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Title  
108-F BIOLOGICAL LABORATORY  
HANFORD SITE  
INTERIM DECOMMISSIONING REPORT

REC'D  
10/1/83  
108-F

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108-F BIOLOGICAL LABORATORY  
HANFORD SITE  
INTERIM DECOMMISSIONING REPORT

APPROVED BY: *R. A. Paasch* Date 9/29/83  
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ABSTRACT

The 108-F Biological Laboratory Building, which contained radioactive contaminated laboratory equipment, drains, and exhaust ducts was successfully decontaminated and released from a controlled status in FY 1983. This effort required the removal of 4,772 ft<sup>3</sup> of contaminated waste and 10,840 ft<sup>3</sup> of uncontaminated waste. The work was accomplished using a new worker classification from Rockwell Hanford Operations called the Decontamination/Decommission Worker, with required craft support personnel from UNC forces.

The 108-F Biological Laboratory Building was part of the original 1944 Hanford Site construction, with an annex added in 1950. The four-story original building and the three-story annex building are rectangular steel frame and concrete block structures having concrete foundations and floors. With the 11,000 ft<sup>2</sup>, three-story annex, the total floor area is about 31,000 ft<sup>2</sup>. The laboratory facilities consisted of 39 offices, 47 laboratories, a heavily shielded Cobalt-60 source room, 18 rooms for handling small animals, a walk-in cooler, and conference and library rooms.

An excellent safety record was established in performing this task. Even though contamination levels at some locations were in the 50,000 cpm/100 cm<sup>2</sup> Beta-Gamma or 3,000,000 dpm/100 cm<sup>2</sup> Alpha range, there were no recorded skin contamination cases nor loss of contamination control to "clean" areas. The industrial safety performance was equally impressive, with no lost-time injuries reported, no OSHA recordable injuries sustained, and only nine minor first aid treatment injuries.

The 108-F decommissioning project was completed as planned, on time, and under budget, with the building released to an uncontrolled status. Currently, the office portions of the 108-F Building are being used by Decommissioning Operations personnel. Upon completion of the decommissioning program in 100-D, DR, F, and H Areas, the building will be demolished and the site restored.

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## 1.0 INTRODUCTION

This report documents the decontamination phase for the decommissioning of the 108-F Biological Laboratory Building located in 100-F Area on the Hanford Site in the State of Washington. The laboratory building is one of the few remaining structures in the 100-F Area, all of which are being decommissioned as part of the long range strategy for disposition of the retired 100 Areas Production Reactor facilities.

The decontamination phase involved removal of all contaminated equipment from the laboratories, and decontamination of the structure to ground level to unrestricted use release criteria. The structure has been left intact, and the first floor office portions of the building are being used to house Decommissioning Operations and other personnel involved in the decommissioning efforts. When decommissioning of the remaining 100-F and the neighboring 100-D/DR and 100-H Area facilities has been completed, the 108-F Building will be demolished and the site returned to a condition compatible with the surrounding terrain.

## 2.0 DESCRIPTION OF FACILITY

### 2.1 History

The 108-F Building was constructed in 1944 as part of the original Hanford Site construction. Its intended use was to provide facilities for the mixing and addition of chemicals used in the treatment of the reactor cooling water. Shortly after the reactor began operation, it was determined that the chemical mixing and addition function could be better performed elsewhere in the cooling water supply system.

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In 1949, the 108-F Building was converted for use as a biological laboratory. For the next 24 years, this laboratory facility was used for life-science studies of the effects of radiation and contamination from the Hanford operations on plant and animal life relative to man. Expansion of the programs necessitated enlargement of the building in 1950 to provide more space.

Operation of the biological laboratory, originally under the General Electric Company was transferred to Battelle Memorial Institute's Pacific Northwest Laboratory in 1966 as part of segmentation of the Hanford Site operations. The biological laboratory activities at 108-F were gradually phased out and transferred to other facilities, and the laboratory closed down in 1973.

After the close down of the laboratory functions, the 108-F Biological Laboratory Building was maintained under the retired 100 Areas Site Surveillance and Maintenance program. After inclusion in the inventory of Hanford Site facilities in the Surplus Facilities Management Program, which includes all contaminated facilities in the 100-D, DR, F and H Areas, it was selected as one of the first major facilities for decommissioning.

## 2.2 Location

The 108-F Biological Laboratory is located in the 100-F Area, one of five retired reactor sites that were constructed solely for the production of plutonium. These sites are located along the south shore of the Columbia River where it traverses the northern part of the Hanford Site in Washington State. The

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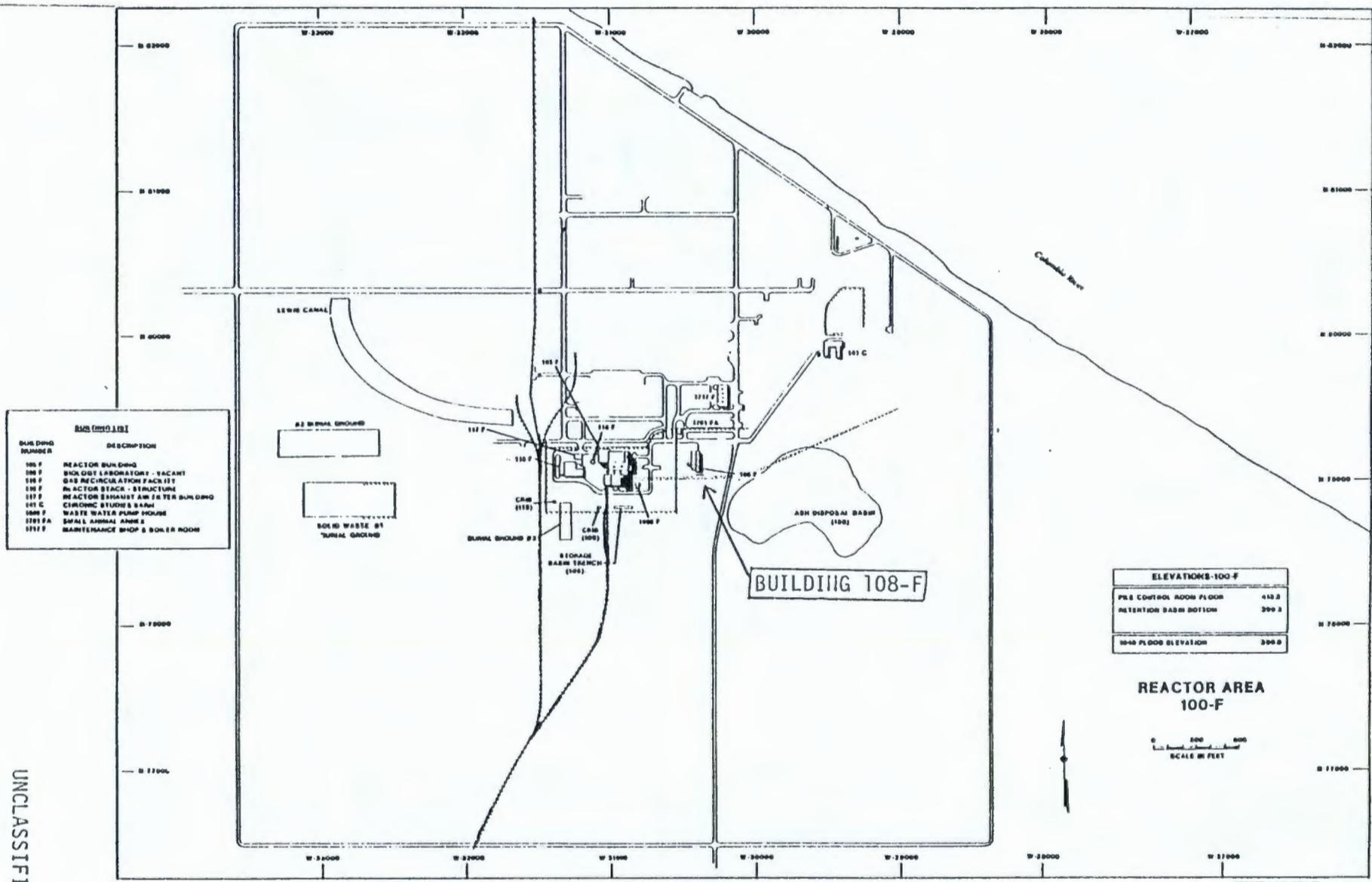
site boundaries of the 100-F Area, and the location of the 108-F Biological Laboratory within the site, are shown on the map in Figure 2.1, 100-F Reactor Area .

The aerial photo shown in Figure 2.2 shows the status of the 100-F Area facilities on May 5, 1976, before the contaminated facility decommissioning program was begun. Since this photo was taken, most of the uncontaminated facilities have been removed leaving only the 105 reactor building and its ancillaries (in the left foreground) and the 108-F laboratory building (in right-center foreground) as the only remaining major structures. The reactor exhaust stack, adjacent to the reactor building, was demolished in September 1983.

### 2.3 Physical Description

The original 108-F Water Treatment Building was a four story steel frame and concrete block structure with reinforced concrete foundation and floors. The building is located approximately 100 yards (91.4m) due east of the 105-F Reactor Building. The original building had a floor area of about 20,000 ft<sup>2</sup> (1858m<sup>2</sup>). The floor area was later increased by the addition of an 11,000 ft<sup>2</sup> (1022m<sup>2</sup>) annex. This addition is a three story concrete block structure adjoining the older building. Figures 2.3-1 and 2.3-2 show the exterior of the 108-F Building from different angles.

The interior of the building was laid out in typical laboratory fashion, i.e., with 47 rooms equipped for laboratory use, a number of small offices, a large conference room, an administrative section, a library, lunch and locker rooms, etc. Since radioactive materials were used in the work performed within the building, the laboratories and storage rooms were maintained in a controlled status.



100-F REACTOR AREA

Figure 2.1

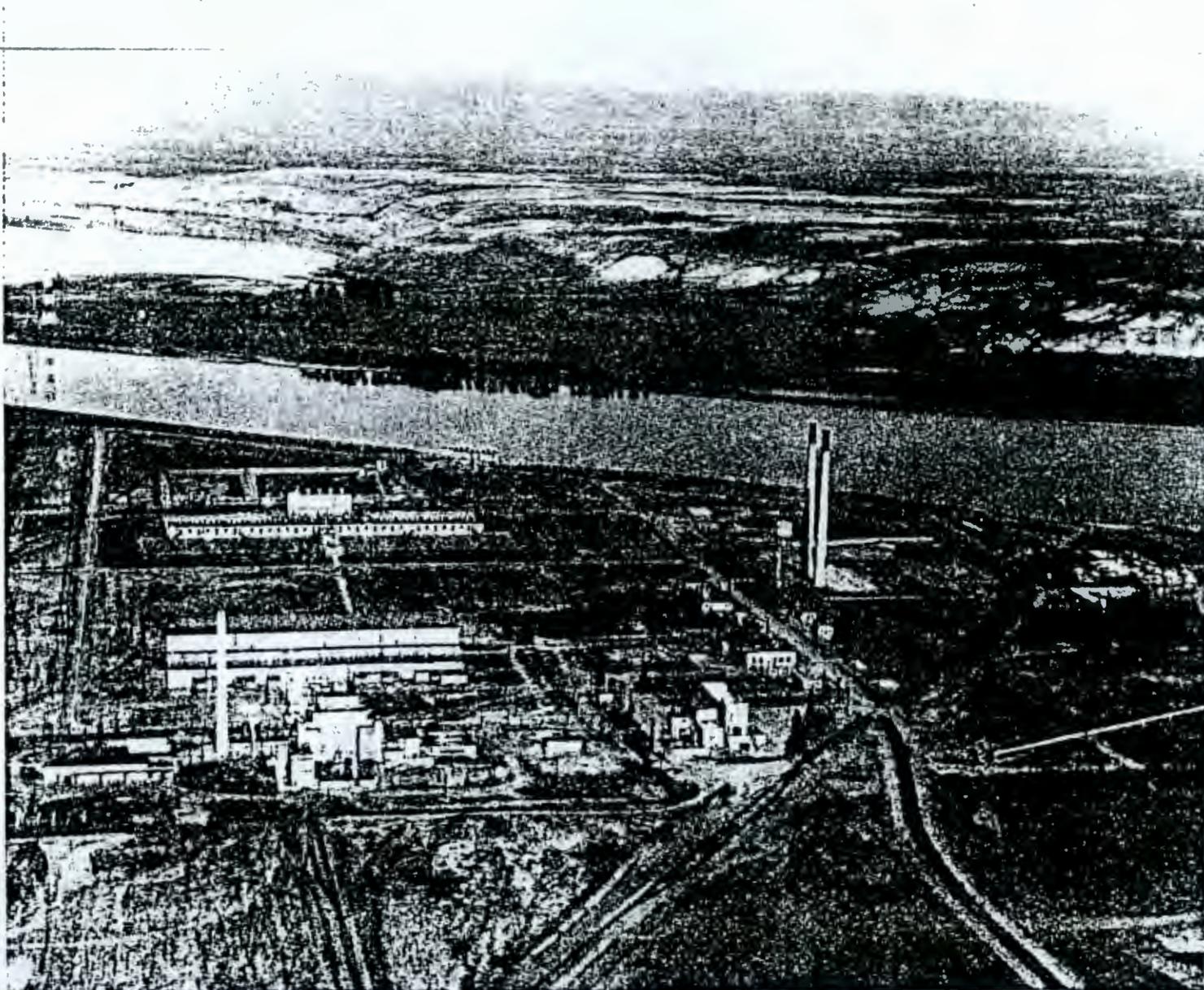


FIGURE 2.2.  
100-F AREA MAY 5, 1976

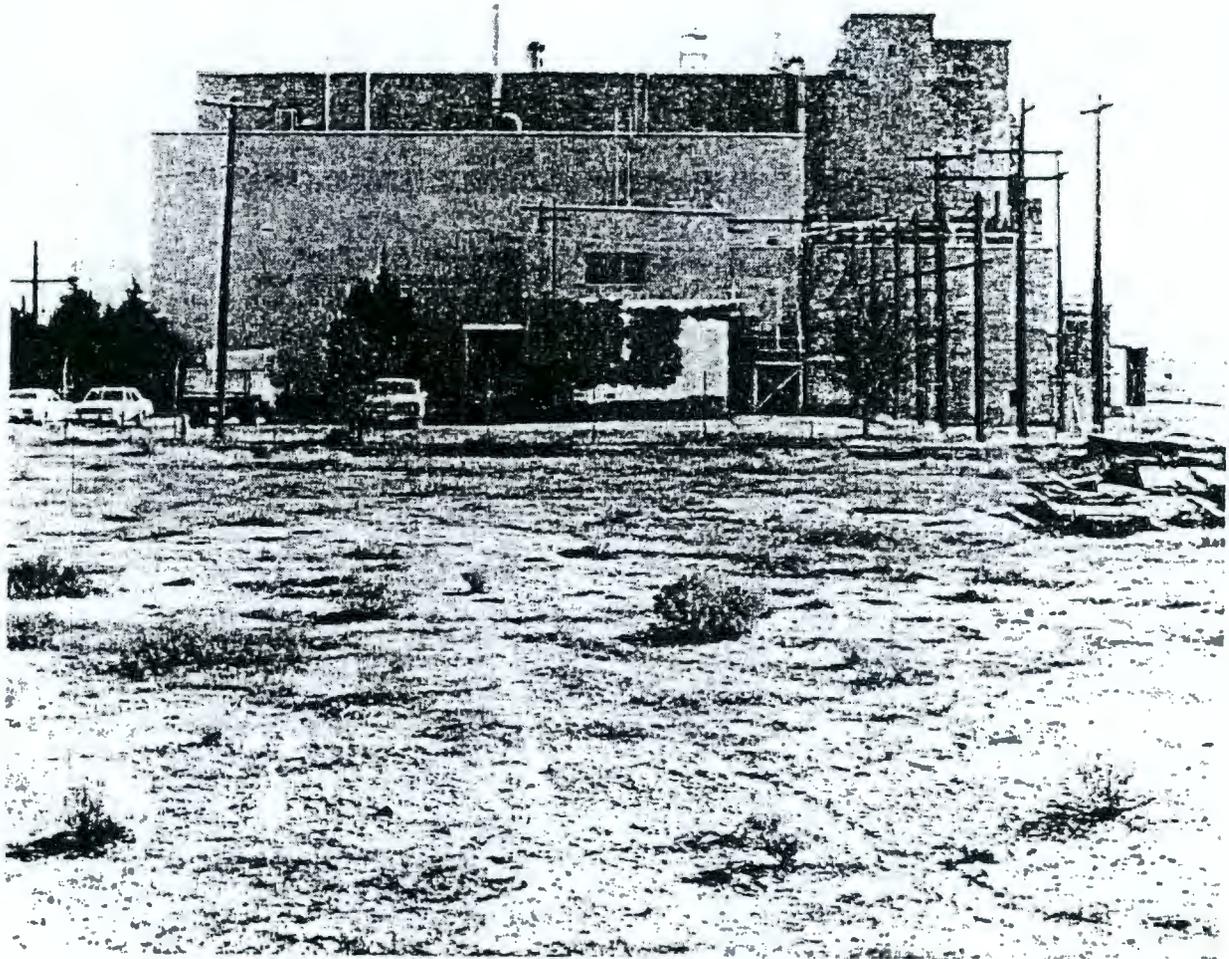


FIGURE 2.3-1

108-F BUILDING-WEST SIDE-FY 1982

100-F AREA

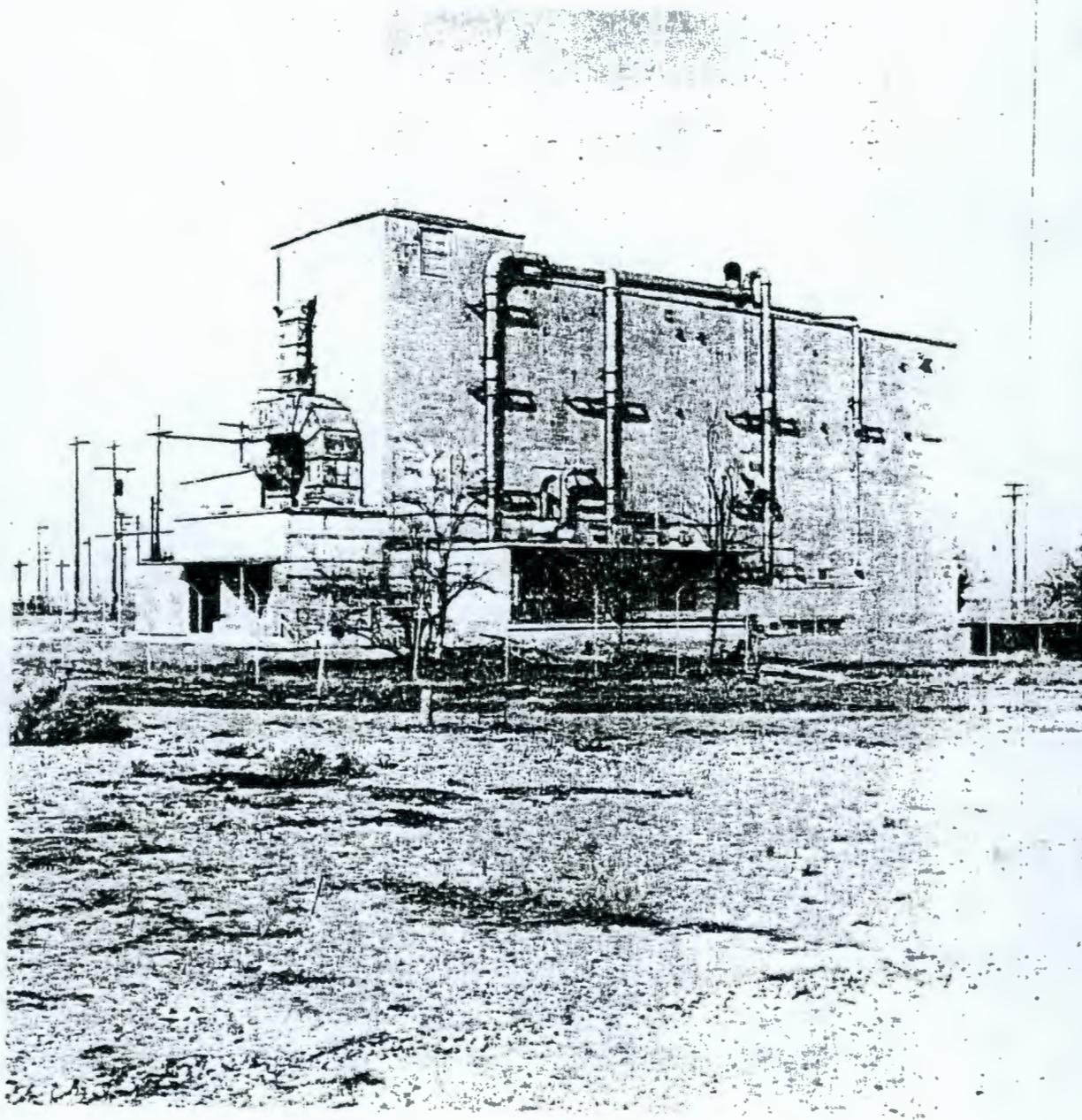


FIGURE 2.3-2

108-F BUILDING SOUTH END & EAST SIDE - FY 1982

100-F AREA

#### 2.4 Radiological Characterization

In October 1977 a radiation survey was conducted in the 108-F Building. The maximum contamination levels recorded on that survey were 5000 c/m Beta-Gamma and 100,000 d/m Alpha. These surveys provide a good indication of the radiation and contamination status of the building at that time. Most of the building was open to unrestricted entry. A limited number of rooms were generally contaminated and, therefore, were on controlled entry status. The overall background exposure rate to personnel working in the building radiation zones was 1 mR/hr at the time of the 1977 radiation survey. Some decontamination work was accomplished between the radiation survey in 1977 and the start of this decommissioning project. The contamination levels in 1983 were found to be much higher when systems were broken into than originally recorded on the 1977 radiation survey; however, background exposure rates to personnel during decontamination work remained less than 1 mR/hr throughout the building.

#### 3.0 OBJECTIVES

Plans are to accomplish the decommissioning of the 108-F Biological Laboratory and the remaining ancillary structures to the reactor building prior to the decommissioning of the reactor. The alternatives assessment for disposition of the reactor and the reactor shield wall is currently being conducted. Because of its contained office facilities and its proximity to the reactor, the 108-F building has been chosen for housing the Decommissioning Operations staff throughout the 100-F (and 100-D, DR and H) decommissioning period. Therefore, because the structure will be utilized during this period, only the decontamination phase of the facilities decommissioning was completed at this time.

The objective of the decontamination phase was to remove all contaminated equipment and materials from the building, and to decontaminate the structure to unrestricted use by the public release criteria. Some drain line trenches located below the first floor level are contaminated, but because they contain drain lines that are in use they will not be decontaminated until facility use is terminated and the structure demolished. There is no planned future use for the facility once there is no need for office facilities for the decommissioning activities.

#### 4.0 PROJECT MANAGEMENT

##### 4.1 Project Documentation

The documents prepared for conduct of the 108-F Biological Laboratory decommissioning are listed and briefly described below.

UNI-1005 REV1, 108-F Project Management Plan, March 23, 1983

This document provided the administrative controls and technical direction used to plan and complete the project.

UNI-1007, 108-F Project Decommissioning Plan, March 15, 1983

This document provided the engineering direction and outlined the operating procedures for the decommissioning of the 108-F facility.

Radiological Criteria for Decontamination and Decommissioning of the 108-F Building, 100-F Area

This was a letter from J. J. Dorian to J. W. Jones, dated December 23, 1980 wherein unrestricted release criteria and the associated monitoring techniques to be used were given.

UNI-1006 REV2, 100-Areas Decommissioning Quality Assurance  
Implementation Plan, dated March 17, 1983, Authored by  
J. T. Irish

This plan implements UNC Quality Assurance Manual UNI-M-73 and it further describes the quality assurance activities performed by UNC to assure the development of and compliance with procedures for health, safety, environmental protection, safe disposition of hazardous materials, and restoration of facilities and grounds to conditions which will allow either limited or unrestricted use of the area depending upon the mode of disposition.

#### 4.2 Technical Review

Independent reviews of UNC's readiness to safely begin the planned decommissioning work were conducted by a Battelle Pacific Northwest Laboratory consultant and by UNC Company Nuclear Review Board (CNRB).

Both independently concurred that the systems developed by Decommissioning Operations were adequate to assure safe conduct of the planned work.

Approval was given by the CNRB to begin the work when all procedures and documents were issued and training was completed.

### 5.0 PROJECT ACTIVITIES

#### 5.1 Site Preparation

Decontamination of the facility required that personnel have access to showers and clothing change rooms as well as restroom and lunchroom facilities. The 108-F Building itself was upgraded to provide these necessities plus a field office, tool storage facilities, and loading dock. A security fence was also

installed around the 108-F Building to limit access during nonoperating hours.

## 5.2 Project Work Sequence

Work was started in March 1983 after Detailed Work Procedures had been approved and a recheck of the radiological conditions. The work progressed from the 4th floor down. The sequence of the work within a laboratory usually followed the steps listed below, depending on the conditions in the individual laboratory.

### 5.2.1 Laboratory Confinement

Confinement involved the isolation, sealing, ventilation, filtration systems, and the controlled access to those laboratories that warranted such controlled requirements.

Rockwell Hanford Operations (RHO) waste disposal requirements. (See Figure 5.2.7-A, page 27)

All radioactive waste from the 108-F decommissioning project was packaged and transported in compliance with the regulations and requirements described in UNI-M-29 "Shipment of Radioactive and Other Hazardous Materials". (See Figure 5.2.7-B and C, pages 28 & 29)

Loaded shipping containers were surveyed and transported by truck approximately 25 miles to the 200 Area burial grounds. All waste was buried in accordance with Rockwell Hanford Operations disposal criterion (RHO-MA-222). (See Table 5.2.7, page 30)

To control contamination, the laboratories were sealed with plastic sheets and tape. A vacuum unit was attached to the sealed lab with an exhaust through a HEPA filter. This provided a negative pressure on the laboratory and thereby minimized the chance for any contamination spread. Only five of the forty-four laboratories warranted this type of control, i.e., rooms 107, 205, 207, 303 and 308. (Figure 5.2.1-A, B, C, and D depict the typical techniques used.)

#### 5.2.2 Hood, Sink, and Cabinet Removal

Fixture removal involved the foaming, disassembly, wrapping and handling of contaminated fixtures and equipment. Hoods contaminated with plutonium were coated with paint to fix the contamination. The hoods were then partially disassembled as required. The hood, sink and cabinet components were removed from a laboratory after being completely wrapped in plastic and sealed with tape. The contaminated components were loaded into shipping containers in preparation for burial at the 200-W burial site. (See Figure 5.2.2 )

NOTE: Preparation for removal of the contaminated components consisted of first removing lesser contaminated components, or possibly even clean components and treating them as contaminated. This provided actual experience for workers as well as verification of the detailed work procedures.



FIGURE 5.2.1-A  
TYPICAL LABORATORY CONFINEMENT - ROOM 308  
108-F BUILDING

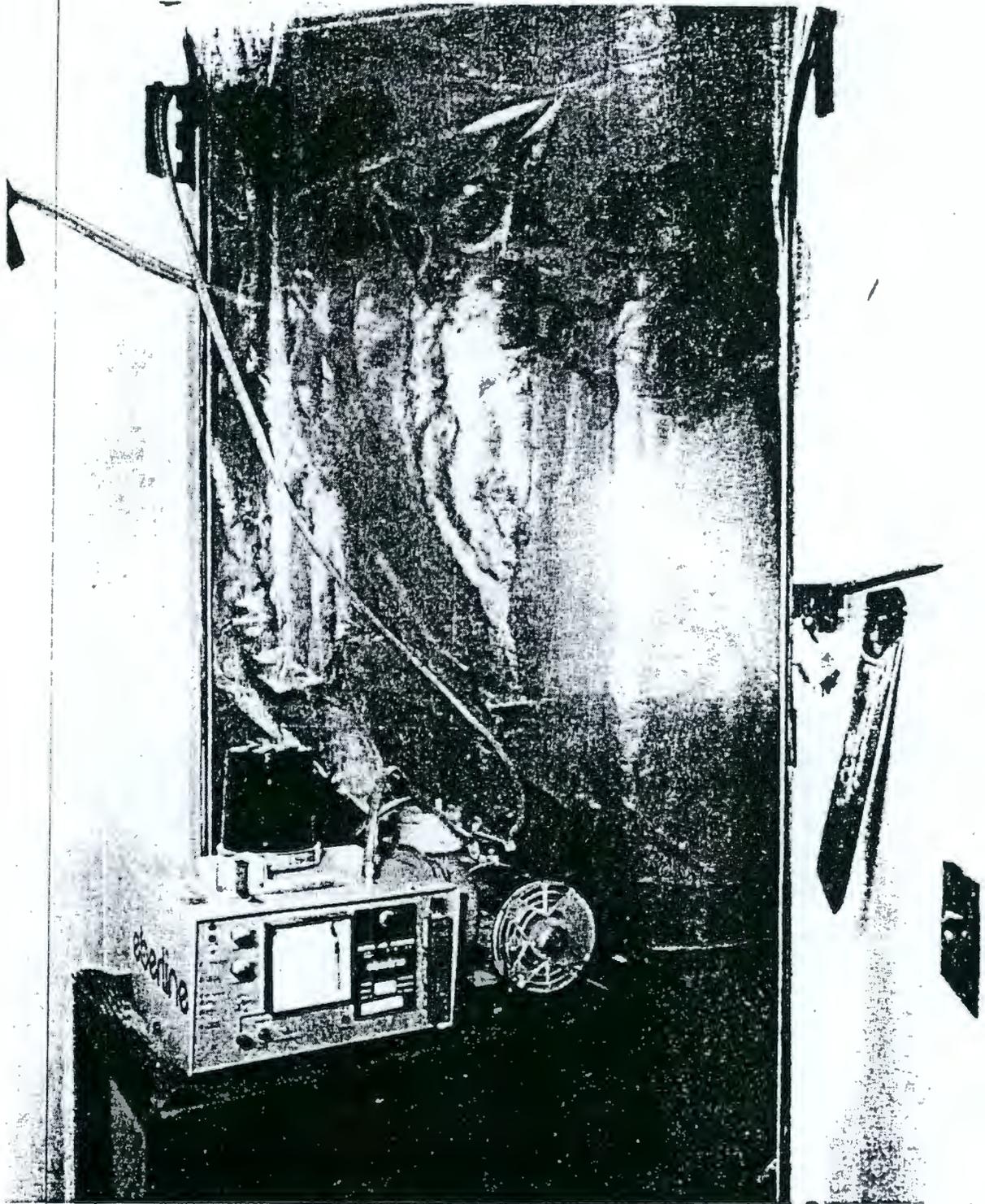


FIGURE 5.2.1-B

TYPICAL LABORATORY CONFINEMENT - ROOM 308

108-F BUILDING



FIGURE 5.2.1-C  
TYPICAL CORRIDOR - 3rd FLOOR RADIATION ZONE  
108-F BUILDING

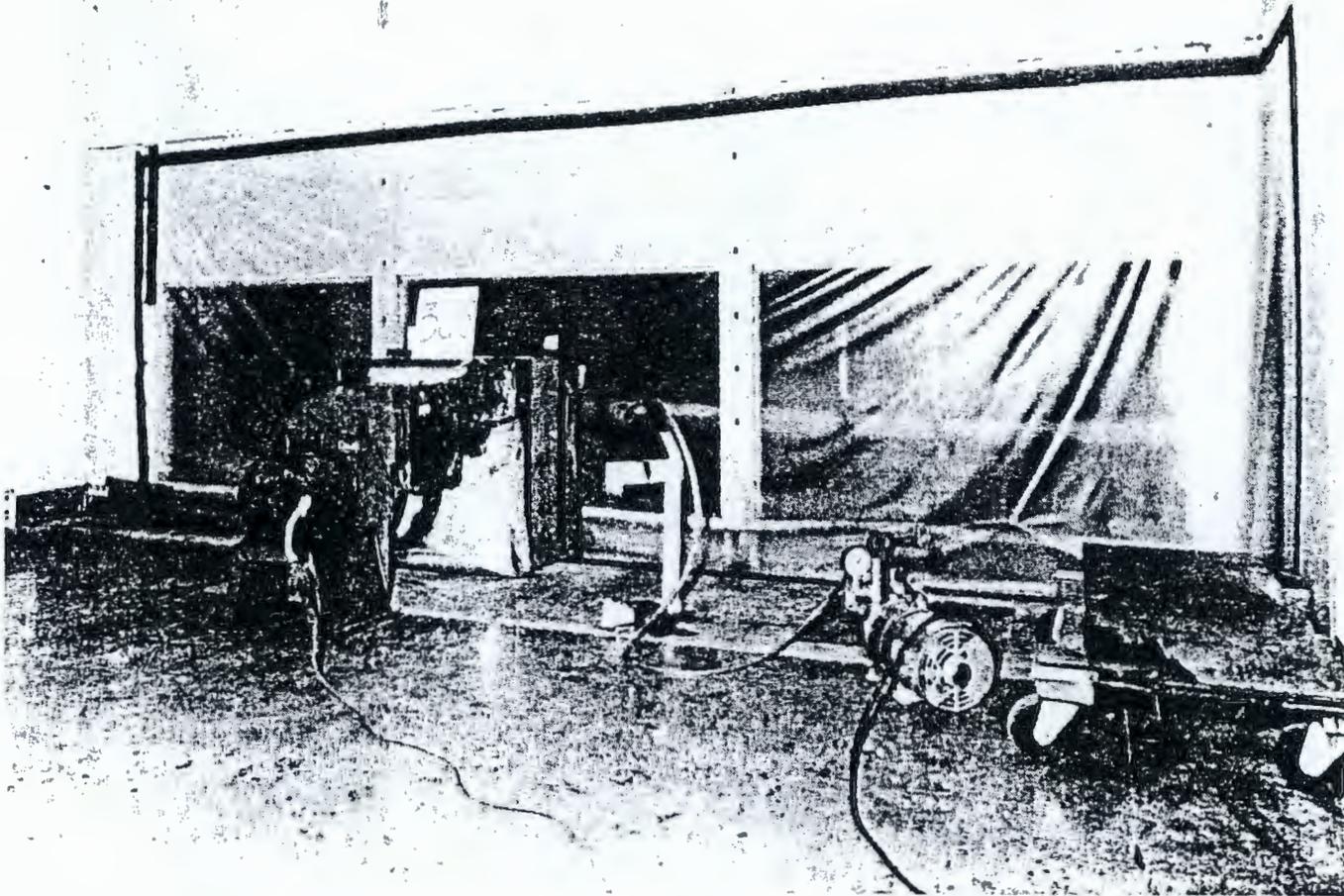


FIGURE 5.2.1-D

TYPICAL HEPA FILTER EXHAUST AND AIR SAMPLING UNIT  
ROOM 108 - 108-F BUILDING

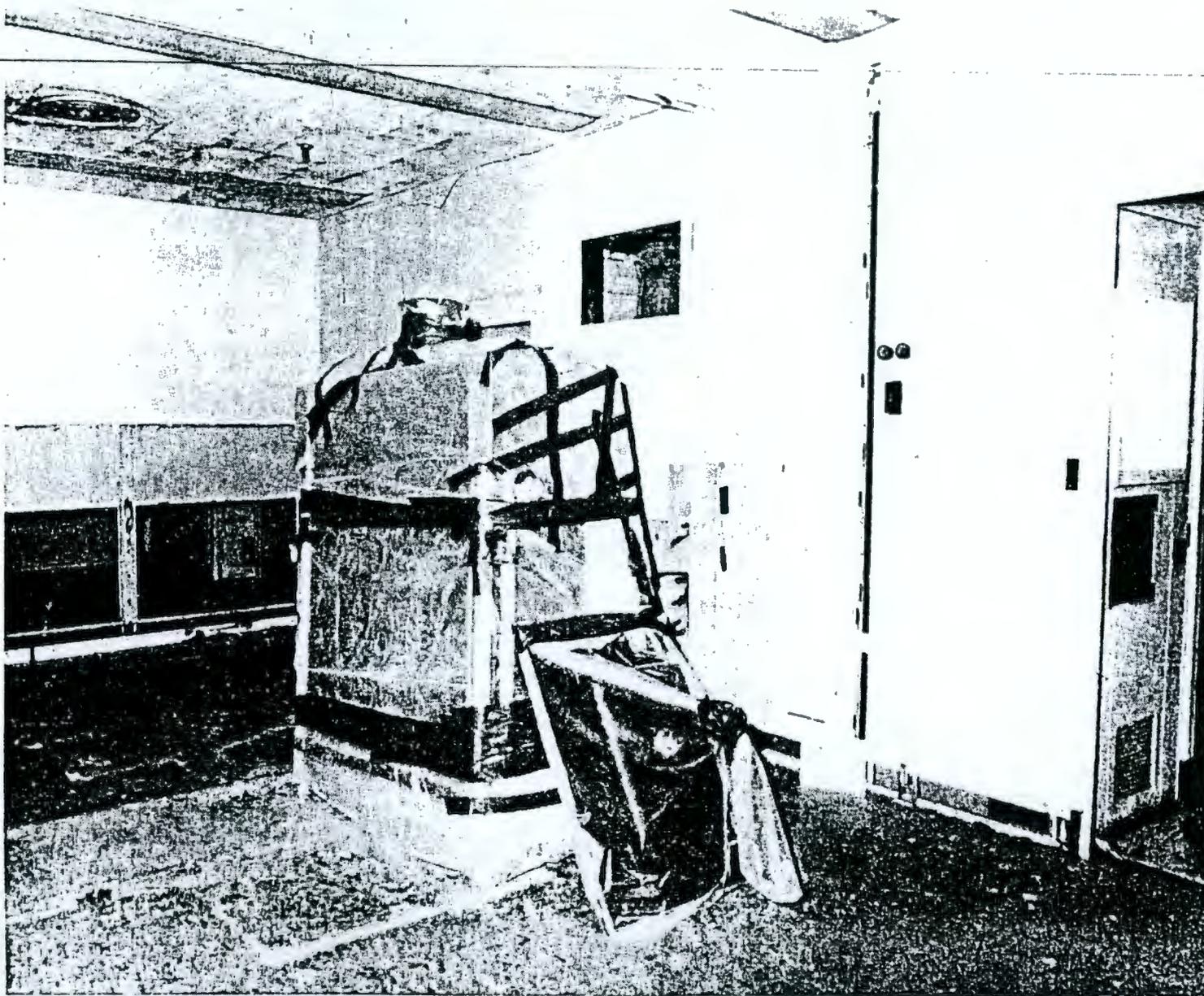


FIGURE 5.2.2

TYPICAL METHOD OF WRAPPING AND TAPING COMPONENTS IN PREPARING FOR BURIAL

ROOM 401 - 108-F BUILDING

### 5.2.3 Piping Removal

Pipe removal involved the cutting, sealing of open ends, and removal of all piping and tubing from a laboratory, including wrapping and handling until loaded into burial containers.

Whenever the duct work or piping was opened, it was surveyed and immediately covered with plastic and sealed with tape. (See Figure 5.2.3)

### 5.2.4 Exhaust Duct Removal

Duct removal involved the fixing, dismantling or cutting and sealing of the duct work each time it was opened. Disposal involved the removal through third-floor double doors, requiring the use of hoisting and rigging equipment, and the eventual sectioning, nesting\*, wrapping, handling and storing in a controlled zone until shipment to the burial site.

The interior of the duct work on the roof of the 103-F Building was painted, then cut into manageable sections. The duct work on the outer east wall was disconnected from the hoods inside the building and sealed. After disconnection from all anchor points, the duct work was removed from the side of the building and lowered to the ground intact. If the duct work was contaminated, it was coated with paint prior to cutting up for disposal. Whenever any duct work was opened, it was surveyed and immediately

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\* Nesting is defined as placing small items inside larger items for the purpose of volume reduction.

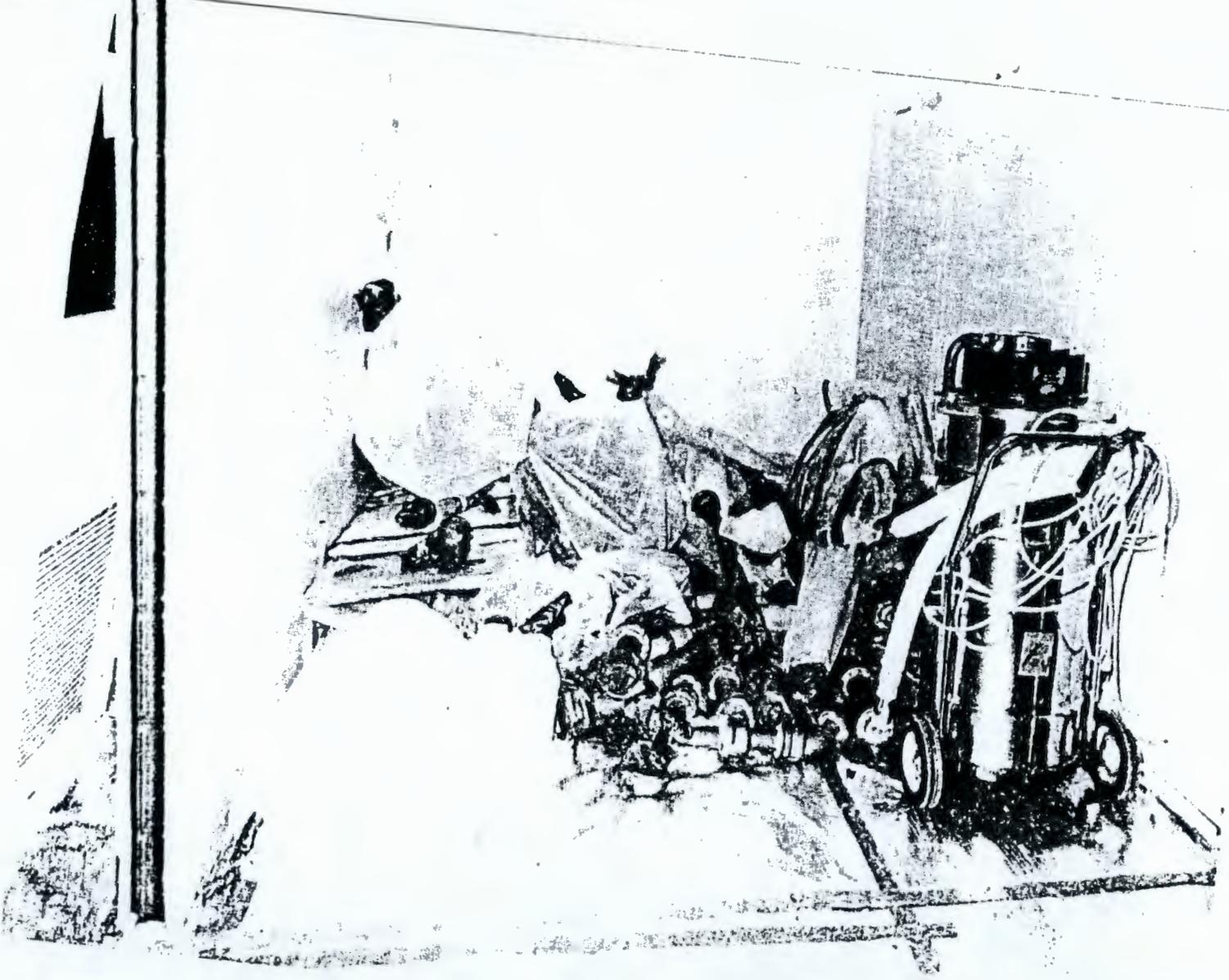


FIGURE 5.2.3  
PIPE AND OTHER COMPONENTS READY FOR BURIAL  
108-F BUILDING

covered with plastic and sealed with tape.  
(See Figures 5.2.4-A, B, and C)

#### 5.2.5 Ventilation System Removal

Ventilation removal involved the cutting, sealing, nesting, and wrapping of the ventilation duct work that was found to be contaminated.

As ventilation ducting was detached from the structure, it was surveyed by Radiation Monitoring and immediately covered with plastic or capped and sealed with tape. The sections of ducting were then stored in a controlled area and later loaded into burial containers and shipped to the 200-W burial grounds.

#### 5.2.6 Decontamination of Building Structures

Contamination was removed from the structures by various techniques. Some of the techniques included: (See Figures 5.2.6-A & B)

- Removal of wall partitions.
- Surface spalling concrete floors with rock-jack, grinding wheel, chipping hammers and scabbler.
- Use of strippable coating.
- Where necessary, as with chipping and grinding, a contamination control envelope was set up requiring the use of proper respiratory equipment.

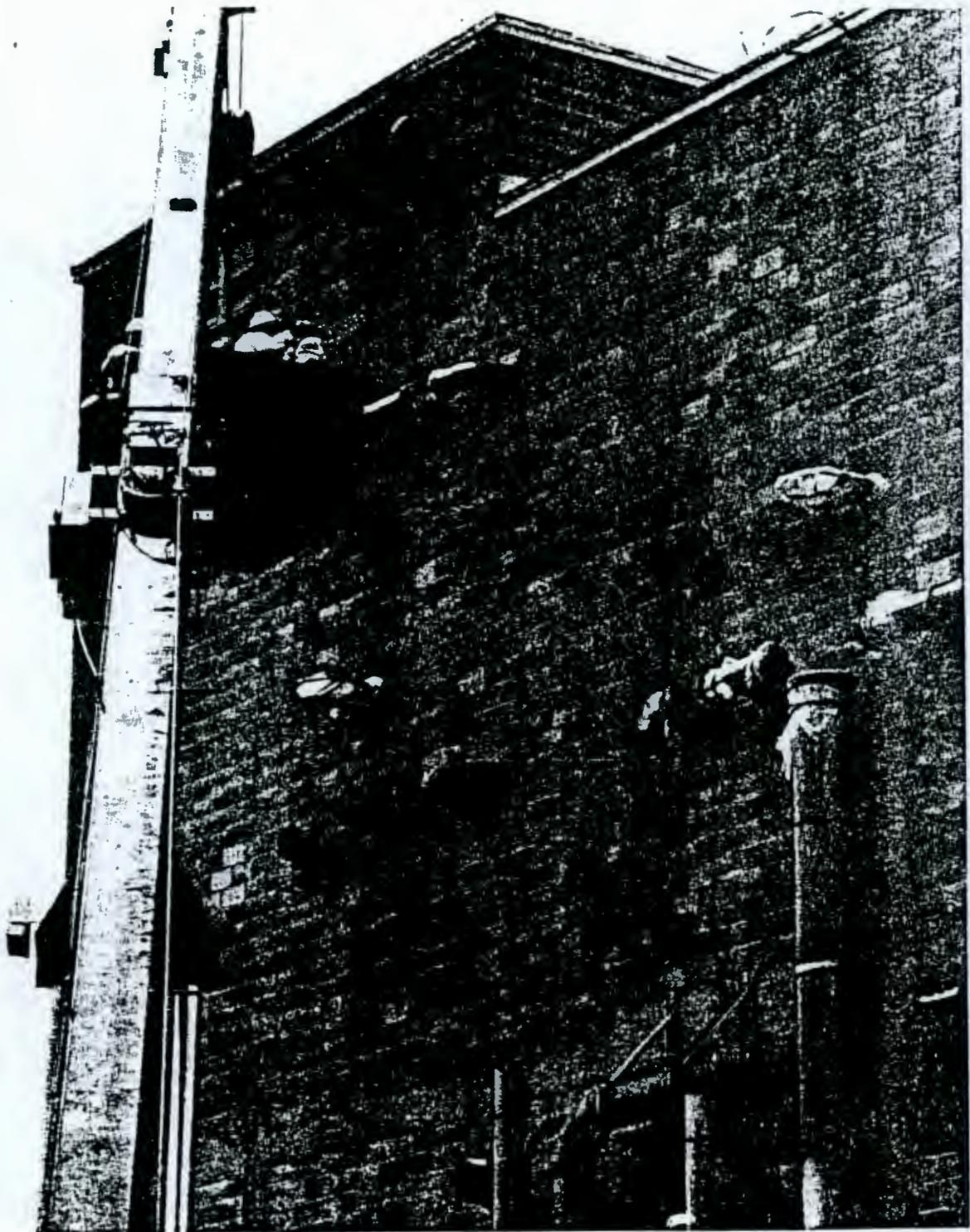


FIGURE 5.2.4-A  
EXTERIOR DUCT REMOVAL - EAST SIDE  
108-F BUILDING

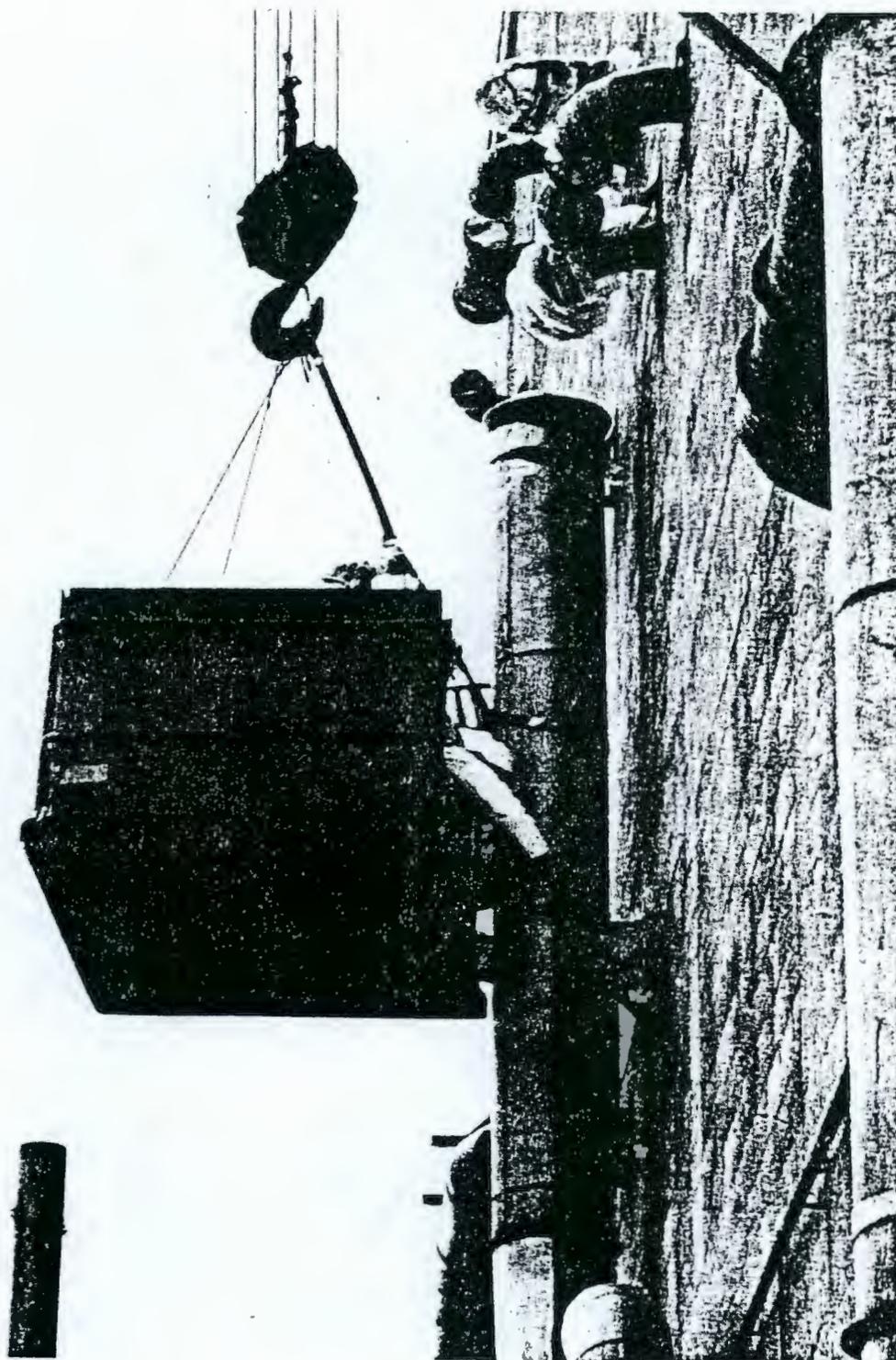


FIGURE 5.2.4-B

RIGGING EXTERNAL DUCT - EAST SIDE

108-F BUILDING

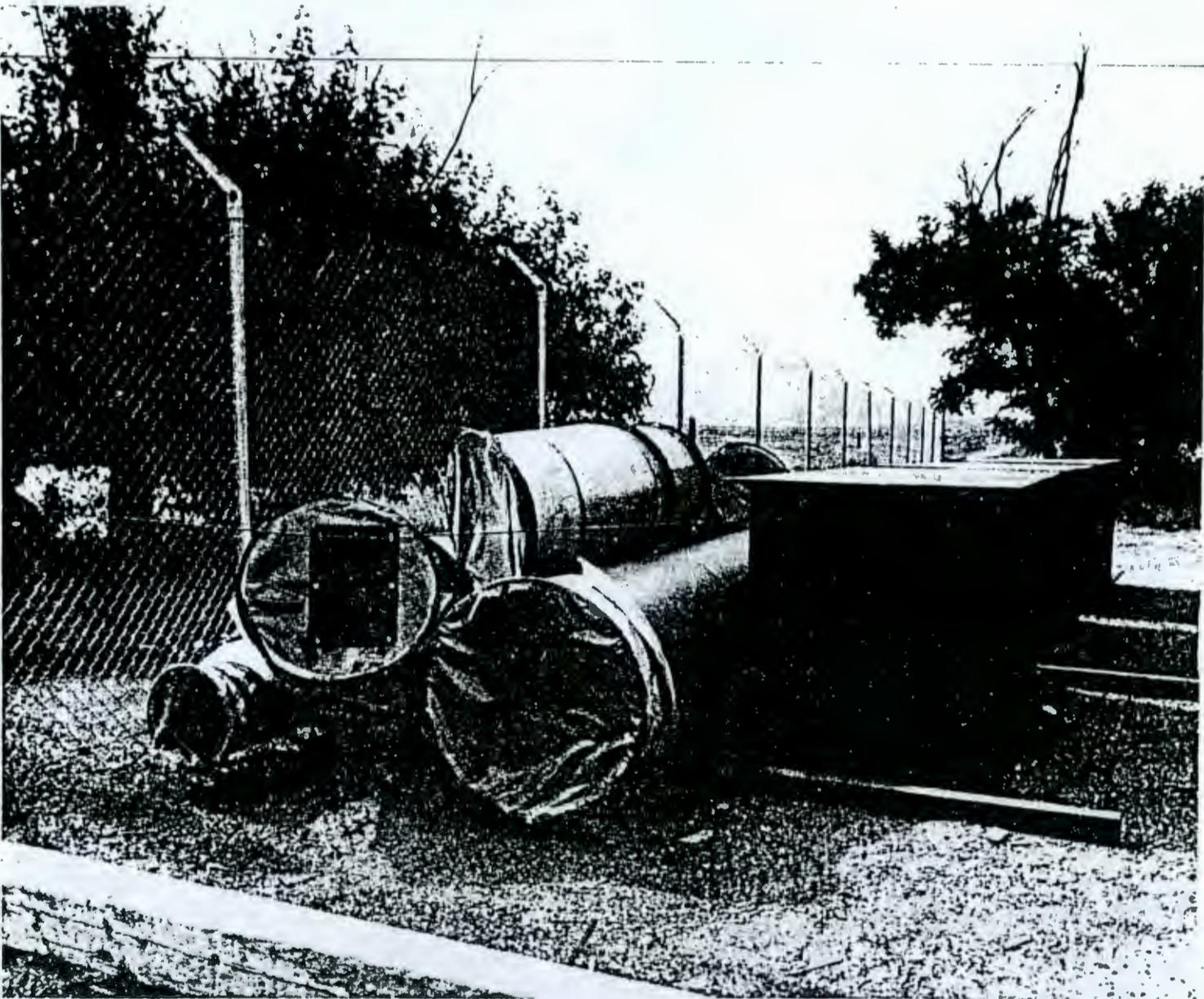


FIGURE 5.2.4-C  
CONTROLLED STORAGE

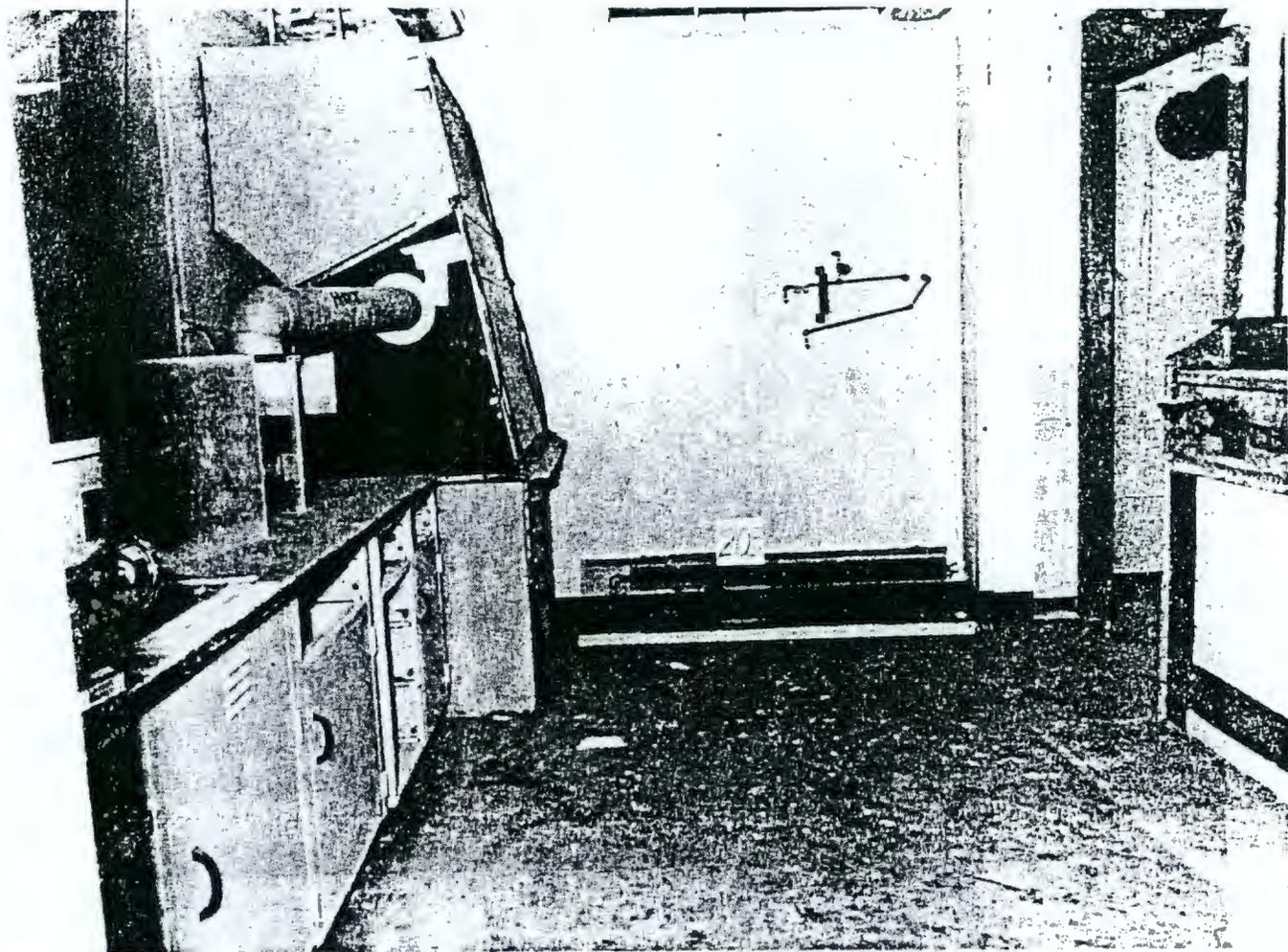


FIGURE 5.2.6-A

TYPICAL LABORATORY BEFORE DECONTAMINATION - ROOM 203

108-F BUILDING

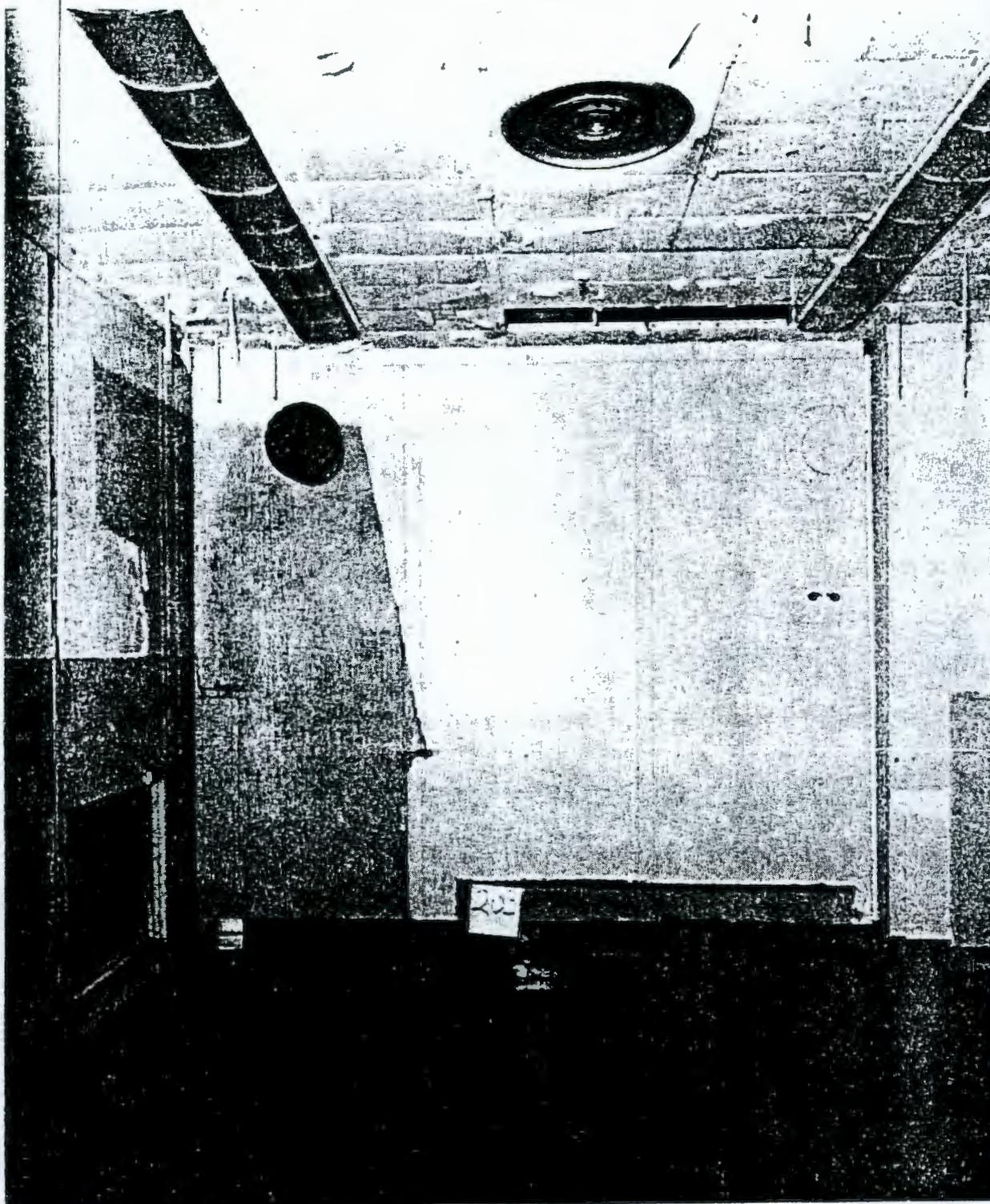


FIGURE 5.2.6-B

TYPICAL LABORATORY AFTER DECONTAMINATION - ROOM 203

108-F BUILDING

### 5.2.7 Waste Packaging/Transportation/Burial

A lightweight steel container was designed for packaging waste material. This container met the DOT-7A criteria and Rockwell Hanford Operations (RHO) waste disposal requirements. (See Figure 5.2.7-A)

All radioactive waste from the 108-F decommissioning project was packaged and transported in compliance with the regulations and requirements described in UNI-M-29 "Shipment of Radioactive and Other Hazardous Materials". (See Figure 5.2.7-B & C)

Loaded shipping containers were surveyed and transported approximately 25 miles by truck to the 200 Area burial grounds. All waste was buried in accordance with RHO disposal criteria. (See Table 5-1, page 30)

The major portion of the contaminated waste was buried in the Hanford 200 West burial site. There

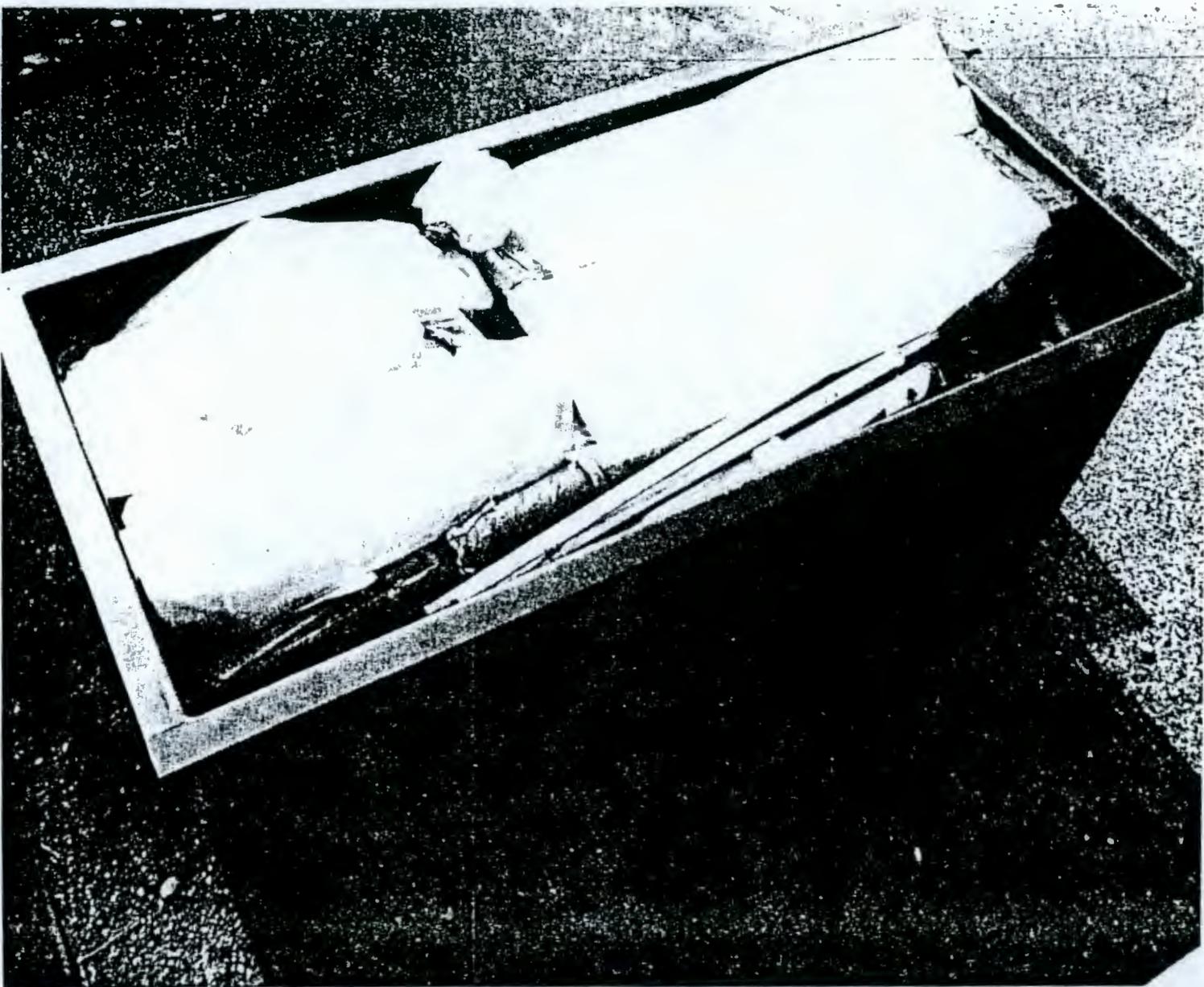


FIGURE 5.2.7-A  
OPEN - METAL WASTE CONTAINER  
108-F BUILDING

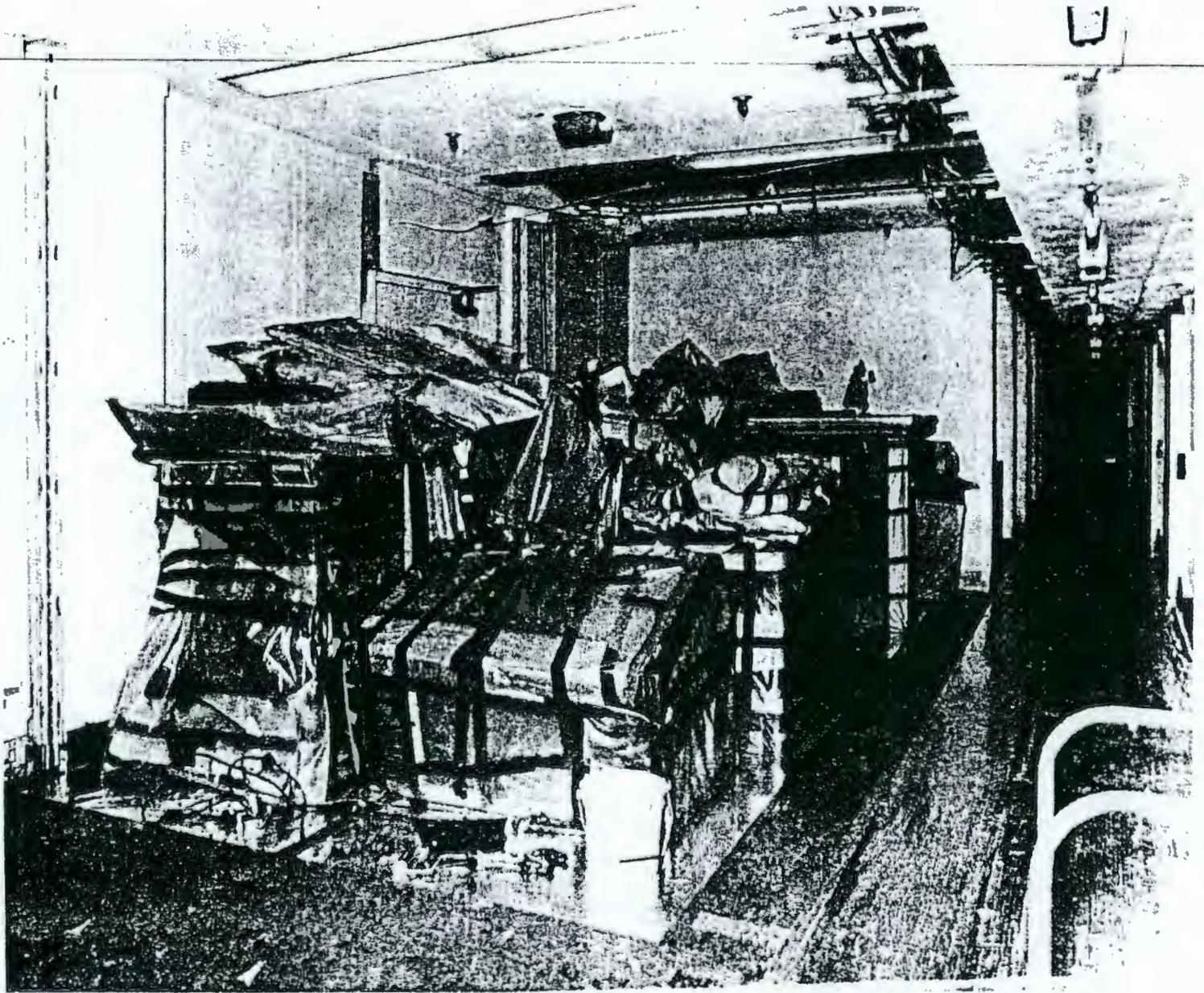


FIGURE 5.2.7-B  
CONTAMINATED WASTE READY FOR LOAD-OUT  
108-F BUILDING

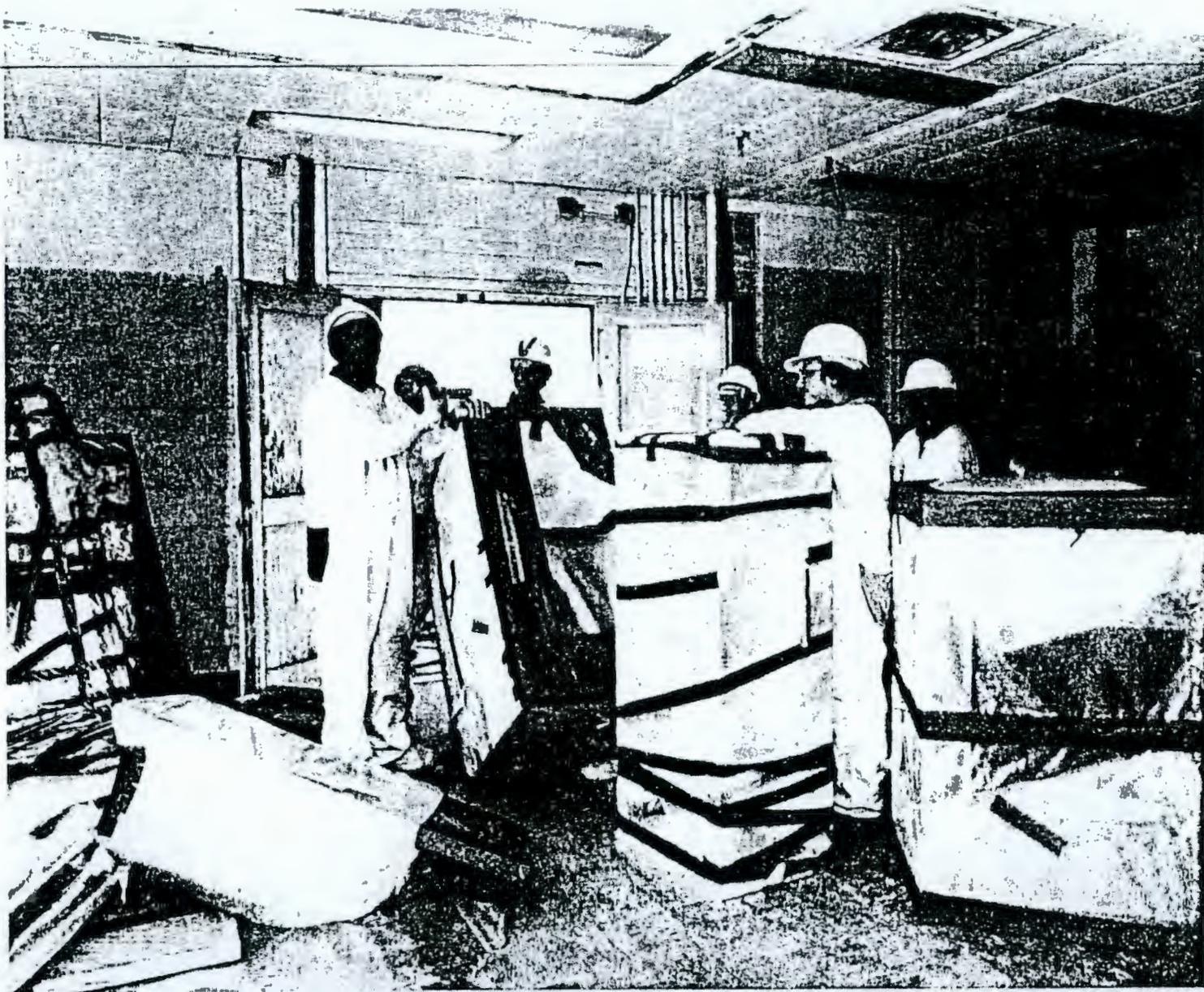


FIGURE 5.2.7-C  
WASTE REMOVAL  
108-F BUILDING

TABLE 5-1  
 BUILDING 108-F  
 Contaminated Waste Generated as of September 16, 1983

ITEMS	VOLUME		WEIGHT		Containment	Containers
	Ft <sup>3</sup>	M <sup>3</sup>	Tons	Kg x 10 <sup>4</sup>		
Drains, sinks, hoods, piping, interior walls, tile, shelving, furnishings.	4,772	135.1	31.5	28.6	(a)	116

(a) These items were doubled wrapped with 10 mil. plastic, either bag or sheet form and taped to seal seams plus cover sharp edges.

TABLE 5-2  
 Non-Contaminated Waste Generated as of September 16, 1983

ITEMS	VOLUME		Containers
	FT <sup>3</sup>	M <sup>3</sup>	
Drains, piping, tile, shelving, interior walls, furnishings	10,840	307	(Open truck loads)

still remains some radiation boxes and duct work to be shipped from 108-F building. This waste has been sealed and stored outside the building in an undercover control zone for protection from the elements. No salvageable equipment existed in the 108-F building that could be excessed or released to other agencies.

#### 5.2.8 Noncontaminated Waste

The volume amount of noncontaminated waste as of September 1983 exceeds that of the contaminated waste by 227%. Non-contaminated waste is any item which is examined by radiation monitoring and found not to be detectable with PAM probe for Alpha and not detectable with the P-11 probe for Beta-Gamma. No special packaging or transportation requirements are needed to ship or bury this material. Truck loads amounting to 10,840 cu. ft. were hauled and dumped into the 183-F clearwells and backfilled with excavated dirt. (See Figures 5.2.8-A, B, C, D & E) (For volume, see Table 5-2, page 30)

#### 5.2.9 Final Survey and Sampling

A final survey and sampling of all interior surfaces was conducted to effect the release of the structure for later demolition.

Radiological Controls were established in the Detailed Work Procedures (DWP). Cleanup and contamination control was an ongoing effort by the Radiation and Water Quality Control Section.

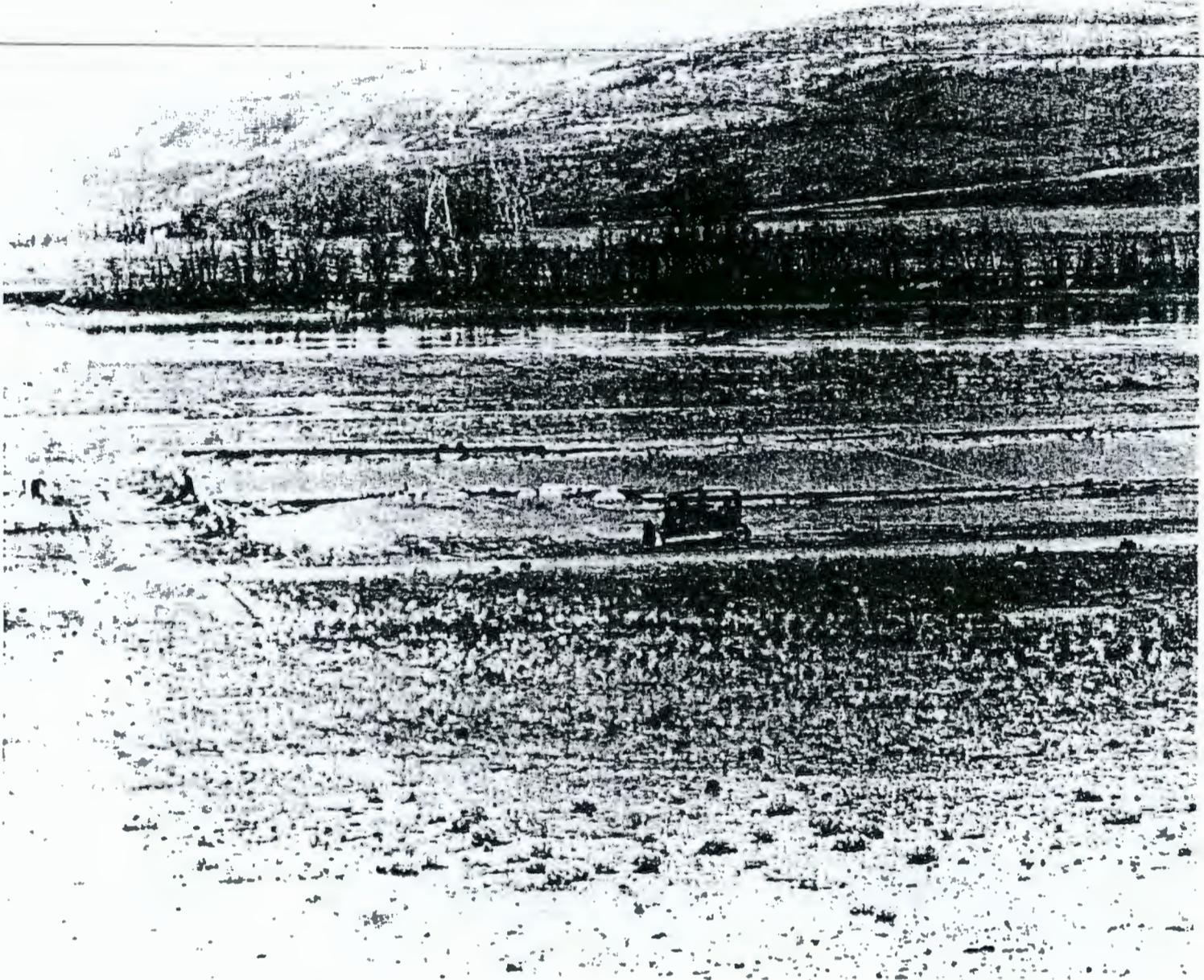


FIGURE 5.2.8-A  
NONCONTAMINATED - NONHAZARDOUS WASTE SITE



FIGURE 5.2.8-B  
CLEARWELL - 100-F AREA - WASTE SITE

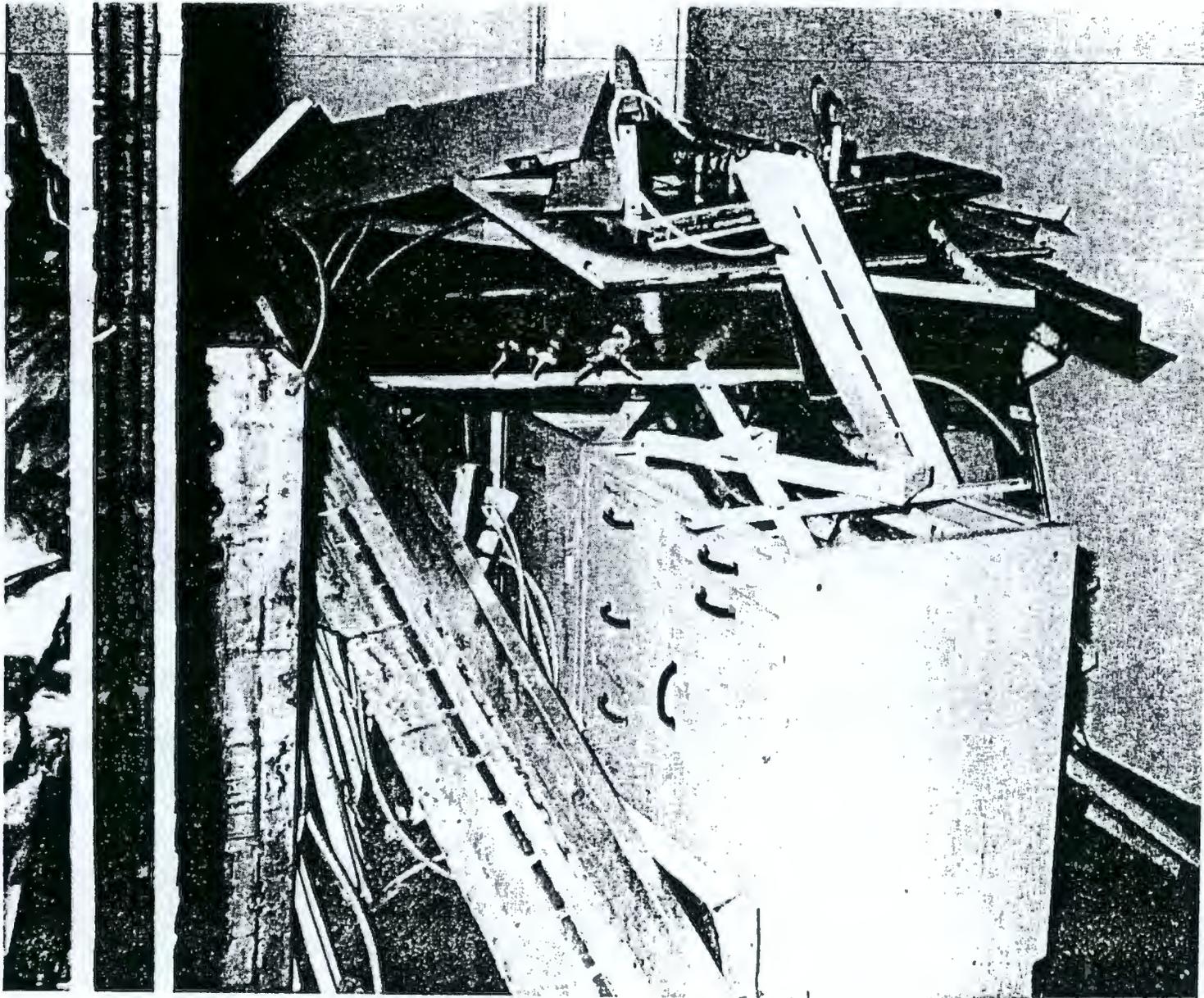


FIGURE 5.2.8-C  
NONCONTAMINATED WASTE  
108-F BUILDING

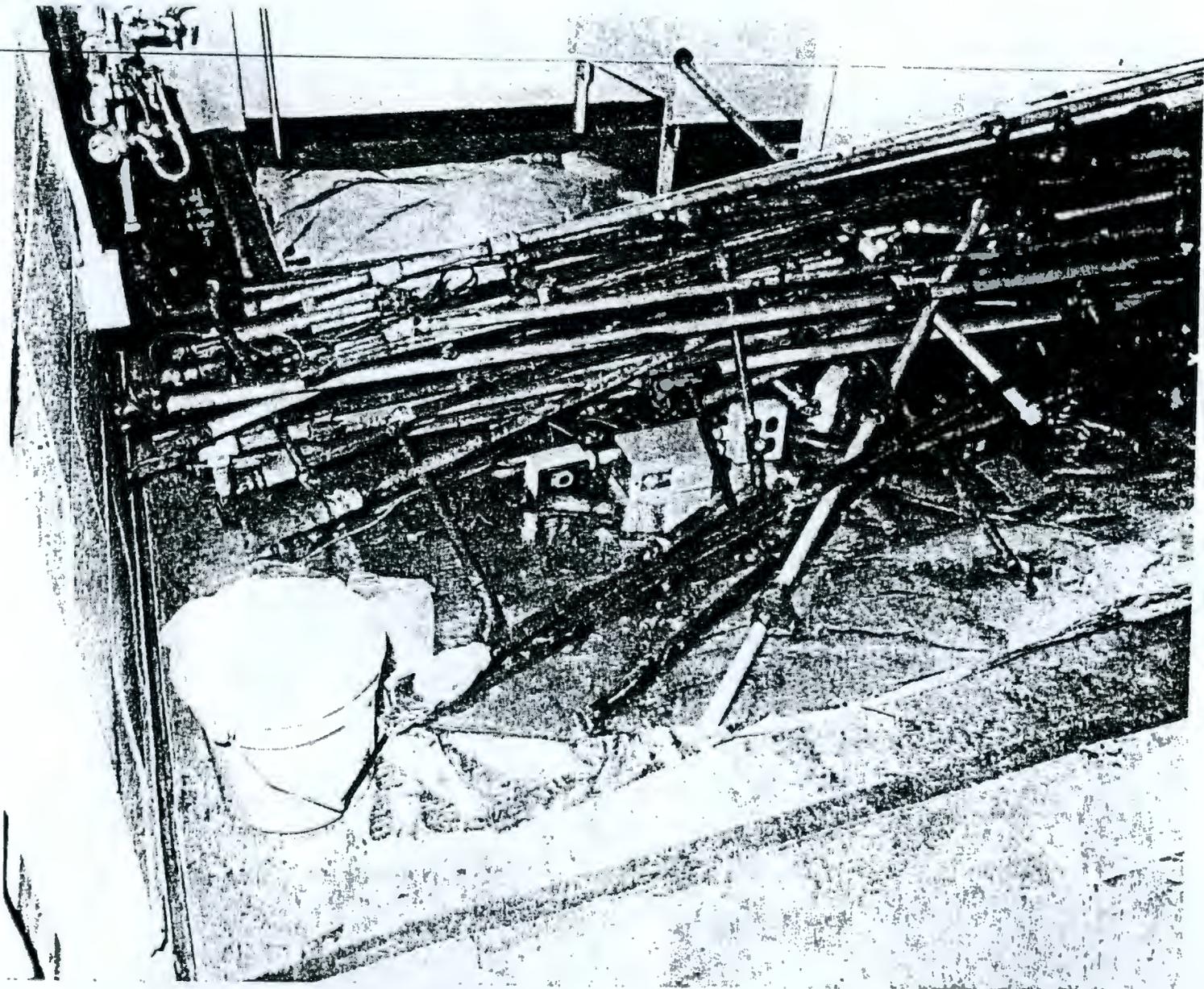


FIGURE 5.2.8-D  
NONCONTAMINATED WASTE  
108-F BUILDING

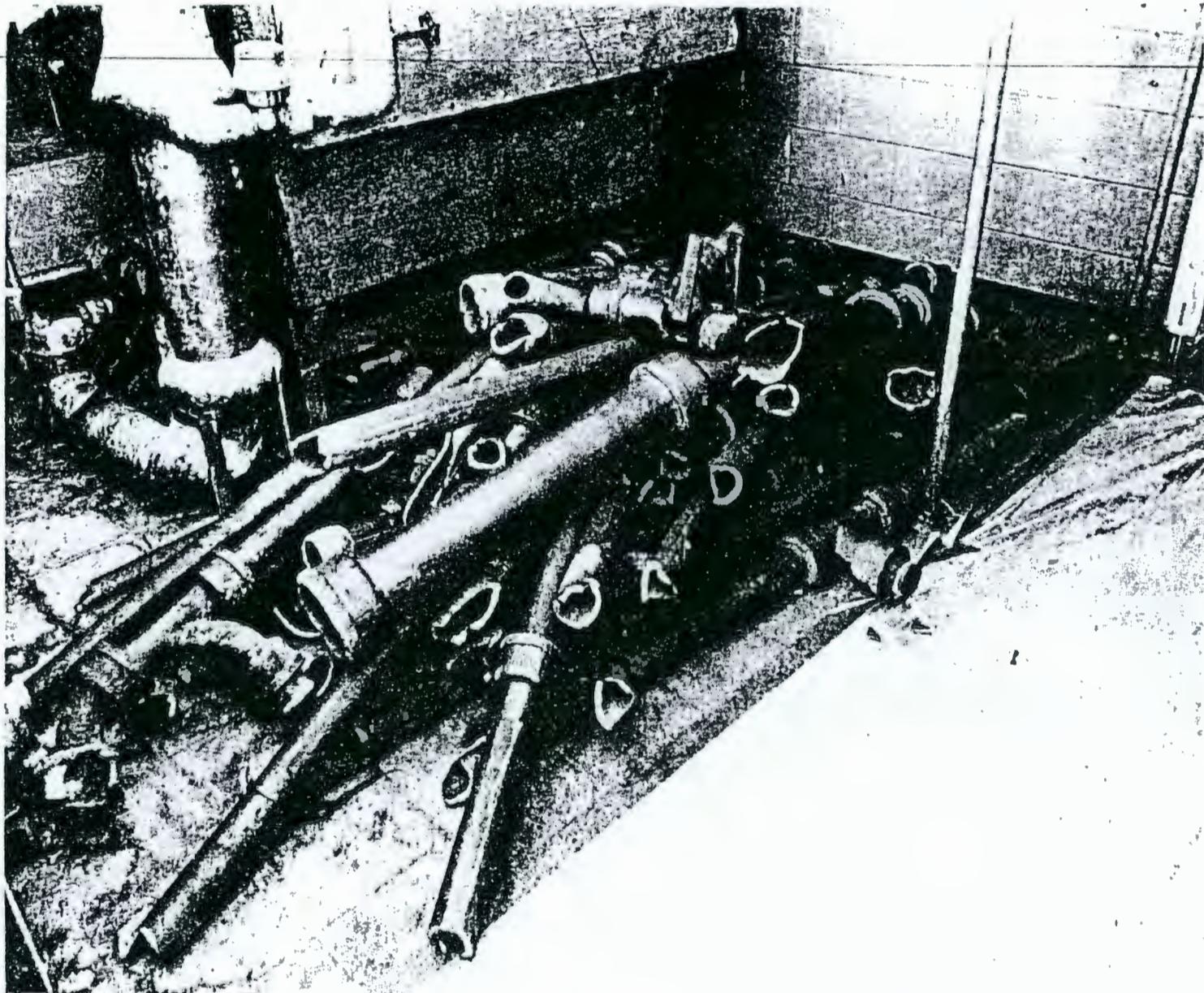


FIGURE 5.2.8-E  
NONCONTAMINATED WASTE  
108-F BUILDING DRAIN PIPE

Two thousand two hundred twenty five (2,225) smear samples and approximately five hundred (500) coupons, tile and concrete samples were collected and counted. Radionuclides found during the decommissioning of the 108-F building were, Pu238, Pu239, Sr90 in laboratories, and Co60, Cs137, Pu238, Pu239 and Sr90 in the cobalt exposure vault, Room 128. All the detailed data can be researched in the final release survey of the 108-F Building. (Radiation Survey Report Number 00322.)

#### 5.2.10 Remaining Decontamination Work

The central drain, which is in use at this time, lies in a sub-floor trench located on the first floor of the original structure. Contamination has been detected on the surfaces of this concrete trench, but a complete and accurate survey has not been conducted at this time. The trench has been sealed and no danger of a contamination spread exists. A complete decontamination effort will be conducted and a release survey will be written before the destruction of the 108-F building.

#### 5.2.11 Health and Safety Requirements

All decontaminating activities were performed with the utmost regard to the personnel involved. Special Work Procedures (SWP's), clothing, respiratory equipment, rubber or leather gloves, safety glasses and face shields were provided. Personnel working in the controlled zones utilized the equipment and clothing throughout the dismantling and decontaminating phases.

No personal injuries and no internal or skin contamination cases occurred during the dismantling and decontaminating of the 108-F Biological Laboratory.

### 5.2.12 Demolition of Building/Restoration of Site

The 108-F Building will be demolished, using standard demolition methods, and the area returned to a condition compatible with surrounding terrain when the following conditions exist:

- 108-F building completely decontaminated.
- All decommissioning activities completed in 100-F, 100-D/DR and 100-N Areas.

## 6.0 PROJECT SCHEDULE

### 6.1 Progress Record

#### 6.1.1 Week Ending February 18, 1983

Work commenced to make the 108-B Building habitable by turning on water, telephone hook-ups, utility power turned on, and office area on the first floor washed and polished.

#### 6.1.2 Week Ending February 25, 1983

Office furniture, lunchroom furniture, and equipment had been moved into the first floor of the 108-F Building.

#### 6.1.3 Week Ending March 4, 1983

Decommissioning Operations personnel moved into the 108-F Building.

#### 6.1.4 Week Ending March 18, 1983

Began removing equipment from the fourth floor of the 108-F Building.

#### 6.1.5 Week Ending March 25, 1983

All required documentations for commencement of the 108-F laboratory decontamination was completed.

6.1.6 Week Ending April 8, 1983

All laboratories on the fourth floor, with the exception of room 404, had been completed and ready for Radiation Monitor (RM) profile.

6.1.7 Week Ending April 22, 1983

All laboratories on the third floor had been stripped out. Room 404 on the fourth floor remained to be stripped. This required a special exhaust system.

6.1.8 Week Ending May 6, 1983

The removal of equipment and decontamination of laboratories was well within schedule. Only rooms 205, 206, 222, 223, 224, 404, and all laboratories on the first floor were remaining to be stripped of their equipment and decontaminated. All other areas in the 108-F Building had been conditionally released.

6.1.9 Week Ending May 13, 1983

Laboratory equipment removal had progressed to where only one room on the first floor and one room on the fourth floor remained to be dismantled (room 107 and 404). In addition to these two rooms, work remaining included removal of contaminated drains, ventilation duct and decontamination of several special purpose rooms, such as the cobalt 60 exposure vault (room 128) and room 107 annex (lead pig storage).

6.1.10 Week Ending May 20, 1983

The first shipment of radioactive waste was sent from the 108-F Building to the 224-U Building in 200-West Area (see details under contaminated waste Table 5-1.

6.1.11 Week Ending June 24, 1983

All contaminated materials (hoods, sinks, duct, vent, tile, benches, furniture, etc.) from the fourth floor to the third floor in the 108-F laboratory building had been removed as of June 24, 1983.

6.1.12 Week Ending July 1, 1983

Cleanup of the Co60 vault (room 128) commenced. Power usage and requirement to upgrade the heating and cooling systems of the 108-F office space were looked at by Kaiser Engineering for the extended occupancy of the Decommissioning Operations. (Figure 6.1.12-A, Room 128, Co60 Vault)

An accident investigation was conducted on Thursday, June 30, 1983 to determine the cause of a fire in the 108-F building on Wednesday, June 29, 1983. The purpose of this investigation was to determine primarily what happened, the response, and lessons to be learned from that incident. Results of that investigation are recorded in the UNC Type D Accident Investigation Report Number 8307. Briefly, an oxyacetylene torch was being used in room 404 to cut a 2½" drive shaft to a ventilation blower and debris fire was started. After the fire was extinguished, work continued in room 404 to remove the 108-F primary ventilation system. (Figure 6.1.12-B, Room 404 after fire.)

6.1.13 Week Ending July 29, 1983

All vertical drain piping down to the main building drain line has been removed. Free mercury was found in one vertical drain. The visible mercury was recovered and

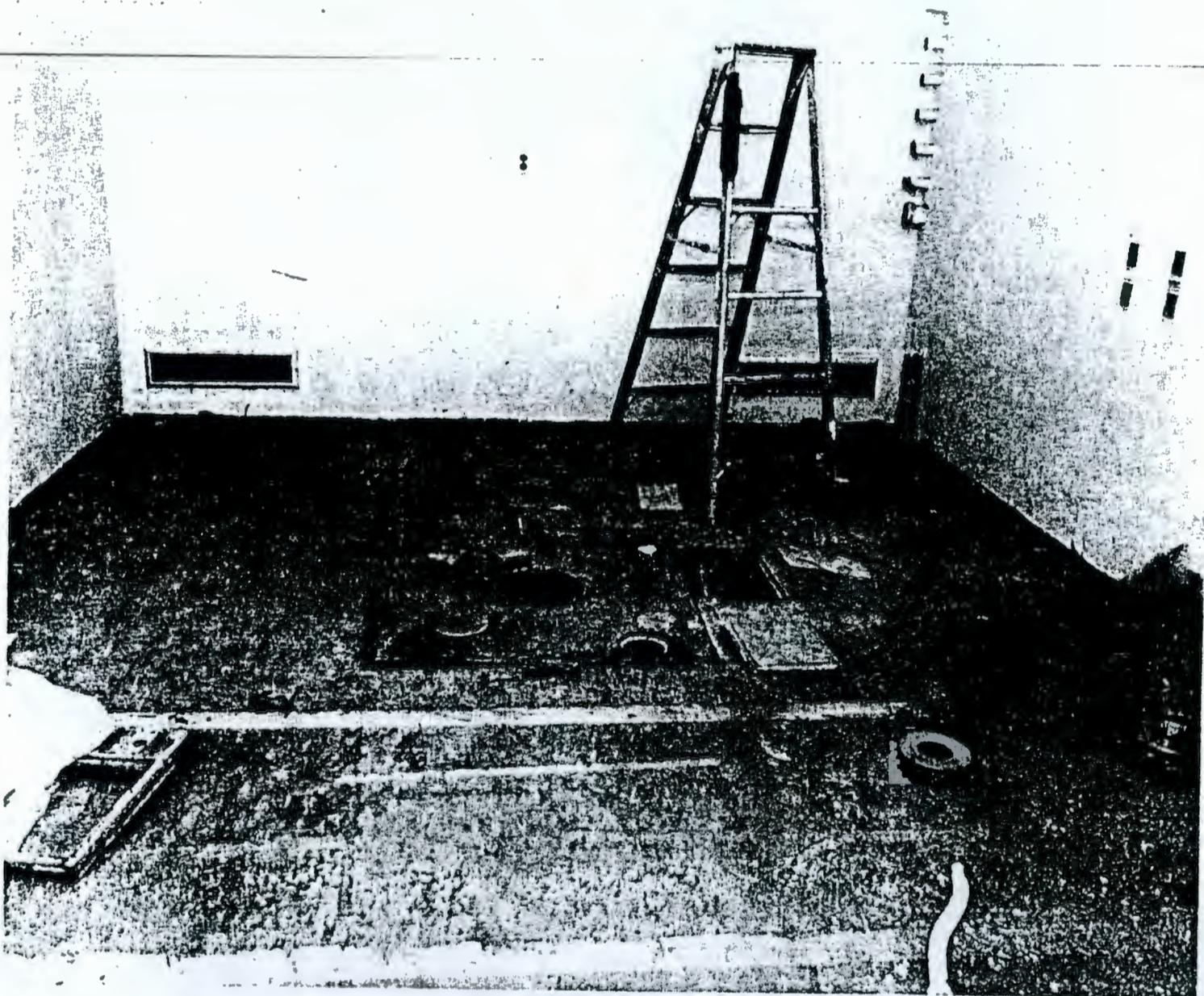


FIGURE 6.1.12-A  
COBALT 60 EXPOSURE VAULT  
ROOM 128 - 1Q8-F BUILDING

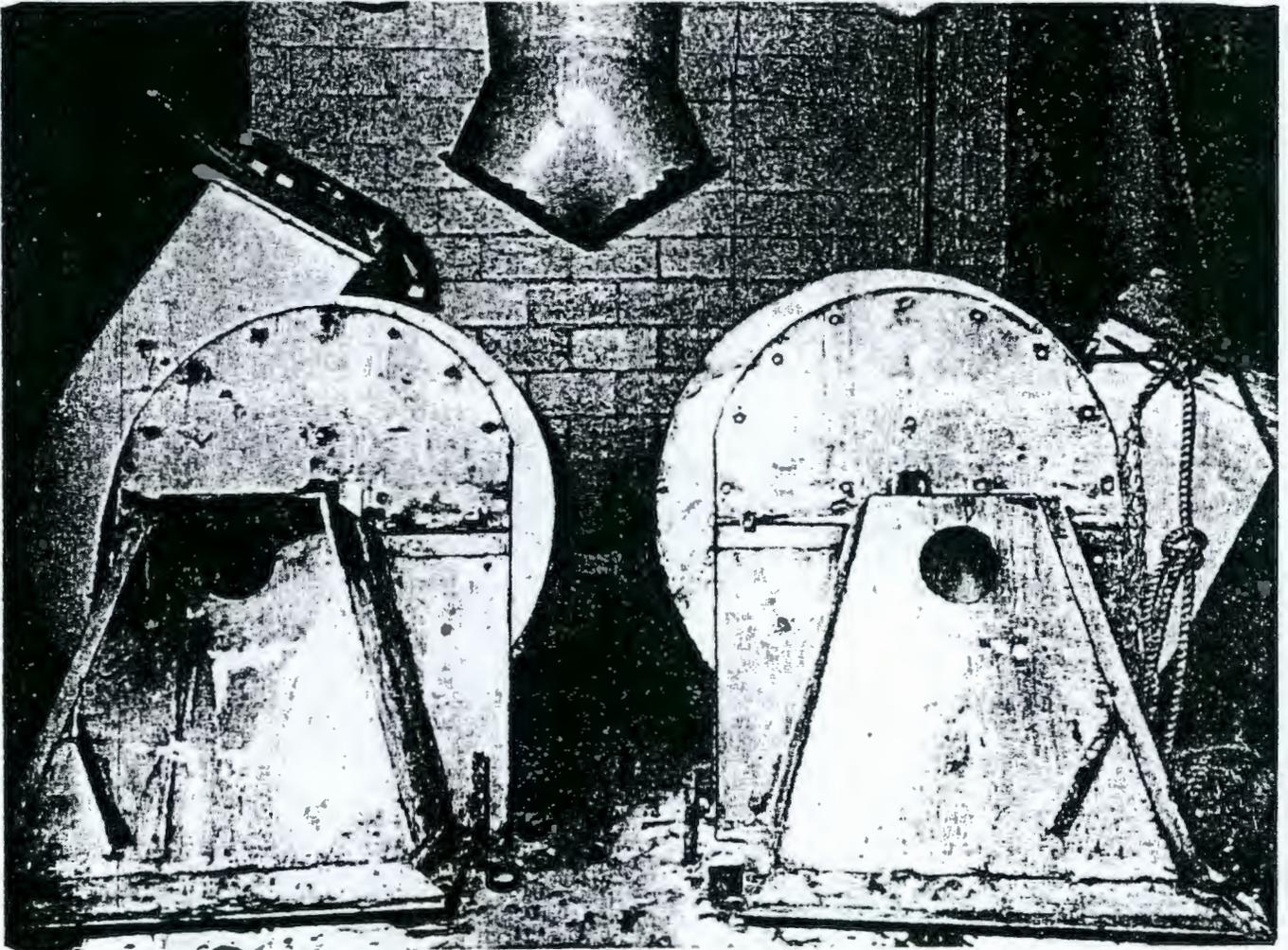


FIGURE 6.1.12-B

PRIMARY VENTILATION FANS  
POST FIRE PHOTO  
ROOM 404 - 108-F BUILDING

disposed of in the manner prescribed in UNI-M-29 "Shipment of Radioactive and Other Hazardous Materials". (See Figure 5.2.3, mercury contaminated drain pipe.)

6.1.14 Week Ending August 26, 1983

External exhaust duct on the 108-F building has been removed to approximately 95% complete. All tee's and elbow duct remaining on the exterior of the 108-F building has been found free from radioactive contamination by the Radiation Monitoring personnel. Removal of the Co60 cask and decontamination of room 128 was completed and released by Radiation Monitoring. Room 107, 107A and 107B was at this date still defined as a contaminated zone, limited to restrictive access.

6.1.15 Week Ending September 2, 1983

All areas in the 108-F building had been decontaminated and released by Radiation Monitoring with the exception of rooms 107A and 107B.

6.1.16 Week Ending September 16, 1983

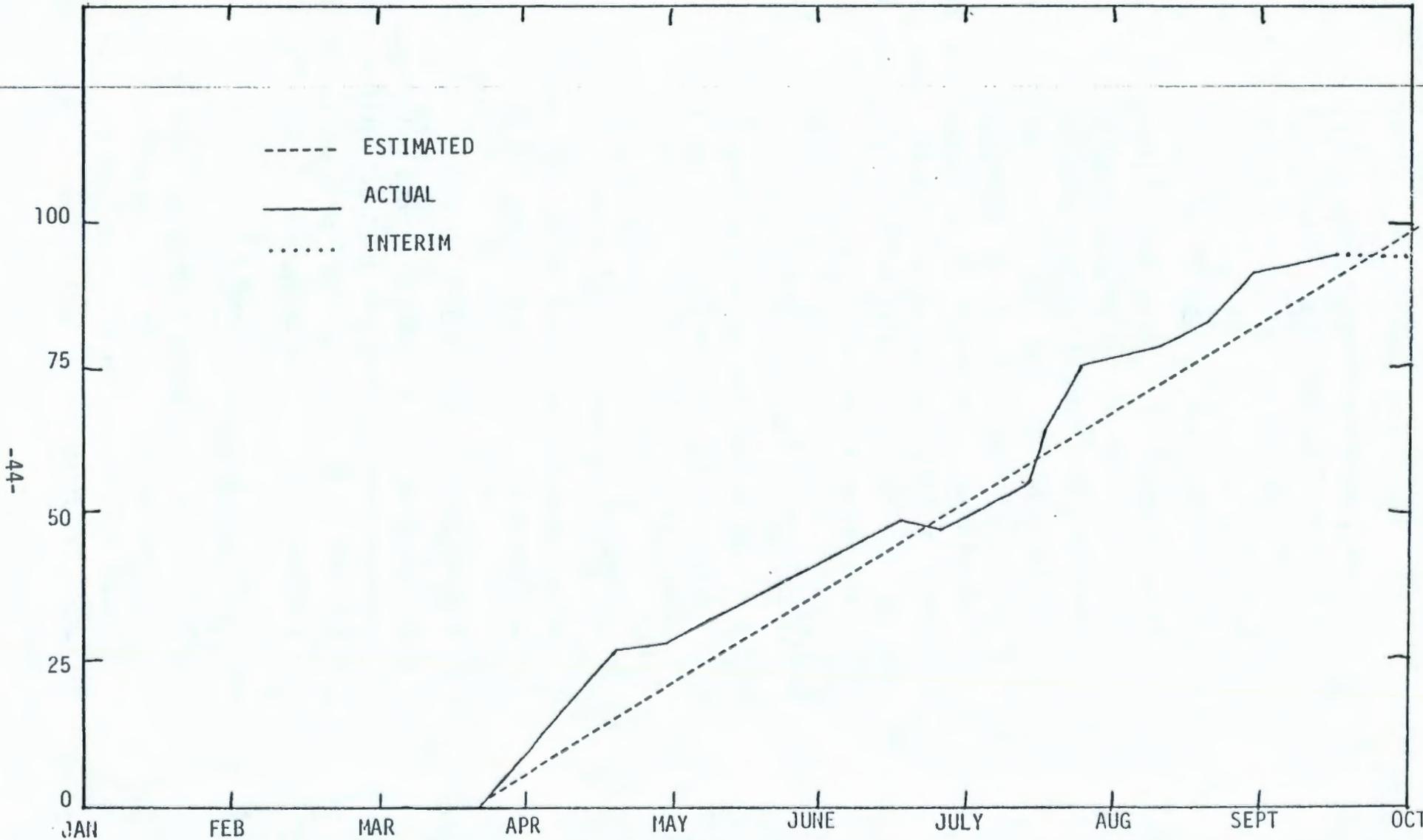
All rooms on the four floors of the 108-F building were determined to be free of radioactive contamination.

6.1.17 Week Ending September 16, 1983

All contaminated and potentially contaminated waste has been wrapped and removed from the 108-F building. Some duct and fan equipment has been stored outside the building awaiting shipment to the 200-West Area. (See Figure 5.2.4-C)

6.1.18 Week Ending September 23, 1983

The 108-F building was released by radiation monitoring on "Unrestricted Access" status. The only remaining contaminated area is the main drain trench located in the sub-floor, first level. The trench was sealed off from



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FY 1983 REPORT  
CHART 6.0  
PROJECT PROGRESS CHART - 108-F BUILDING

human access. Decontamination will be done at the onset of the building's demolition. (See Section 5.2.10)

## 7.0 PROJECT COSTS

The estimated costs and budgeted amount for accomplishing the decontamination phase of the 108-F Biological Laboratory decommissioning was \$500,000. Actual costs attributable to the project were \$488,000. These costs are summarized in Table 7-1.

The original schedule for decontaminating the laboratory was for work on the project to commence early in FY 1983, with project completion at the end of the fiscal year. Because of "continuing resolution" of the FY 1983 budget by Congress until almost mid-year, engineering work did not begin until about February, and actual decontamination activity until March. Nonetheless, by accelerating the efforts by the decommissioning personnel, the project was completed by the scheduled completion date.

## 8.0 SUMMARY AND CONCLUSIONS

The decommissioning of the remaining 100-F Area ancillary structures, which are all contaminated, and eventually the reactor and reactor building, is part of the long range strategy for the disposition of the Hanford Site retired production reactor areas. The decontamination of the 108-F Biological Laboratory, as part of its decommissioning plans, was one of the first projects to be funded by the Surplus Facilities Management Program for the disposition of the retired facilities.

All contaminated and uncontaminated equipment and systems were removed from the building and disposed of. The building was decontaminated to unrestricted use levels. Final release data can be reviewed in UNC Nuclear Industries' Radiation Survey Report Number 00322. This ninety-nine page report lists the release data on each of the survey grids.

TABLE 7-1  
COST SUMMARY FOR BUILDING 108-F  
DECOMMISSIONING PROJECT THRU FY 1983

<u>Activity</u>	<u>Total Project Cost (\$1000)</u>
Project Management	\$ 40
Engineering	19
UNC Support Personnel	59
Radiological & Environmental Monitoring & Control	48
Waste Disposal	18
Decontamination/Decommission Workers (RHO)	145
Other Contractor Services	56
Materials and Misc. Costs	14
Overhead Charges	89
	<hr/>
TOTAL	488

The occupational radiation exposure to personnel during the decontamination of the 108-F Biological Laboratory decommissioning was zero.

Decontamination of the 108-F Building did not compromise its structural integrity. Office portions of the building are currently in use by Decommissioning Operations personnel.

The project, funded as part of the DOE Surplus Facilities Management Program, accomplished the objective of radiologically releasing the structure so that it can later be demolished as part of the long range plan for the 100-F Area of removing all ancillary structures from this site. Performance of this project marks the start of the 100-F Area contaminated facility decommissioning.