1 is accessible only from the main shop.

The lunch room is ~24.5 ft by 43 ft with a suspended ceiling at ~8- ft height. The lunchroom contained cooking ranges, a sink, refrigerators and microwaves. There were also tables and chairs, as well as a computer desk with computer, but these have all been removed. The lunch room is accessible from the passageway in the center of the building and a door in the southwest corner of the room that leads to the outside.

The electrical shop is ~23.5 ft by 43 ft. There is a small, sectioned off area which was used as an office. The electrical shop is a typical electronics and instrumentation shop. It contained various tool bins for spare parts and equipment, work benches, tool lockers and test gear. The office within the electrical shop is ~12 ft by 12 ft (included in the dimensions of the electrical room). There is a sink on the west side of the electrical shop. The office contained standard office supplies and furniture which have been removed. The electrical shop is accessible from the passageway in the center of the building, as well as a door in the southeast corner of the room that leads to the outside. Electrical power to the facility was disconnected during building

deactivation (refer to Deactivation Project Final Report Building 484-D Powerhouse and Ancillary Buildings”, V-PCOR-D-00042, Reference 6).



**Figure 1. Building 484-4D Maintenance Facility Area**



**Figure 2. Building 484-4D Maintenance Facility**

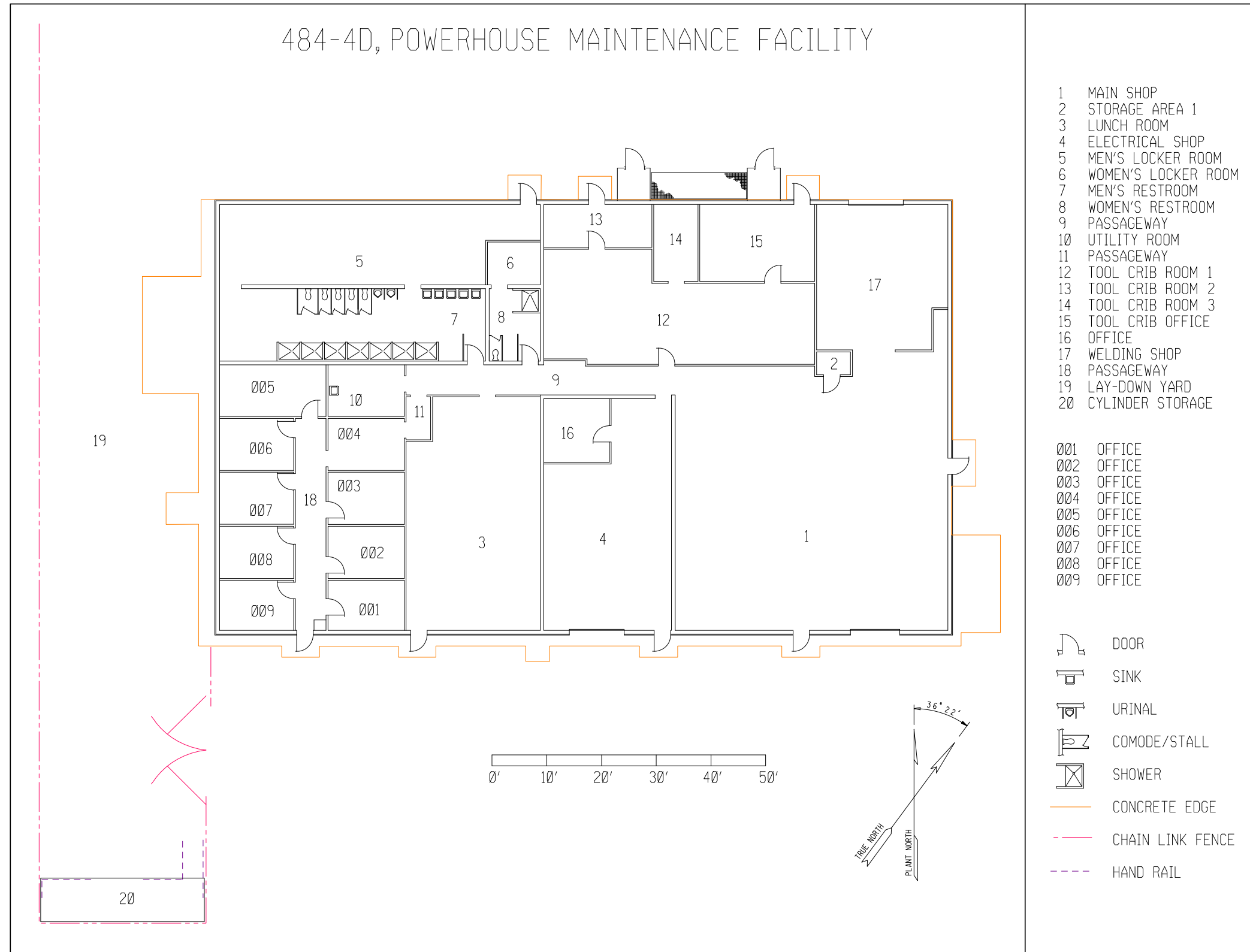


Figure 3. 484-4D Maintenance Facility Layout

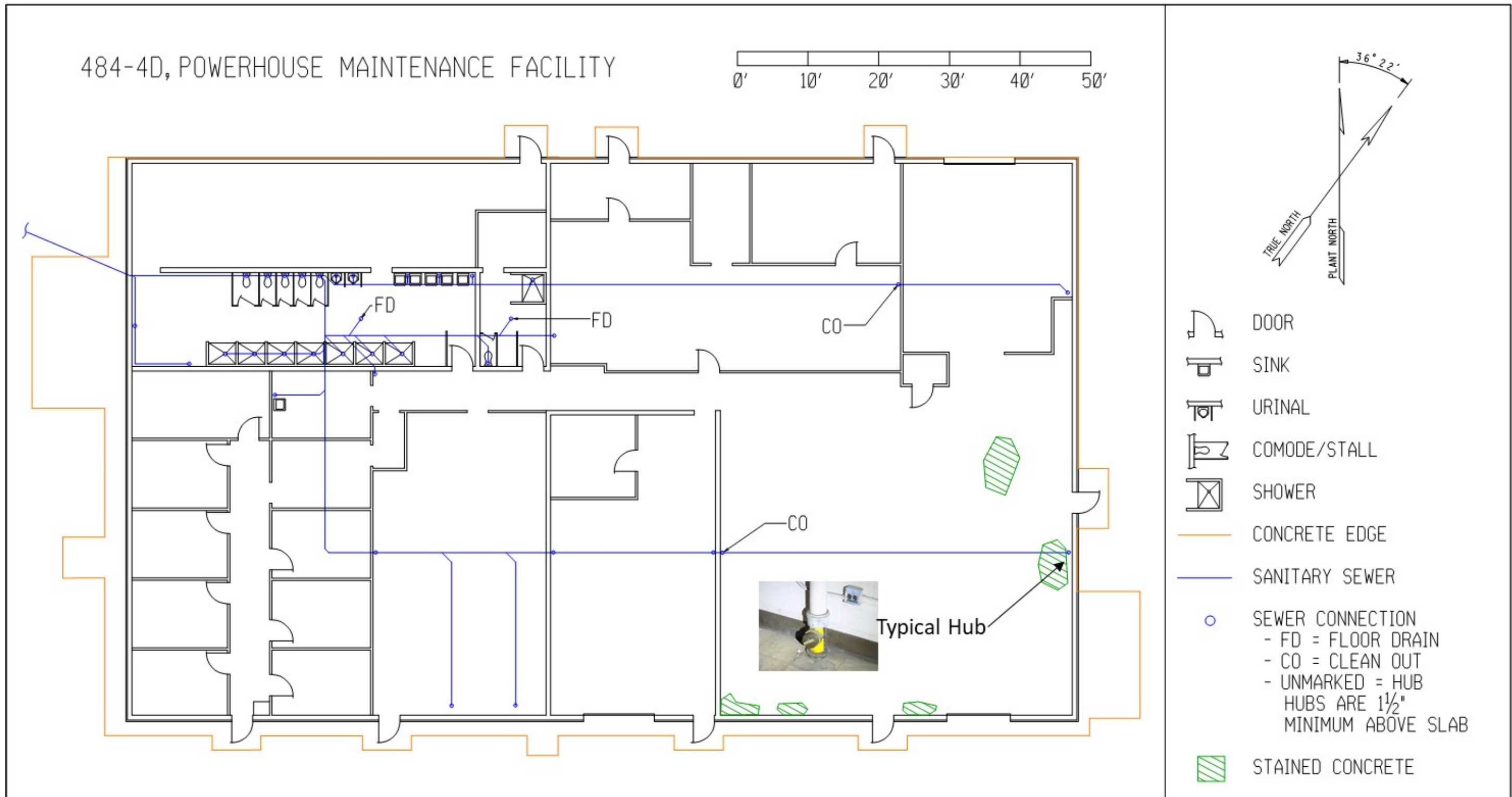


Figure 4. 484-4D Maintenance Facility Drainage (Sanitary Sewer)

The women's locker room and restroom are accessible through the passageway in the center of the building. The men's locker room and restroom are accessible from the passageway in the center of the building, as well as a door in the northeast corner that leads outside. Both locker rooms still contain the lockers and benches. The space containing the men's and women's locker rooms and restrooms is ~58.5 ft by 28.5 ft with a suspended ceiling at ~8-ft height. Within the area are lockers, sinks, toilets and urinals, showers, and laundry facilities. The laundry facilities have been removed. Toilets were removed and the resulting holes plugged with grout. The urinals, showers and floor drains were plugged with grout, but when the building is decommissioned, all facilities (urinals, showers, etc.) that were plugged during deactivation will be re-plugged and grouted after removal of the facility. In addition to re-plugging/grouting of previously plugged utilities, all holes in concrete (such as Hubs) will be plugged and grouted after decommissioning. The utility room is ~14 ft by 9.5 ft with a suspended ceiling at ~8-ft height. The utility room contained telecommunications electronics and electrical gear, including a 75kVA dry-type transformer, disconnects, and a power panel. Also, in the utility room are a sink and a 120-gal water heater. The utility room contains the main electrical power for the structure as well as the main building supply for domestic water, all of which have been disconnected.

The tool crib area is composed of four rooms, all with a suspended ceiling at ~8-ft height. Tool Crib Room 1 is oddly shaped and has a section that is ~19.75 ft by 20.25 ft and a second section that is ~29.75 ft by 15 ft. Tool Crib Room 2 is ~19.5 ft by 8 ft. Tool Crib Room 3 is ~14.25 ft by 8 ft. The tool crib office is ~21 ft by 14.25 ft. The tool crib area contained various cabinets and storage bins for tools and supplies necessary in the maintenance shop and Powerhouse. All tools, equipment, cabinets, etc. have been removed. There was also a flammable storage locker in Tool Crib Room 1 that has been removed. The tool crib office contained a desk, chair, computer and other typical office supplies and amenities, all of which have been removed.

The welding shop is ~26.75 ft by 25 ft. The welding shop contained work benches, welding equipment and a grinder, all of which have been removed. It is sectioned off from the main shop by a hanging, translucent, flexible, amber colored strip partition to shield against personnel viewing welding arcs. On the north side of the welding shop is a 10-ft roll-up door that leads to the outside.

The offices in the southwest portion of the building are typical. The offices are all ~13.5 ft by 9.5 ft with an ~8-ft high suspended ceiling. Within the offices were desks, chairs, filing cabinets, computers, printers, shelves, etc., all of which have been removed.

The lay-down yard to the west of the building structure is a partially fenced, paved area ~137 ft by 32 ft. The fencing is a 7-ft chain link. Adjacent to the building structure are a couple of small areas that are concrete, extending from the building slab. The larger of the two areas is covered by a metal, pole supported awning. Propane cylinders were stored in this area. The two HVAC units that serviced the building have been removed, leaving only duct work in the lay-down yard. The south end of the lay-down yard has a partially covered area for compressed gas cylinder storage. The compressed gas cylinder storage area contained oxygen, argon, acetylene and

nitrogen cylinders, all of which have been removed. There is a handrail installed around a portion of the compressed gas cylinder storage pad.

On the north side of the building are two small storage buildings with a covered area between them. Within the storage buildings and in the covered area were stored various consumables such as water, coveralls, cleaning supplies, raincoats, gloves, etc., all of which have been removed. On the east side of the building is a small covered area and the ductwork from another HVAC unit that serviced the building, particularly the welding and main shops.

### **Process History**

Review of records, walk downs and interviews indicate that no chemical or radioactive processes were performed in 484-4D (i.e., no chemical, mechanical, or electrical energy or interaction was performed to change the state of an input material or to produce a new output product).

This facility was used for maintenance and personnel purposes. There is no history of processing of materials in the maintenance facility. Welding, grinding, milling, turning and repair of mechanical and electrical equipment and components occurred within the facility. Further, a myriad of materials necessary in the maintenance of the Powerhouse and support structures, systems and components were used in the maintenance facility, including paints, coatings, greases, lubricants, leak detection compounds, dye penetrants, cleansers and solvents. These materials were stored appropriately in flammable storage lockers or elsewhere.

There is evidence of spills within the facility. Lubricating oils, cutting oils and solvents are all suspected to have been involved. Refer to Figure 4 for location of the stained areas of concrete indicative of spills within the facility. Only one spill is documented in the SRS spill files. In 1986, there was a gasoline spill of ~2 gal from a maintenance vehicle in the parking lot of the facility. The spill was cleaned up with no evidence of the spill having entered into the storm sewer or associated outfall.

There are no records within the SRS Occurrence Reporting and Processing System/Site Item Reportability and Issue Management (ORPS/SIRIM) database for the structures. SRS historical spill files, accessible via InSite (the SRS internal website), do not reveal any spills having occurred at the structure except as noted above. Inspections reveal spills have been contained within the structure with no evidence of spills outside the building.

**Chemical Process**

Chemical Name*	Process Location (see Figure 3)	Evidence of Spills?
Safety Kleen™ (hydrotreated kerosene)	Main Shop (tools and parts cleaner)	Yes
Tap Magic™ Cutting Fluid <sup>1</sup>	Main Shop (machining)	Yes
Texaco Regal Oil R&O 32 <sup>2</sup>	Main Shop (lubrication)	Yes

\* The chemical residues and stains present in the building are attributed to these chemicals based on best information available. The number of solvents, paints, lubricants, etc. used in the facility is exhaustive and, given the fact that spills are not apparent for most of the chemicals, they are not listed above.

**Radioactive Process**

Isotope	Contaminated Areas/Others
N/A	N/A

N/A – not applicable

Drains from the building exist wherever the need for sanitary sewer connections exists, such as in the locker rooms and restrooms, the utility room, the electrical shop and the lunch room (see Figure 4). None of the spills/stained areas evident in the structure are near drains in the facility. With the exception of the toilet and shower drains, the sanitary sewer drains in the facility are all above grade hubs. The minimum elevation above grade for the hubs is 1½ inch (see Figure 4). There are also cleanouts (access plugs to the sanitary sewer lines) located in the building. The drains in the facility go to the sanitary sewer.

**Summary of Existing Characterization**

Characterization has been accomplished using a combination of process knowledge/historical release information, verification walk downs and sampling as appropriate.

There is stained concrete in the main shop of the structure. The areas of stained concrete are not significant, and the spills have been cleaned up appropriately to prevent build-up and spread of spilled materials. The stained areas will be cleaned with a strong surfactant (i.e. BioSolve™) during decommissioning. Spills within the structure have been contained within the structure as evidenced by the extent of the stains in the slab. The areas of the slab that are stained have no evidence of cracks that penetrate the slab and thus do not provide a means for the spilled material to migrate to the soil underneath the slab. The spills were in areas that do not have at-risk drains to the sanitary sewer. Further, no chemicals in the facility were in quantities that exceed 40 Code of Federal Regulations Part 302, Designation, Reportable Quantities, and Notification, thresholds.

<sup>1</sup> Tap Magic™ is 90% trichloroethane, and up to 3% each of 1,2-butylene oxide, dimethoxymethane, sulfurized petroleum, tert-butyl alcohol, and cassia oil

<sup>2</sup> Texaco Regal Oil R&O 32 is solvent dewaxed, heavy paraffinic (severe solvent-refining and/or hydrotreatment) petroleum distillates

An important part of the characterization portion of this evaluation is a historical review of spills/releases to the environment. This review includes a review of the ORPS/SIRIM database conducted from the effective date of the Federal Facility Agreement (FFA), August 16, 1993, to present and a review of the FFA. The FFA serves as a review of releases/spills to the environment prior to August 16, 1993. Search of the ORPS/SIRIM database reveals no post-FFA occurrences involving Building 484-4D.

An asbestos survey of the building was conducted on October 18, 2019 and several areas tested positive for asbestos containing materials (ACM). The results of that survey are included in Q-APG-D-00005, "Baseline Asbestos Inspection Report of Building 484-4D", Reference 9. In accordance with 40 CFR part 61.145, a ten-day notification will be filed with SCDHEC prior to demolition and all ACM removal will be performed by asbestos trained personnel with proper permitting and waste disposal procedures.

Wastes generated during decommissioning will be characterized and managed in accordance with SRS procedures and State and Federal regulations.

### **Historical Significance**

A review has been conducted in accordance with a Programmatic Agreement. This review resulted in the publication of a Cultural Resources Management Plan (Reference 4) in which the facilities with historical significance are listed. This facility is not listed in that reference and therefore is not historically significant.

## Part 2. Evaluation

Clean Facilities				
	Question	Yes	No	Justification
1.	Has the facility ever contained or processed radioactive or hazardous material other than stored packaged material or materials of construction? <i>If yes, go to question 4.</i>		X	The facility has never contained or processed radioactive material. The facility has contained and made use of small amounts of hazardous materials such as solvents.
2.	If there was stored packaged material, has there ever been a spill? <i>If No or N/A, this is a Simple Model. Stop.</i>	X		There is evidence of spills within the facility. Lubricating oils, cutting oils and solvents are all suspected to have been involved.
3.	Was spill confined inside structure and cleaned to free release standard per Radiological Control Manual 5Q (for radiological) or continued occupancy per Industrial Hygiene Manual 4Q (for hazardous)? <i>If Yes, this is a Simple Model. Stop.</i>	X		Spills within the structure have been contained within the structure as evidenced by the extent of the stains in the slab. The areas of the slab that are stained have no evidence of cracks that penetrate the slab and thus do not provide a means for the spilled material to migrate to the soil underneath the slab. <b>Building 484-4D will be a Simple Model decommissioning.</b>
Contaminated Facilities				
	Question	Yes	No	Justification
4.	Is the facility listed as a RCRA/CERCLA Unit in Appendix C of the SRS FFA? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A
5.	Is the facility listed as a Site Evaluation Area in Appendix G of the SRS FFA? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A
6.	Is there evidence that there has been a release of hazardous or radioactive materials outside the structure? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A
7.	Is there a substantial threat of a release of hazardous or radioactive materials outside the structure? <i>If Yes, this is a CERCLA Model. Stop.</i>			N/A
8.	Has the facility been assigned a hazard category as defined in Facility Safety Document Manual 11Q? <i>If No, stop and refer facility for evaluation to assign a hazard category, then proceed</i>			N/A

<b>Contaminated Facilities (cont'd)</b>				
	Question	Yes	No	Justification
9.	Is the hazard category Nuclear (HC- 2 or 3), radiological, or high hazard chemical? <i>If Yes, this is a CERCLA Model. Stop</i>			N/A
10.	Has the Department of Energy-Savannah River directed that the decommissioning be performed using the CERCLA Model? <i>If yes, this is a CERCLA Model. Stop</i>			N/A
12.	Is the facility a formerly nuclear, radiological, or high-hazard chemical facility? <i>If Yes, this is an Integrated Sampling Model. Stop.</i>			N/A
13.	Has Environmental Compliance and Area Completion Project's Regulatory Support Group determined that a final survey is not required for this facility? <i>If Yes, this is a Simple Model. If No, this is an Integrated Sampling Model. Stop</i>			N/A

N/A – not applicable

## Part 3. Review of Existing Records

The following facility records were reviewed as a part of this evaluation:

Ref #	Document No.	Revision/Date	Title
1	SRNS-RF-2008-00086-000-M&O	Revision 19-01-MO, Feb. 14, 2019	Standard Requirements Identification System FA00 Facility List.
2	WSRC-OS-94-42	Rev 0, Aug. 16, 1993 All updates through Sept. 21, 2018, including Rev. 0 Appendices C, G and K for Fiscal Year 2019	FFA for the SRS, Administrative Document No. 89-05-FF
3	N/A	N/A / Since 1993	D-Area SIRIM and ORPS reports 08/1993 to 05/2009.
4	N/A	Final January 26, 2005	SRS's Cold War Built Environment Cultural Resources Management Plan
5	S-EHS-D-00001	Rev 0/April, 2006	D-Area Hazards Survey
6	V-PCOR-D-00042	Rev. 0/July 1, 2014	Deactivation Project Final Report Building 484-D Powerhouse and Ancillary Buildings
7	S5-4-703	Rev 6, 11/18/1981	Maintenance Shop Piping Underslab Plan
8	S5-4-705	Rev 20, 07/15/1985	Maintenance Shop Piping and Electrical Outside Lines
9	Q-APG-D-00005	Rev. 0, October 30, 2019	Baseline Asbestos Inspection Report of Building 484-4D