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N/A



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THIS FORM IS SUBJECT TO CHANGE. CONTACT THE RPF FOR LATEST VERSION. (JUNE 1997)

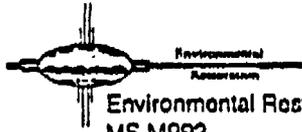
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35

ENVIRONMENTAL RESTORATION PROJECT

# Los Alamos National Laboratory

UNIVERSITY OF CALIFORNIA



Environmental Restoration Project  
MS M992  
Los Alamos, New Mexico 87545  
505-667-0808/FAX 505-605-4747

Date: September 22, 1998  
Refer to: EM/ER:98-374

Mr. Ted Taylor  
Department of Energy  
Los Alamos Area Office, MS A316  
Los Alamos, NM 87545

**SUBJECT: D&D REPORTS FOR FOUR TA-16 STRUCTURES (FORMER OU 1082, FU 3) TO FULFILL PM FOR FUNCTIONAL AREA A.3**

Dear Ted:

Enclosed are two copies of the Decontamination and Decommissioning (D&D) Reports that cover removal and cleanup of structures Technical Area (TA) 16-10, TA-16-13, TA-16-27, and TA-16-63. The D&D Reports are complete and submitted to the Department of Energy-Los Alamos Area Office (DOE-LAAO) in satisfaction of Appendix F Performance Measures for Fiscal Year 1998 (FY98) approved by DOE-LAAO on April 3, 1998, and revised May 14, 1998.

The D&D Reports are being submitted in fulfillment of the "good" level of performance for Functional Area A.3, D&D Work Performed in Fiscal Year 1998 (Enclosure 1), which requires submittal of the documents to DOE-LAAO for review and acceptance. These Environmental Restoration (ER) Project D&D Reports have been completed in accordance with all appropriate ER procedures and report on-line guidance.

If you have any questions or comments, please contact Miguel Salazar at 665-3056.

Sincerely,  
*Julie A. Canepa*  
Julie A. Canepa, Program Manager  
Environmental Restoration Project

JC/MS/dm

Enclosures: (1) PM for Functional Area A.3  
(2) Two Copies of the D&D Reports for Structures TA-16-10, TA-16-13, TA-16-27, and TA-16-63 (Former OU 1082, FU 3)

Received by ER-788  
SEP 28 1998  
*Dic*

Mr. Ted Taylor  
EM/ER:98-374

-2-

September 22, 1998

Cy (w/ enc.):

J. Newlin, CST-7, MS M992  
M. Salazar, EM/ER, MS M769  
RPF, MS M707, Record Package:306

Cy (w/o enc.):

T. Baca, EM, MS J591  
D. Boak, TSA-10, MS M992  
A. Dorries, TSA-11, MS M992  
V. George, EM/ER, MS M992  
R. Hutton, SAIC, MS J521  
D. McInroy, EM/ER, MS M992  
J. Mose, LAAO, MS A316  
H. Orr, EM/ER, MS M992  
EM/ER File (CT #C284), MS M992  
EM/ER File, MS M992  
D&D File # 98-038, MS M769

13 • 1306 • 5 • 1998



*Decommissioning Completion Report for  
High-Explosive Facilities at Technical Area 16  
(Buildings 27, 10, 13, and 63)*

*Larry Byars  
Decommissioning Project Leader  
Environmental Management Programs*

*September 1998*

**Los Alamos**  
NATIONAL LABORATORY



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LA-15000-1-1-9

## 1.0 INTRODUCTION

The University of California, Los Alamos National Laboratory (Laboratory) is tasked to decommission surplus facilities at TA-16 as directed by the Department of Energy (DOE). Tasks performed on this subcontract will be under the direction of the Laboratory's Environmental Restoration Project office (EM/ER) in compliance with DOE Order 5820.2A, Chapter V.

The twenty-five buildings at TA-16 were constructed in the 1940s for use in machining, processing, handling, and storage of the high explosive (HE) components of nuclear weapons. Most of these facilities have been out of service since the late 1950s and are in a state of disrepair. The Project Management Plan for decommissioning these facilities, #DAD-EM/ER-95-001, was approved in August 1995. The final report will be submitted when all twenty-five buildings have been decommissioned.

The hazards at these facilities have been characterized, and decommissioning began in August 1995 with seven bunkers and two storage buildings being completed in September 1995. Six HE process buildings, one storage shed, and one guard station were decommissioned in FY96.

In FY 97 work at TA-16 was stopped by direction from Department of Energy headquarters (DOE/HQ) to reconsider the historical significance of building TA-16-27 and the V-site buildings (TA-16-515, -516, -517, -518, -519, and -520). In October 1997, DOE/HQ gave direction through DOE/LAAO to proceed with the decommissioning of the remaining buildings on the TA-16 decommissioning list with the exception of the V-site buildings.

The purpose of this report is to document the completion of decommissioning work for buildings TA-16-27, -10, -13, and -63. All were completed in FY98.

## 2.0 DESCRIPTION OF PROJECT

This project was accomplished by placing two separate task orders on our decommissioning Basic Ordering Agreement (BOA). The first task order was awarded to NES Government Services on June 19, 1997 to decommission building TA-16-27. The second task order was awarded to Morrison Knudsen, Inc. on April 3, 1998 to decommission buildings Ta16-10,13, and 63. See Figure 1 for building locations.

### 2.1 Building 16-27

Building 16-27 was recently used as a storage facility, but it was primarily used to cast the HE lenses, and it contained large kettles and an elaborate water distribution system for precise temperature control. The building was a two-story wooden frame structure. The flooring on both levels was made of concrete that is constructed to function as a barrier for partial containment of He contaminated water. The different colors of pipe insulation were used to distinguish different temperatures of water used during the HE casting process. The building was approximately 8,001 square feet.

### 2.2 Building 16-10

Historical use of building 16-10 was as a manufacturing and storage building. The building was constructed in storage bays, but no evidence was found of any previous or current processing equipment. Approximately half of the building was constructed on a wooden sub floor with the remaining half constructed on a concrete slab. The building was wooden frame with a low-pitched roof constructed above wooden trusses. The building was 8,136 square feet in floor area on two levels.



### **2.3 Building 16-13**

TA16-13 is an exterior wooden platform. This platform was constructed of 10-in. steel I-beams with a wooden deck installed above. The I-beams were mounted on concrete footers. The structure was approximately 41 feet long by 20 feet wide.

### **2.4 Building 16-63**

Building 16-63 is a small storage building. It is constructed of a wooden frame with a low-pitched roof. The building is constructed on a concrete slab. This structure is located outside the HE-controlled area in the S-Site parking lot. The building is approximately 495 square feet in floor area.

## **3.0 DECOMMISSIONING OBJECTIVES**

### **3.1 Work Scope**

The scope of work for the two task orders included the decommissioning of four buildings located in TA-16. The buildings were used for high explosives manufacture, fabrication, and storage. The buildings were structure numbers 27, 10, 13, and 63. The decommissioning of these facilities included removal and disposal of all building structural components, piping, and earth barricades, both aboveground and belowground as well as all associated asbestos wastes, radioactive waste, and hazardous materials. The scope included the removal of all underground sumps and discharge piping to the outfalls.

At the close of decommissioning, shallow depressions remained where concrete slabs had been removed, and piles of earth remained from the demolition of the bunkers. Trenches created from the excavation of sumps and outfall pipes were backfilled to eliminate safety hazards, were compacted. The areas beneath the buildings, bunkers, sumps, and pipes were made accessible for RCRA Facility Investigation (RFI).

Currently, an RFI is being conducted at the TA-16 area. The RFI will conduct any environmental characterization and remediation required in the TA-16 area after the completion of building decommissioning.

### **3.2 Project Management/Oversight**

The following sections outline personnel responsibilities for this project:

- The Laboratory Decommissioning Project Leader managed this project's budget, schedule, and technical performance. The Laboratory provides, implements, and operates the project planning and control system for the Environmental Restoration Project. The project leader uses this system to track and report cost and schedule variances to DOE.
- The DOE Field Project Coordinator ensured that the project meet DOE performance objectives and comply with all federal, state, and local laws and regulations.
- The Contractor Task Manager ensured that all terms outlined in the contract be completed. Terms include decontamination, demolition, waste segregation, waste transportation, waste disposal, worker safety, and site restoration.

High-Explosive Facilities at Technical Area 16

- A Laboratory health and safety representative provided support and oversight of the contractor's health and safety program.
- The Contract Administrator placed the decommissioning task order and modifications approved by the Project Leader, acted as Laboratory representative on contractual matters with the contractor, ensured prompt payment of invoices and ensured prompt and equitable resolution of contractual disputes.

**4.0 SUMMARY OF DECOMMISSIONING**

**4.1 Building Characterization**

From April to June 1994, Los Alamos conducted preliminary characterization activities of the 25 abandoned buildings at TA-16. These activities were conducted through a task order contract in collaboration with ICF Kaiser Corporation. The methods used to develop and quantify the baseline information collected during preliminary characterization included

- reviewing historical information,
- conducting a visual inspection,
- conducting field tests for HE,
- implementing surveys for radiological contamination,
- reviewing engineering drawings,
- conducting a hazard analysis,
- estimating decontamination and decommissioning waste volumes,
- taking and analyzing photographs, and
- reviewing previous asbestos surveys.

This work uncovered the following hazards:

- HE contamination,
- pervasive asbestos-containing building materials and pipe insulation,
- lead-acid batteries,
- lead-based paint,
- low-level radioactive contamination in Building 92, and
- potential hantavirus.

Some structures appeared ready to collapse because of weathered components and/or load from earthen barricades. Rodent droppings, potentially containing hantavirus, were observed in all structures. A limited amount of radioactive contamination was found in one structure. PCBs were present in ballasts from fluorescent light fixtures.

#### 4.2 Decommissioning Operations

The following table describes the procedure Los Alamos followed to successfully complete this component of the project.

Table 4.2.1 Decommissioning Operations

Task	Task Description
Contract procurement	The Laboratory used the existing decommissioning BOA (basic ordering agreement) to obtain fixed-price, competitive bids from two BOA contractors. Los Alamos selected NES Government Services for the task at Building 27 and Morrison Knudsen Corporation for this task at Buildings 10, 13, and 63. The tasks were awarded on the basis of low bid.
Readiness review and contractor mobilization	Los Alamos conducted a formal readiness review to ensure that all health, safety, and environmental issues had been addressed by both Laboratory and contractor personnel before mobilization. The signed-off readiness review checklist served as the notice to proceed for the contractor.
Blast shield removal	Blast shields consisted of steel-sheet piling covered with a dirt berm. They were removed with standard excavation equipment, and the steel was recycled.
Asbestos removal	The contractor submitted an asbestos characterization, removal, handling, and disposal plan that was approved and incorporated into the site-specific health and safety plan. The resultant asbestos, consisting of Class II roofing and siding material, as well as Class I thermal pipe insulation was removed and disposed of at the Keers Environmental AM Facility in Albuquerque, NM. (AM not defined.)
Interior piping removal	Because all utilities had been disconnected for several years, the inside piping was dry. Based on past experience, the Laboratory believed that the vacuum pipes contained HE residue. Therefore, special handling procedures were put into action. All pipes were spot tested for HE and decontaminated if necessary before being sent to a recycling facility.
Building dismantlement	The buildings were dismantled, and the pads and foundations were removed using standard construction equipment (e.g., backhoe, loader, and blade). The workers then segregated materials by waste type.
Soil removal	Because the sumps, drainlines, and building foot prints were considered potential release sites (PRSSs), the remedial action contractor sampled the soil and removed contamination before the excavations were back filled. In some cases the remedial action contractor completed the back fill.
Concrete crushing	All clean concrete was staged on site to be crushed and recycled by another contractor using a Government-owned concrete crusher.
Site restoration	The entire site was graded to provide natural drainage and reseeded with a blend of native grasses (50% buffalo grass and 50% blue grama grass).

**5.0 WASTE MANAGEMENT**

**5.1 Management of Waste Generated**

The Contractors segregated the waste as it was generated and managed it according to type and waste stream.

- Hazardous waste was placed in a less-than-90-day storage area until it could be shipped off-site or treated by burning at the open burn pad.
- Asbestos was packaged and shipped to an asbestos landfill.
- Concrete was stockpiled for crushing and reuse.
- Metals and asphalt were sent to an off-site recycler.
- The unpainted wood was used as fuel at the burning pad to flash the HE contaminated materials.

**Table 5.1.1 Waste Types and Volumes for Building TA-16-27**

Type	Estimated Volume (C.Y.)*	Actual Volume (C.Y.)
Friable asbestos	30	79
Nonfriable asbestos	60	49
Concrete	1500	1700
Metal	Not Estimated	340
HE waste	Not Estimated	60
Unpainted wood	Not Estimated	40

**Table 5.1.2 Waste Types and Volumes for Buildings TA-16-10, 13, and 63**

Type	Estimated Volume (C.Y.)	Actual Volume (C.Y.)
Asbestos	100	950
Concrete	600	800
Metal	Not estimated	90
HE waste	0	0
Rad Contaminated concrete	40	3
Unpainted wood	Not Estimated	60

\* C. Y. = cubic yard

**5.2 Final Disposition**

The following tables describe material sent off-site for disposal.

**Table 5.2.1 TA-16 Decontamination and Decommissioning Off-Site Waste Shipments**

Waste Type	Quantity Shipped (C.Y.)	Landfill Shipped To	Completed Manifest on File
Friable asbestos	79	Keers, Mountainair, NM	Yes
Nonfriable asbestos	1,000	Waste Management, Rio Rancho, NM	Yes
Flushed HE residue (RCRA treated)	60	Waste Management Colorado Springs, CO	Yes
Sludge from V-site septic tank	270 gal.	Butterfield Station, AZ	Yes
Clean debris	1260	L. A. County	Yes

**Table 5.2.2 Material Reused On-Site**

Material	Volume (C.Y.)	Use at TA-16
Crushed concrete	2500	fill for erosion control
Unpainted wood	60	fuel for burn pad
Clean soil	200	fill and grading

**Table 5.2.3 Material Sent to Off-Site Recycler**

Material	Volume	Recycler	Use
Wooden trusses	20 C.Y.	Contractor	Reuse
Chain-link fence	200 Linear Ft	Contractor	Reuse
Asphalt	60 C.Y.	Contractor	Remelt
Metal	430 C.Y.	Ace Metals & Albuquerque Salvage	Remelt

**5.3 Waste Minimization**

**5.3.1 Decontamination**

Workers used a concrete saw to remove approximately 100 square feet of radioactive contamination concrete floor in Building 10 before demolition. This waste was then packaged and sent to TA-54 for size reduction before disposal. This decontamination resulted in reducing the potential low-level radioactive waste from over 40 cubic yards to less than 3 cubic yards.

The sumps, drain lines, and the sludge removed from the lines were flushed on the burn pad to remove HE contamination before disposal as industrial waste.



unanticipated DOE/HQ preservation priorities it appears that the review process was not adequate in this case. One problem that was identified during the project was a shortage of resources in both the Laboratory and the DOE to do cultural resource reviews. In view of the fact that many future decommissioning projects involve facilities that are eligible for historic preservation, a review of the process and the resources available for making these assessments seems to be in order.

Another factor that caused a significant cost increase was the requirement to preserve numerous artifacts from Building 27. This requirement was not made known until the fixed price contract was in place, and the items to be removed were not identified until the contractor was working on-site. It was necessary to remove each item by hand, survey them for HE and radioactive contamination, and transport them to a staging area. A clear policy needs to be established regarding artifact removal from surplus contaminated buildings.

The cost also escalated because of the discovery of previously unidentified asbestos in Buildings 27 and 10, additional underground drain lines, and liquid in a septic tank that was thought to be dry. Additional characterization might have identified some of these items, but it is not clear that the overall costs would have been less. Another option would be to bid the waste disposal on a per unit volume basis. This probably would have saved money on the asbestos and drainlines.

#### 8.0 REFERENCES

US Department of Energy, September 26, 1988. "Radioactive Waste Management," DOE Order 5820.2A. Washington, DC (DOE 1988).

Los Alamos National Laboratory, August 1995. "Decommissioning Management Plan, HE-Contaminated Buildings, TA-16," Los Alamos, New Mexico (Los Alamos National Laboratory document DAD-EM/ER-95-001).

Los Alamos National Laboratory, June 1994. "D&D Preliminary Characterization Report, TA-16," Volumes I & II, Los Alamos, New Mexico ().

Los Alamos National Laboratory, March 1996. "Voluntary Corrective Measure Plan SWMUs 16-026(m-p), 16-029 (k,l,q,s,t,u)."

Los Alamos National Laboratory, April 1995. "Proposed Effects and Treatment of Effects for Decontamination and Decommissioning of 28 S-Site Properties: TA-16," Los Alamos, New Mexico (LA-UR-95-1334)

**APPENDIX A**  
**ACCEPTANCE INSPECTION CHECKLIST**

X-Sender: larryb@fimad.lanl.gov  
Mime-Version: 1.0  
Date: Fri, 21 Aug 1998 14:02:26 -0700  
To: castanon\_jesse@lanl.gov  
From: Larry Byars <larry\_byars@lanl.gov>  
Subject: Final Inspection walkthrough For TA-16-10,13,63 Decommissioning Project  
Cc: larry\_byars@lanl.gov, miguels@fimad.lanl.gov

I conducted a final walkthrough of the subject project on Friday August 14, 1998 and noted the following items remaining to be completed.

- \* Some touch-up on grading
- \* Remove tree brush
- \* Complete reseed and mulch

As soon as these items are complete we can close this task order.

Larry L. Byars, P.E.  
Decommissioning Project Leader  
EM/D&D M.S. M769  
P.O. Box 1663  
Los Alamos, NM 87544  
Phone: 505-667-8169  
FAX: 505-667 9710

# Los Alamos

NATIONAL LABORATORY

## memorandum

Decontamination & Decommissioning, MS M769  
Environmental Management Programs

To/MS: Distribution  
From/MS: Larry Byars, EM/D&D, MS M769  
Phone/FAX: 7-8169/7-9710  
Symbol: EM/D&D:98-020  
Date: March 21, 1998

MS M769

**SUBJECT: FINAL INSPECTION FOR BUILDING 27, DRAINLINES AND  
SUMPS DECOMMISSIONING PROJECT**

**ATTENDEES:**

Debbie O'Connell, NES Government Services  
Bill McCormick, ESA-FM  
Larry Byars, EM/D&D  
Pat Horkman, NES Government Services  
Veronica Martinez, DOE/LAAO  
Roger Goldie, ESA  
Susan Cummings, ESA-FM

Restoration was complete at the footprint of building 27 and at the drainline removal sites except as noted on the attached sketch. The spoils piles and waste drums remaining are the responsibility of the remedial action field team that is still on site.

NES has removed one field trailer, but has left one on site to use during the future concrete crushing contract.

With the exception of the final report, all requirements of this task order have been met. It can be closed as soon as BUS processes the outstanding change orders, modifies the contract and we receive the final report.

LB:ng

Attachment: a/s

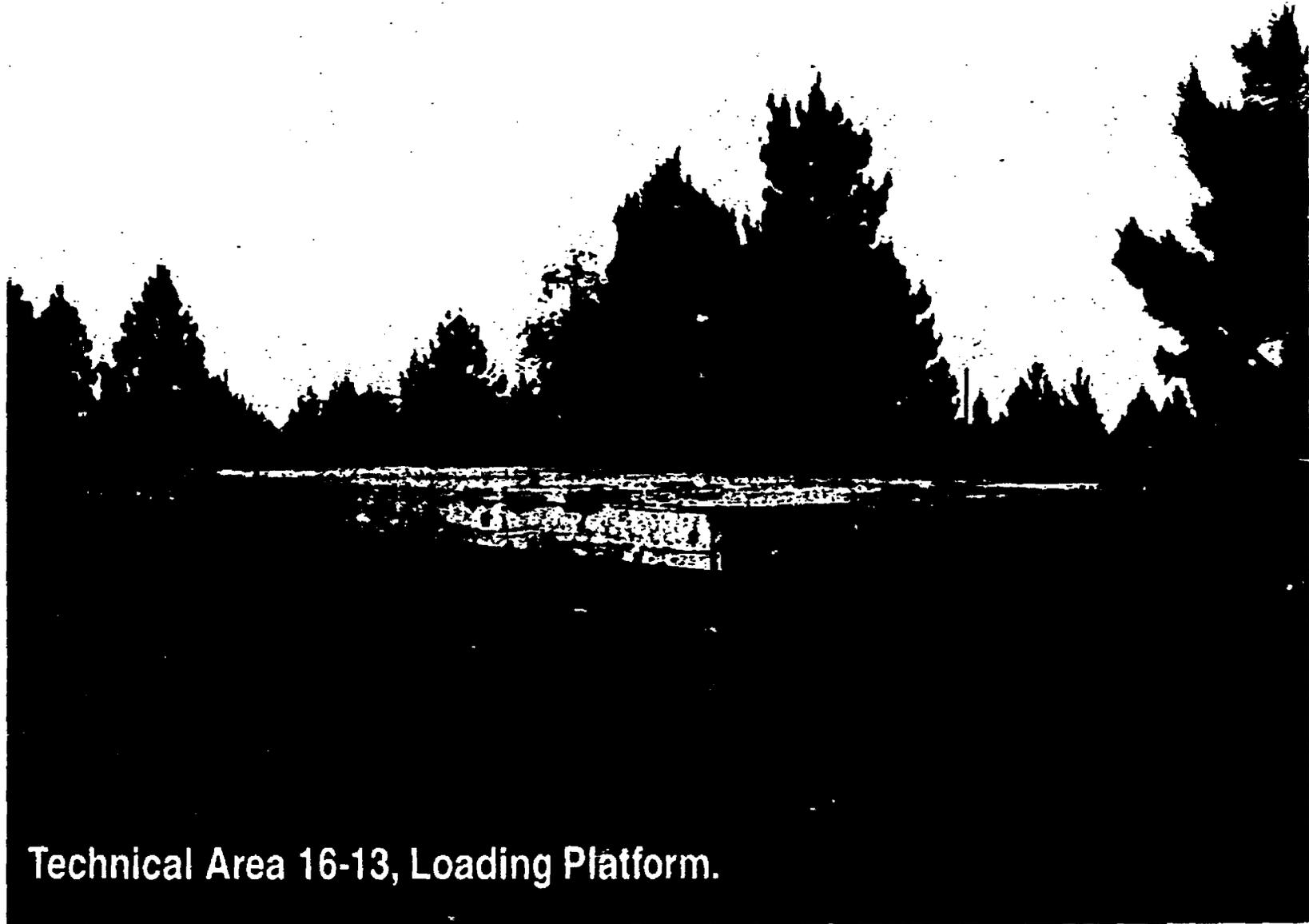
Cy. w/Att.:

D. O'Connell, NES Government Services  
P. Horkman, NES Government Services  
S. Cummings, ESA-FM-ESH, MS C928  
R. Goldie, ESH-5, MS C928  
K. Rendell, FSS-6, MS M984  
A. Bailey, BUS-5/ER, MS M992  
M. Salazar, EM/D&D, MS M769  
E. Christie, DOE/LAO, MS A316  
J. Mose, DOE/LAO, MS A316  
T. Nguyen, ESH-5, MS K494  
B. McCormick, ESA-FM-ESH, MS C928  
M. Sanders, EM/D&D, MS M769  
V. Martinez, DOE/LAO, MS A316  
R. Michelotti, EM/ER, MS J563

w/o att.:

Decommissioning file, MS M769  
CIC-10, MS A150

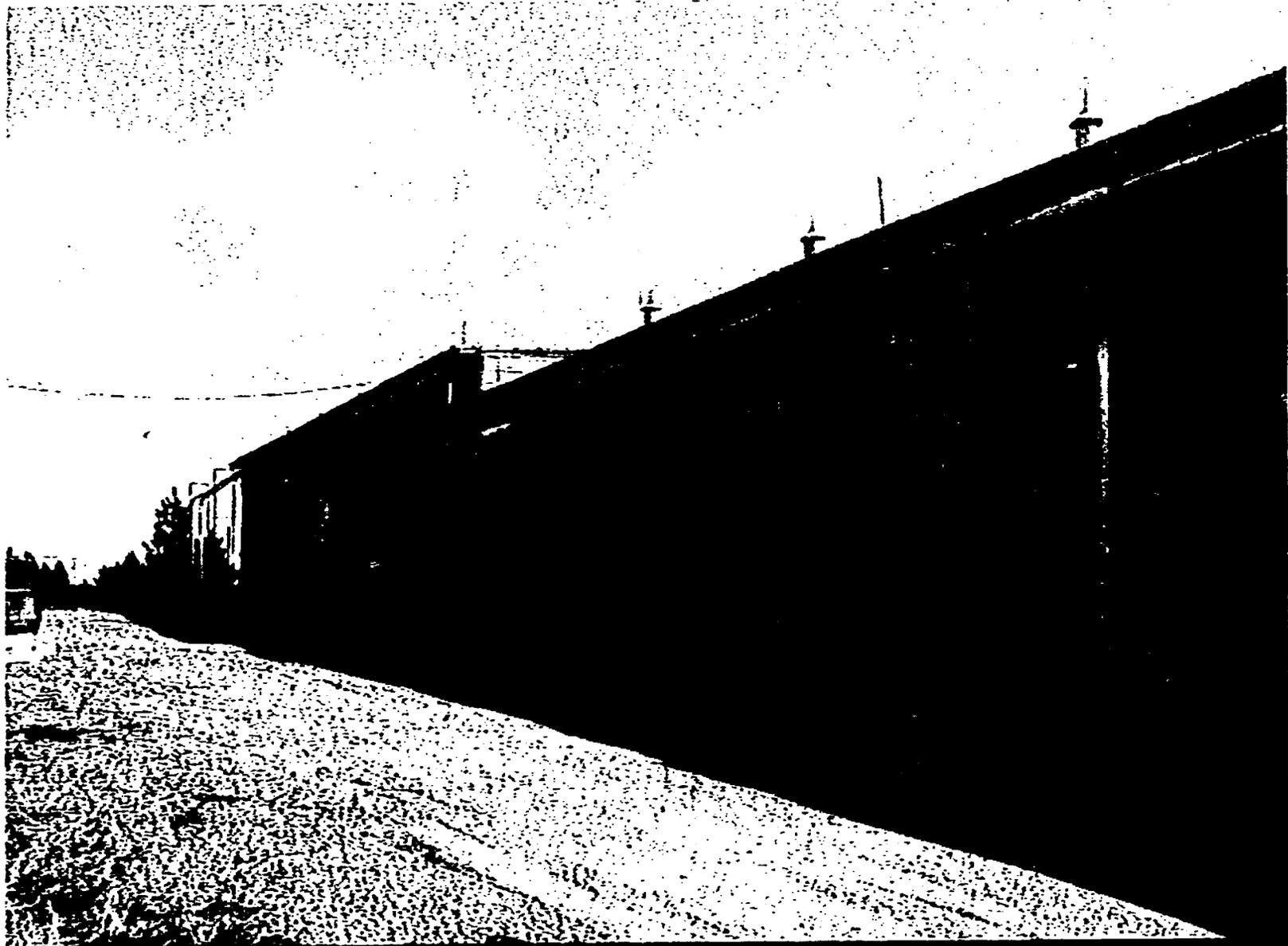
**APPENDIX B  
PHOTOGRAPHS**



Technical Area 16-13, Loading Platform.



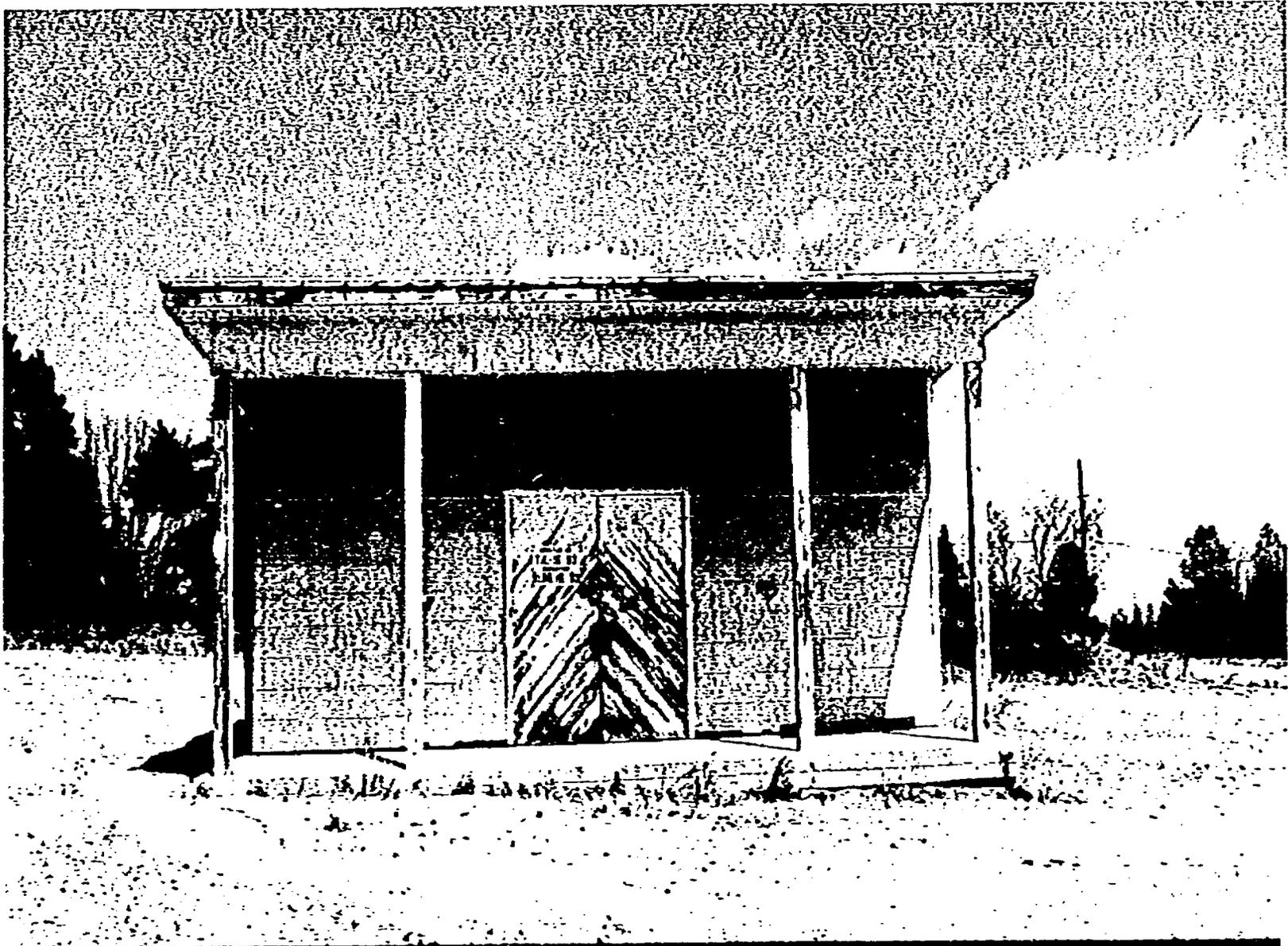
Exterior view of Building TA-16-10.



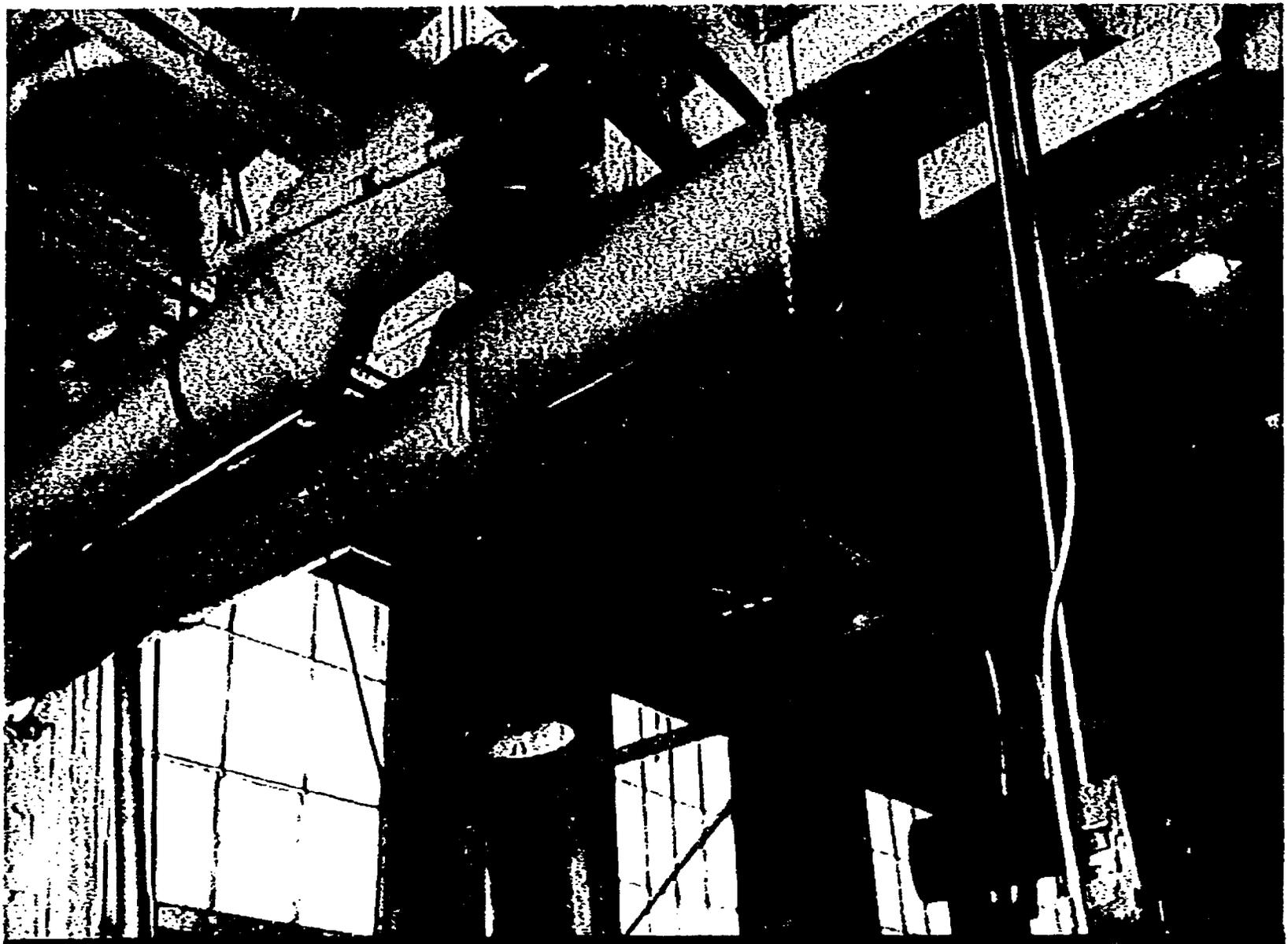
Exterior view of Building TA-16-10.



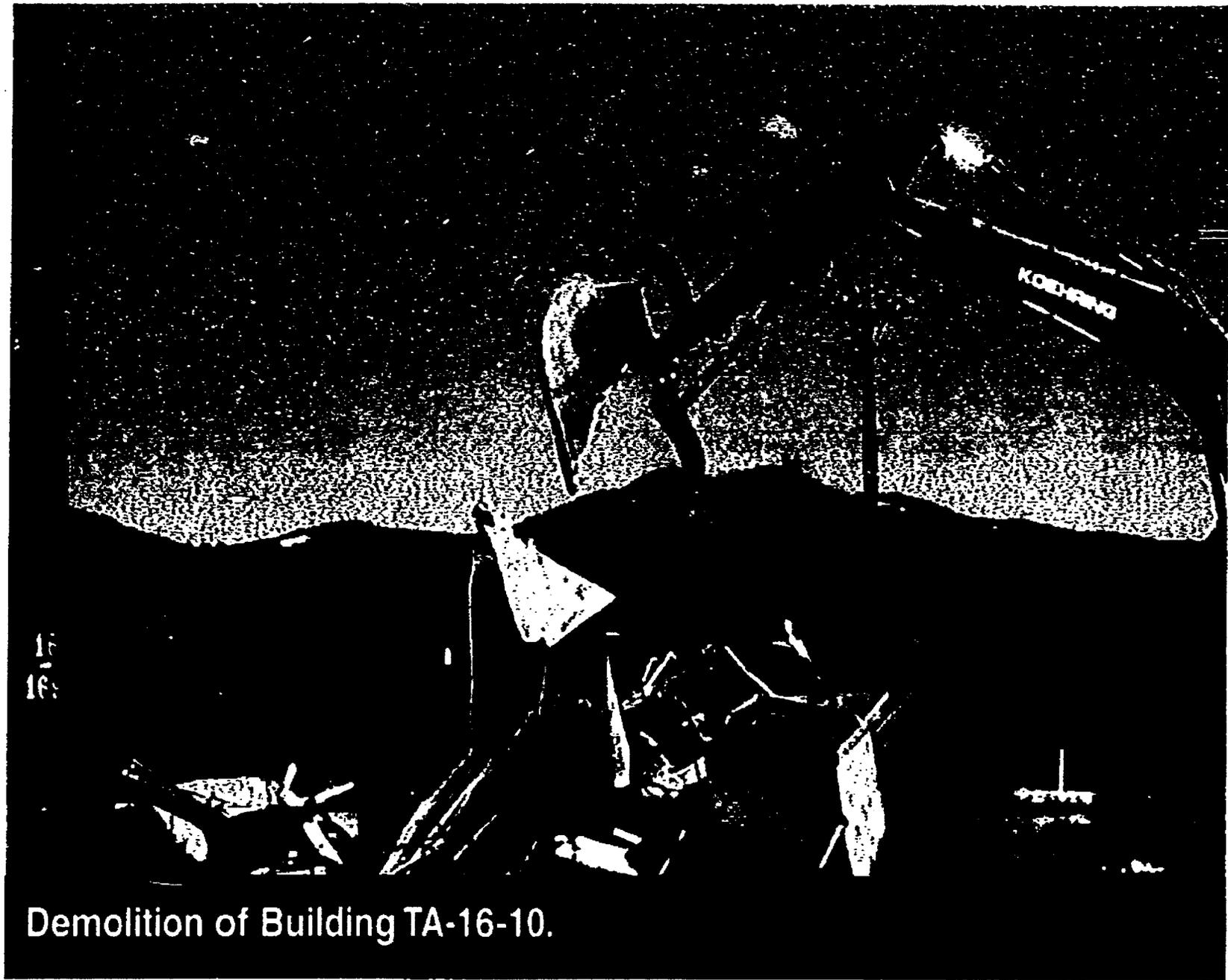
Exterior view of Building TA-16-27.



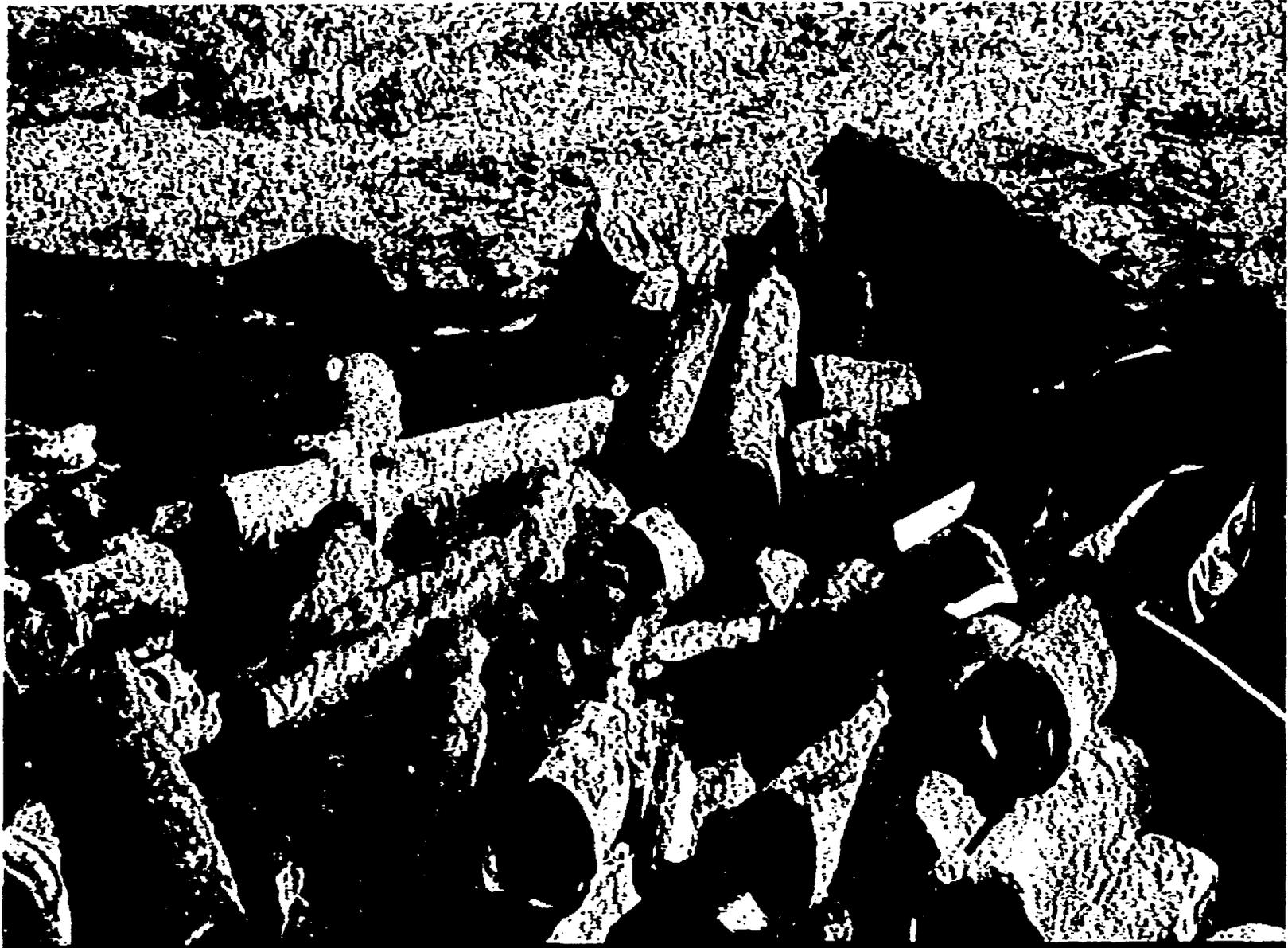
**Exterior view of Building TA-16-63.**



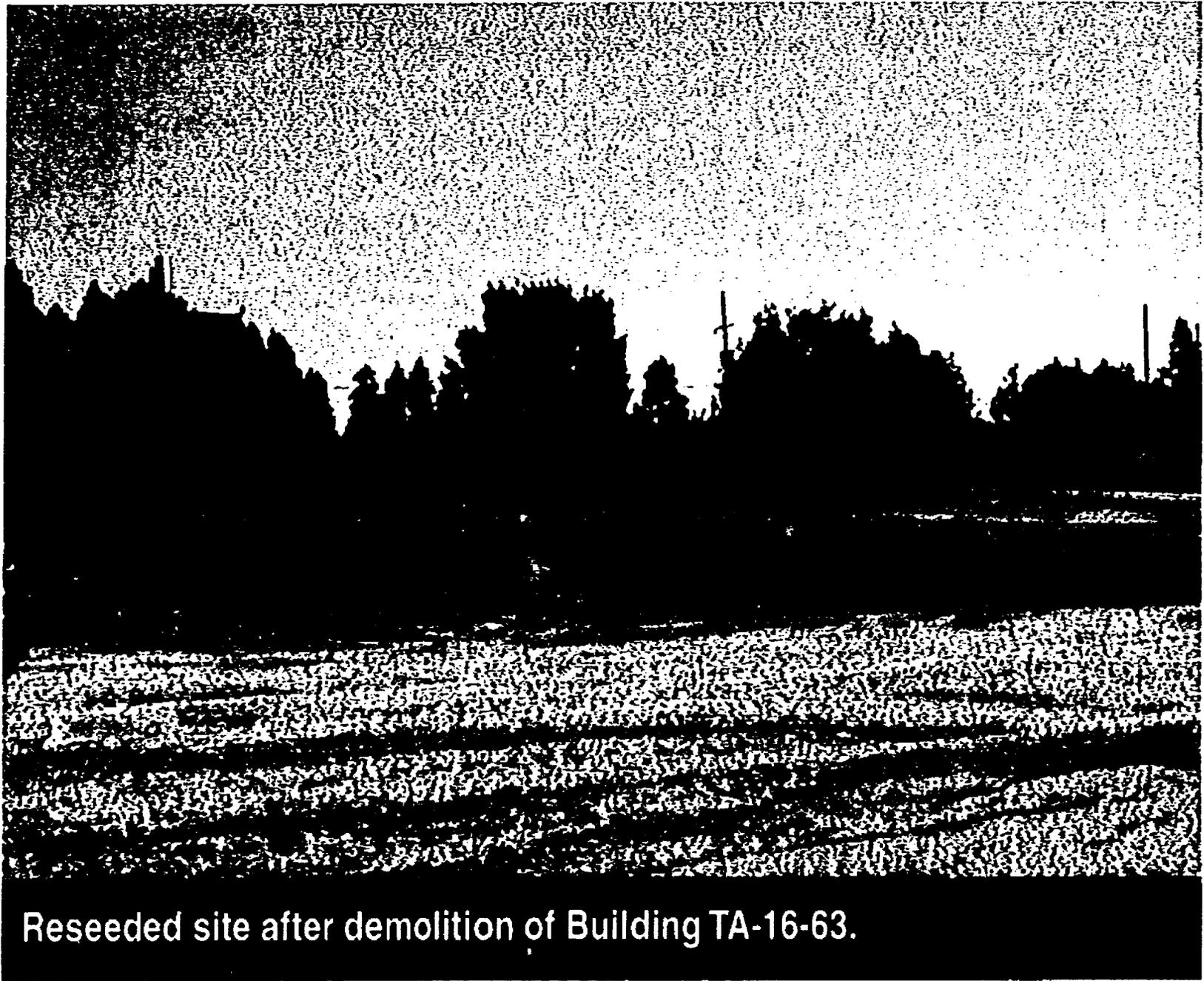
Interior piping dismantlement in Building TA-16-27.



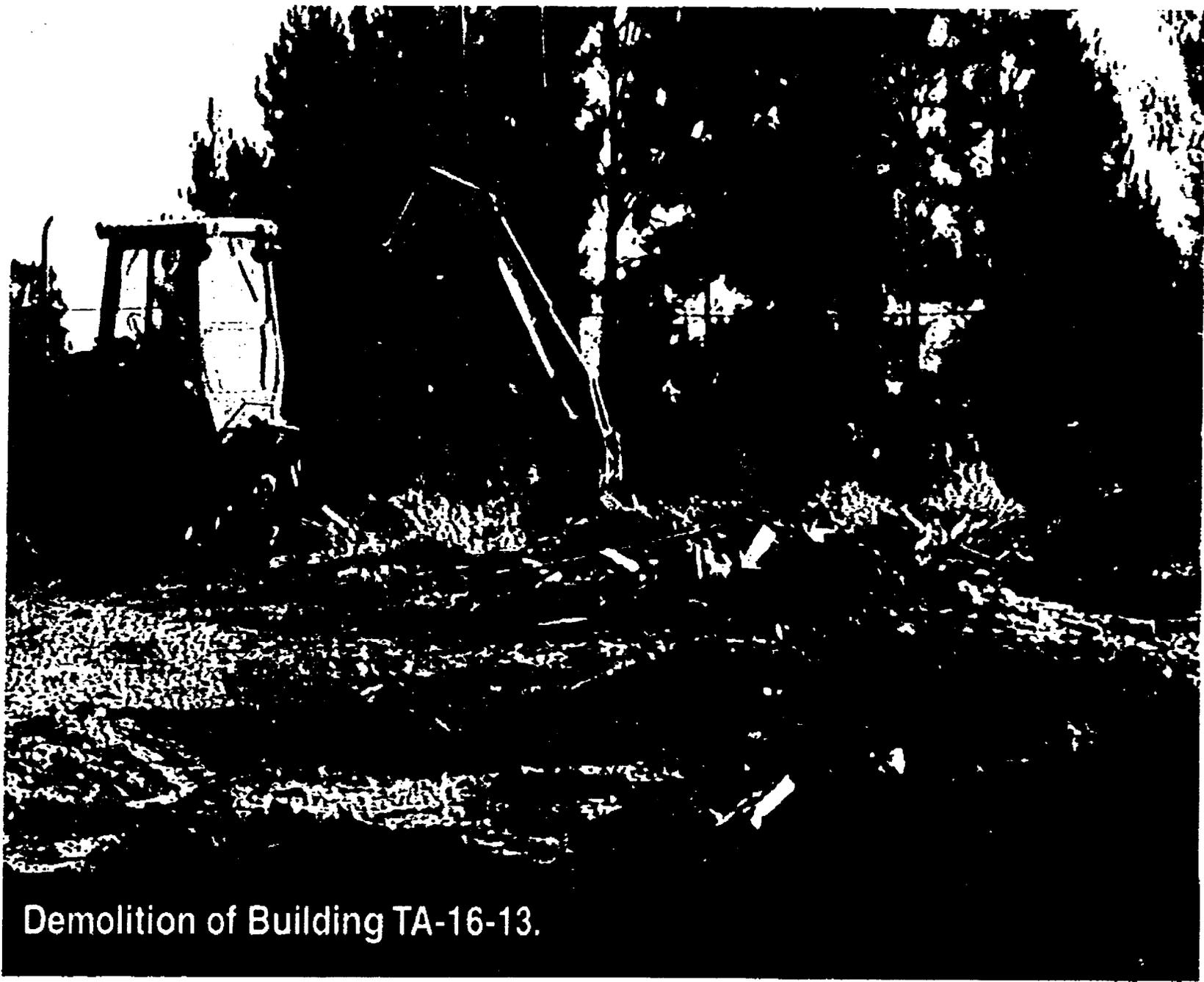
Demolition of Building TA-16-10.



Drain pipe removed from V-site.



Reseeded site after demolition of Building TA-16-63.



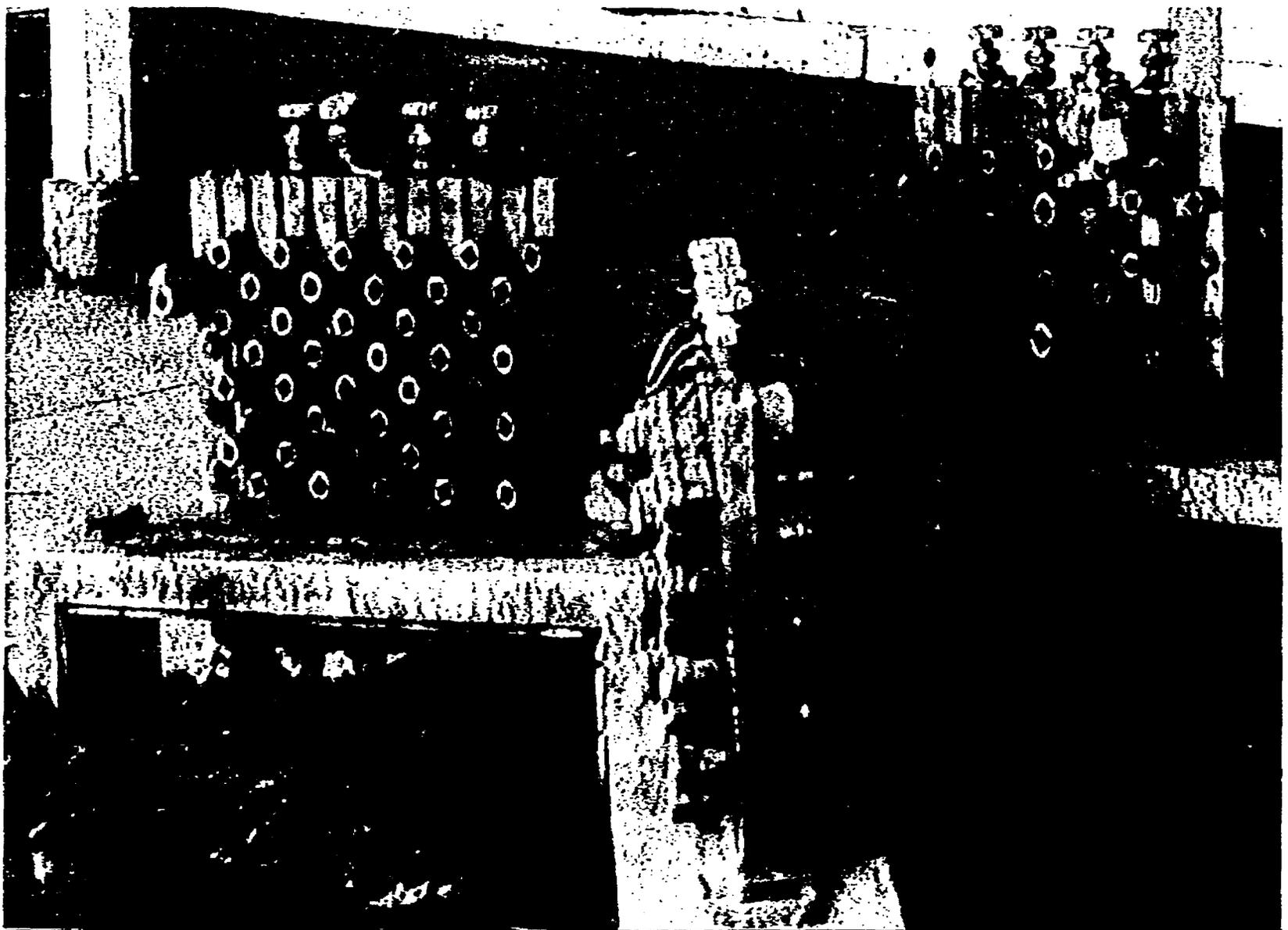
Demolition of Building TA-16-13.



Reseeded site after demolition of Building TA-16-10.



Metal Recycling from TA-16-10.



Historical artifacts from TA-16-27.

**APPENDIX C**  
**CERTIFICATE OF COMPLETION**

Miguel D. Salazar,4/29/98 3:24 PM -0700,Completion of deco

---

1

X-Sender: miguels@fimad.lanl.gov  
Mime-Version: 1.0  
Date: Wed, 29 Apr 1998 15:24:22 -0700  
To: canepa\_julie@lanl.gov  
From: "Miguel D. Salazar" <miguels@lanl.gov>  
Subject: Completion of decommissioning field activities for TA-16 building  
27  
Cc: roym@lanl.gov, larryb@fimad.lanl.gov, jmose@doe.lanl.gov

Building 27 has been dismantled and the area has been graded and reseeded. The completion report for this building will be incorporated with the remaining buildings to be decommissioned at TA-16 this year.

On the south side of building 27 some drain lines were found in March and removed. The trenches have been left open for Roy Michelotti to deal with. Some areas in V-site have also been turnover to Roy. These involve PRS's and will not affect Decommissioning.

---

Printed for Larry Byars <larry\_byars@lanl.gov>

1

LANL - INDOOR - 433

Larry Byars.9/10/98 10:46 AM -0700,Completion notice for T

1

X-Sender: larryb@fimad.lanl.gov  
Mime-Version: 1.0  
Date: Thu, 10 Sep 1998 10:46:02 -0700  
To: castanon\_jesse@lanl.gov  
From: Larry Byars <larry\_byars@lanl.gov>  
Subject: Completion notice for TA-16 Buildings 10,13.&63 Decommissioning  
Cc: larry\_byars@lanl.gov, miguels@fimad.lanl.gov, mike\_sanders@lanl.gov

All requirements of the subject Task Order are now complete. I performed an inspection of the re-seeded areas on 9/9/98 and all deficiencies have been corrected. This Tack order can now be closed.

Larry L. Byars, P.E.  
Decommissioning Project Leader  
EM/D&D M.S. M769  
P.O. Box 1663  
Los Alamos, NM 87544  
Phone: 505-667-8169  
FAX: 505-667 9710

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