

PERMIT ATTACHMENT L FIGURES

(for Attachment G and Attachment M figures, see Attachments G and M)

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Appendices with Figures

Appendix A-1: Photographs of the Hazardous and Mixed Waste Management Areas at the HWHU

Appendix A-2: Photographs of the Hazardous Waste Management Areas at the TTU

Appendix A-3: Photographs of the Hazardous and Mixed Waste Management Areas at the RMWMU

Appendix A-4: Photographs of the Hazardous and Mixed Waste Management Areas at the AHCU

Appendix A-5: Photographs of the Hazardous and Mixed Waste Management Areas at the MSB



New Mexico

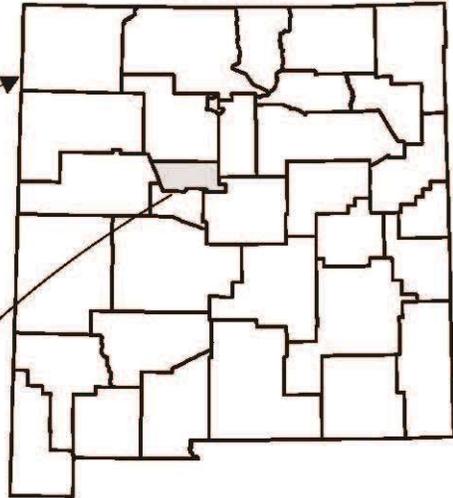
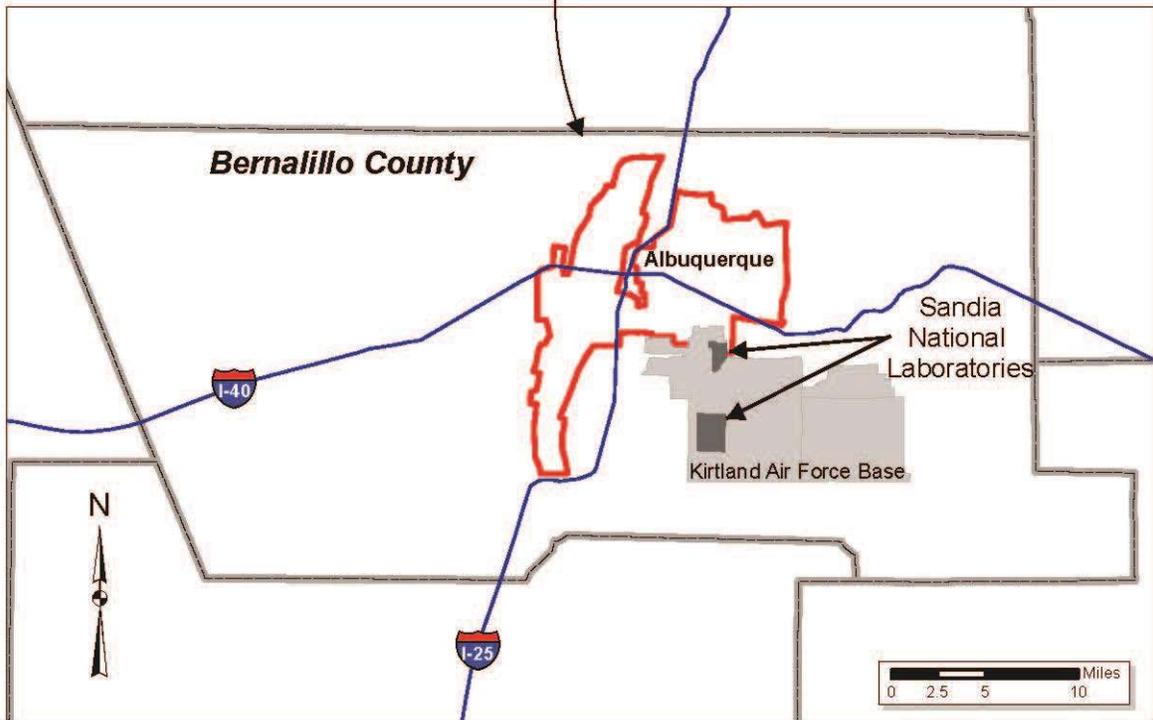


Figure 1
Regional Location Map of
Sandia National Laboratories



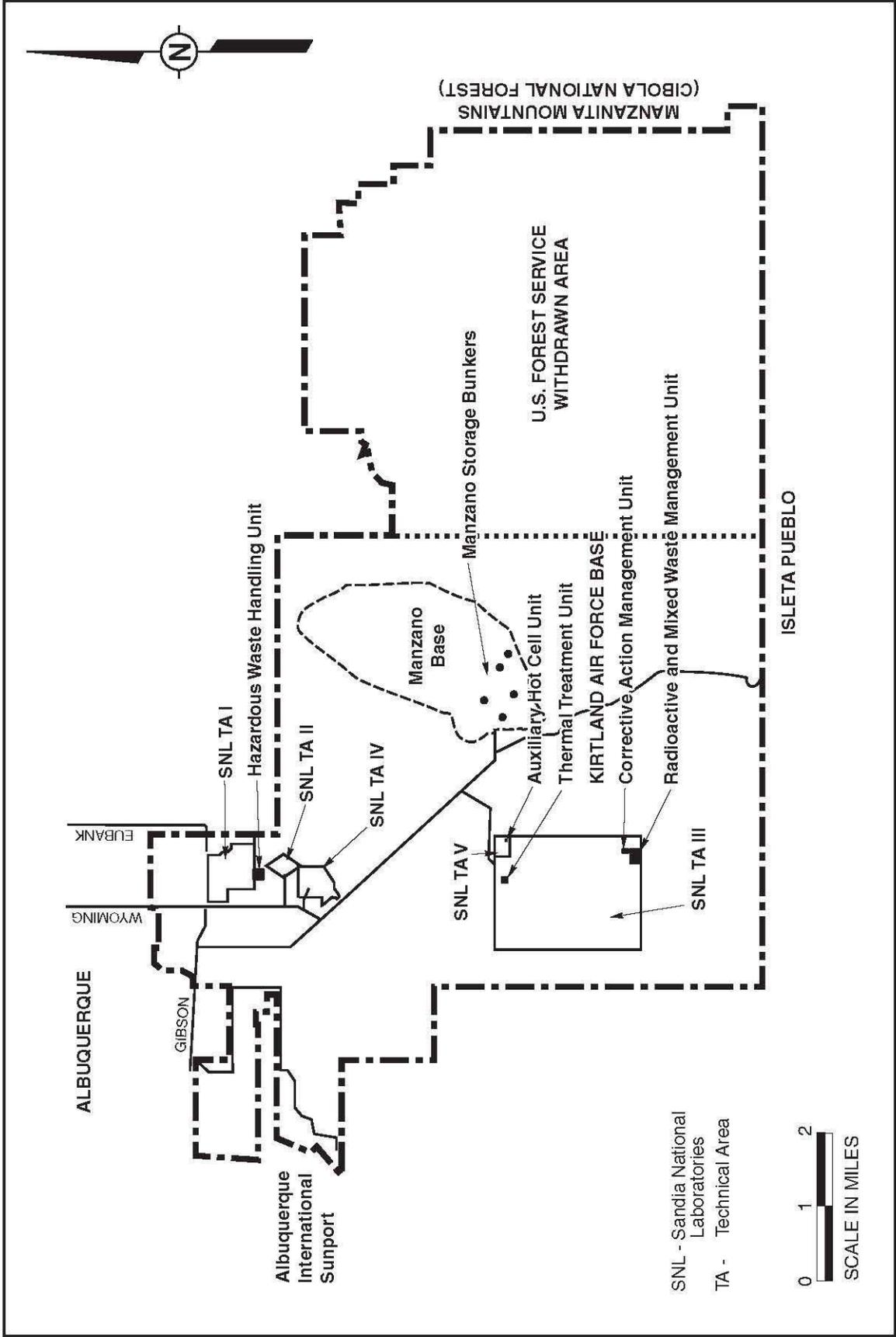


Figure 2
 Technical Areas and Permitted Hazardous and Mixed Waste Management Units at the Facility

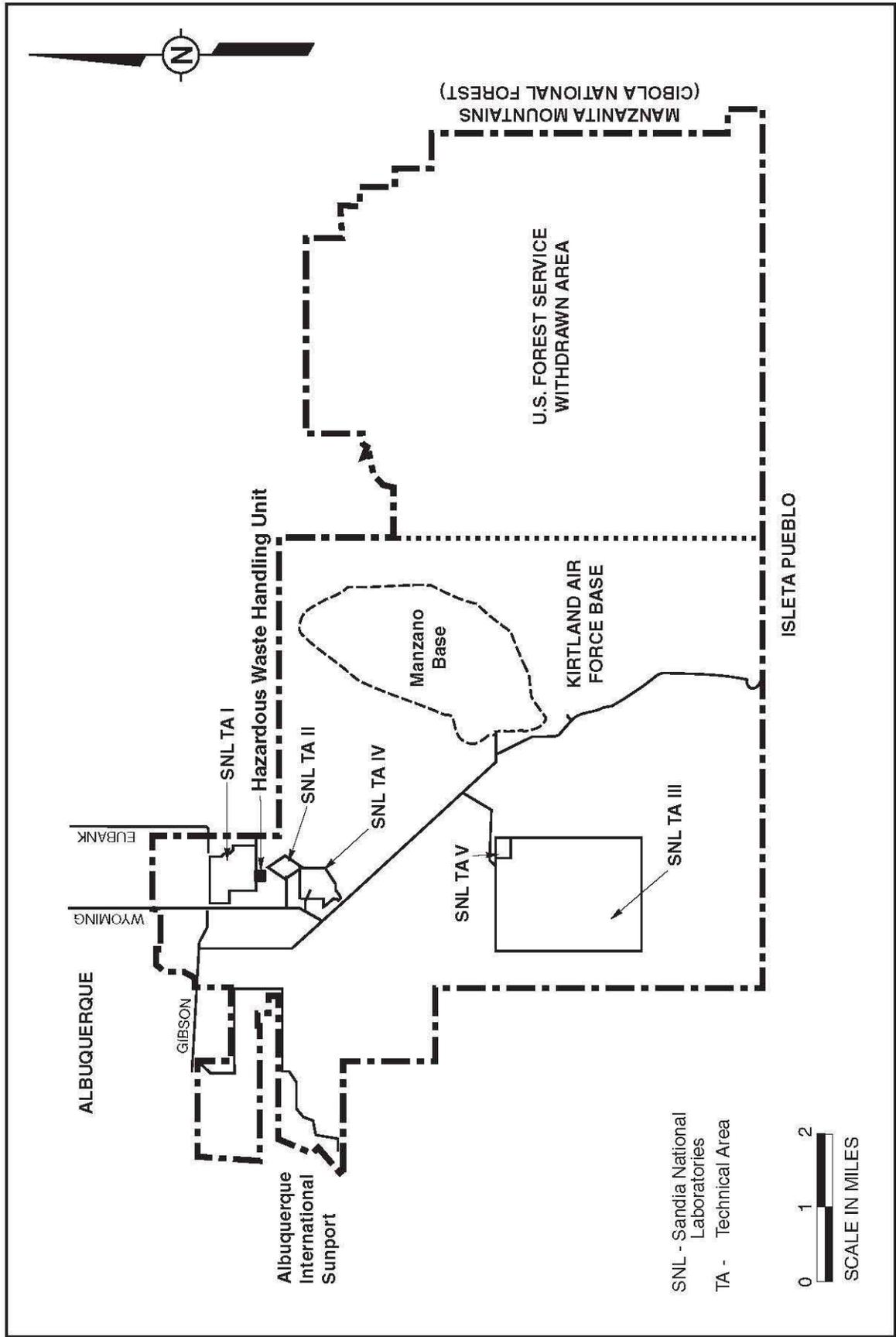


Figure 3
 Location of the Hazardous Waste Handling Unit at the Facility

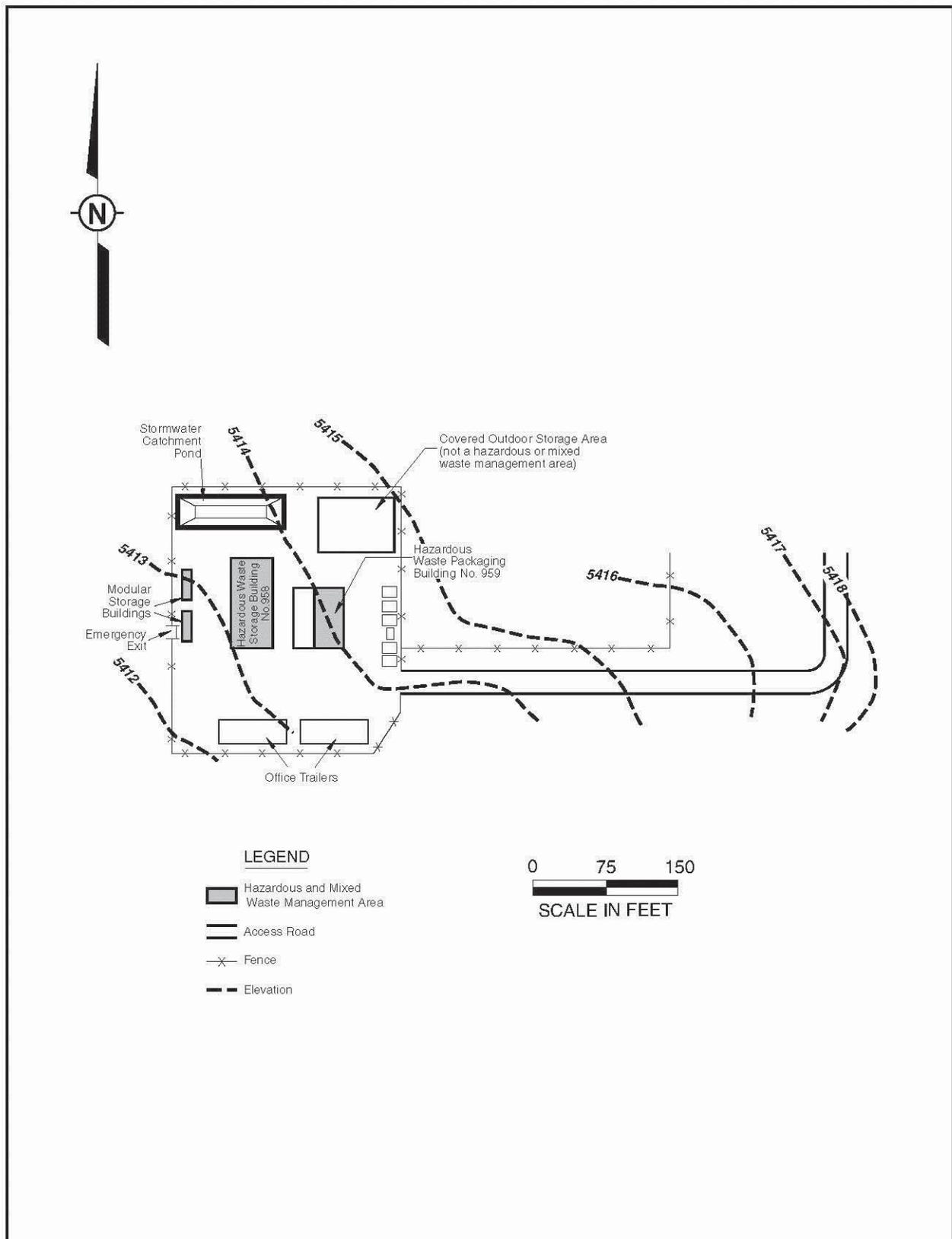
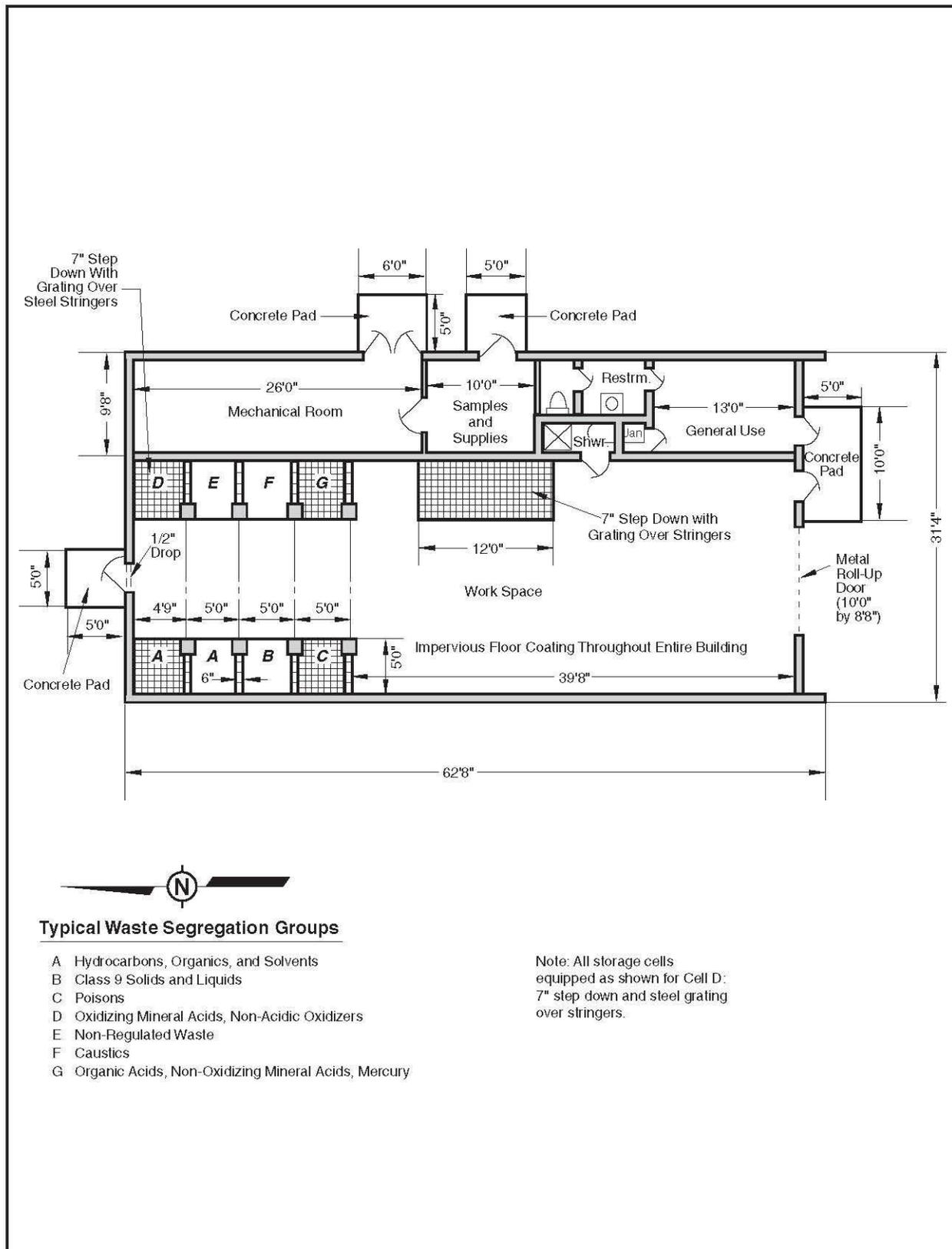


Figure 4
Hazardous Waste Handling Unit, Hazardous and Mixed Waste Management Areas

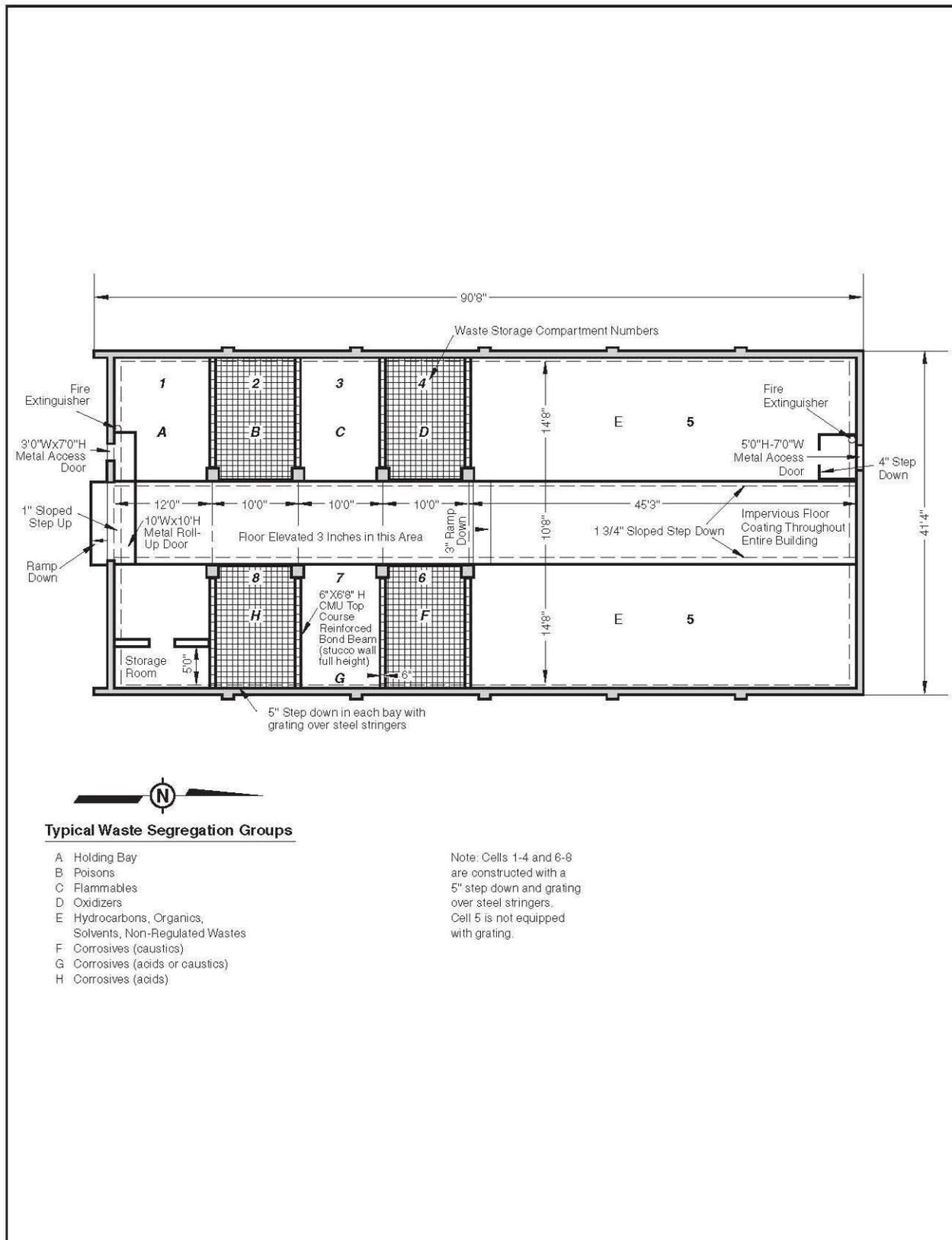


Typical Waste Segregation Groups

- A Hydrocarbons, Organics, and Solvents
- B Class 9 Solids and Liquids
- C Poisons
- D Oxidizing Mineral Acids, Non-Acidic Oxidizers
- E Non-Regulated Waste
- F Caustics
- G Organic Acids, Non-Oxidizing Mineral Acids, Mercury

Note: All storage cells equipped as shown for Cell D: 7" step down and steel grating over stringers.

Figure 5
Hazardous Waste Handling Unit Building 959 Floor Plan



Typical Waste Segregation Groups

- A Holding Bay
- B Poisons
- C Flammables
- D Oxidizers
- E Hydrocarbons, Organics, Solvents, Non-Regulated Wastes
- F Corrosives (caustics)
- G Corrosives (acids or caustics)
- H Corrosives (acids)

Note: Cells 1-4 and 6-8 are constructed with a 5" step down and grating over steel stringers. Cell 5 is not equipped with grating.

Figure 6
Hazardous Waste Handling Unit Building 958 Floor Plan

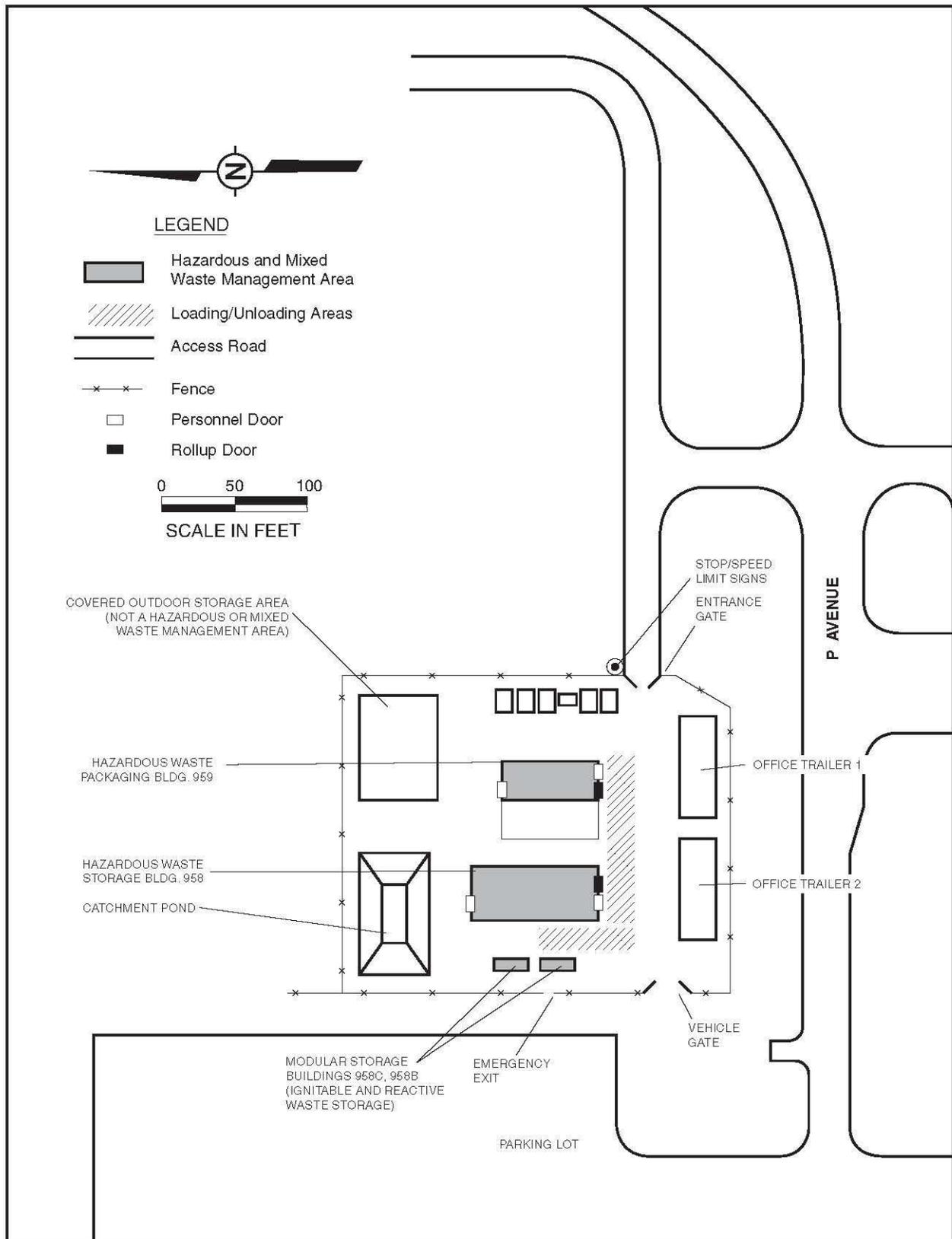


Figure 7

Hazardous Waste Handling Unit Access Control Features and Loading/Unloading Areas

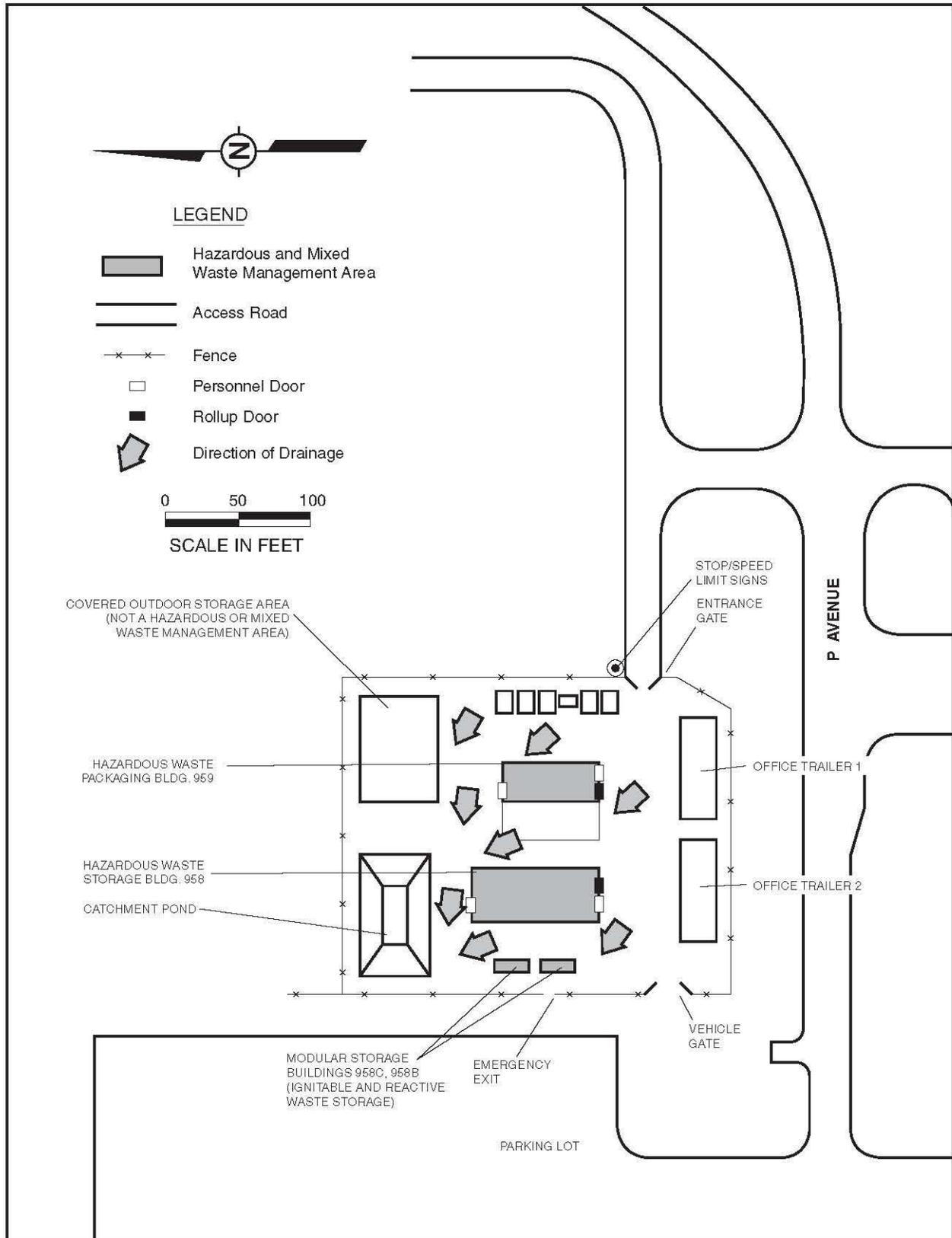


Figure 8
Hazardous Waste Handling Unit Drainage Control Features

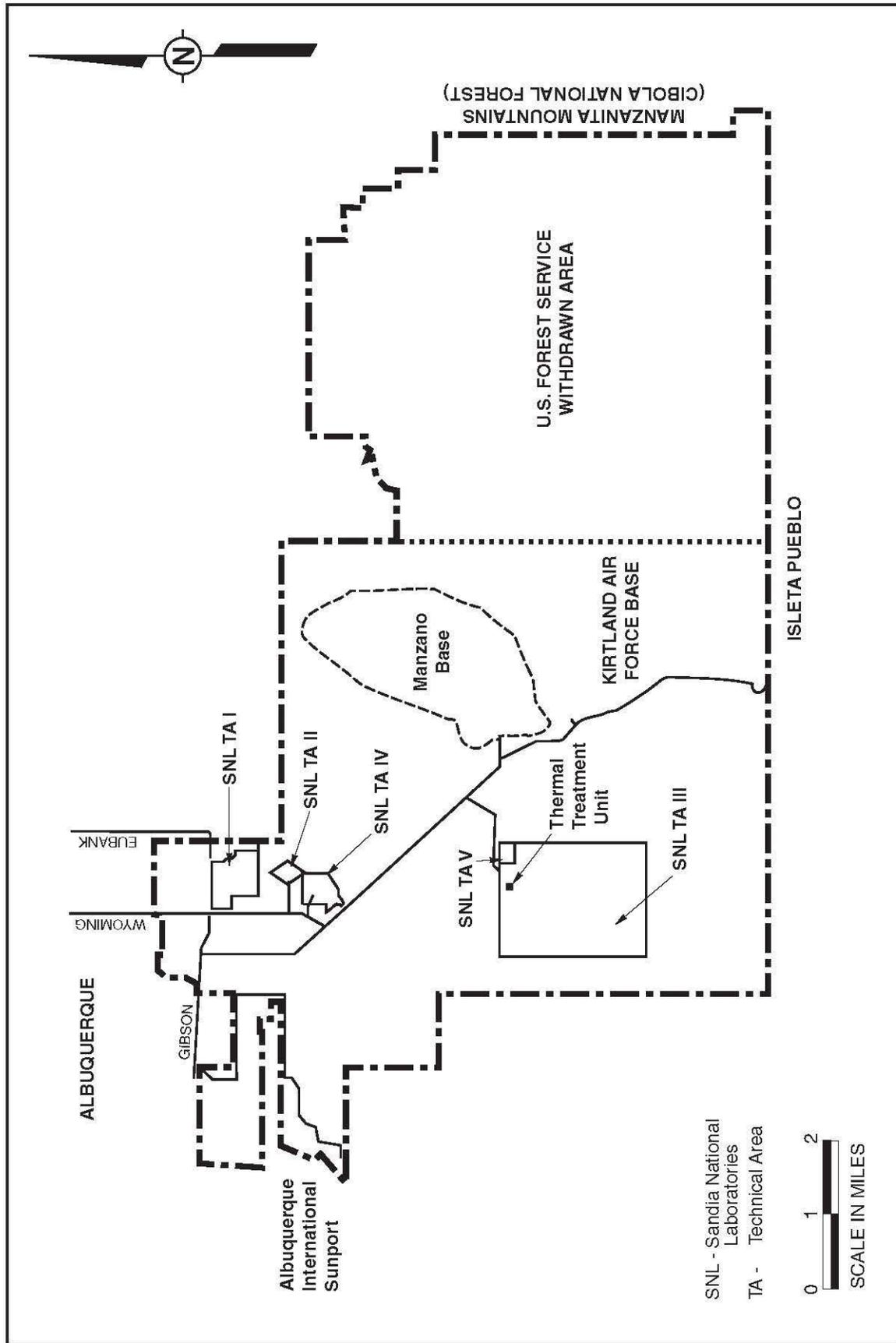
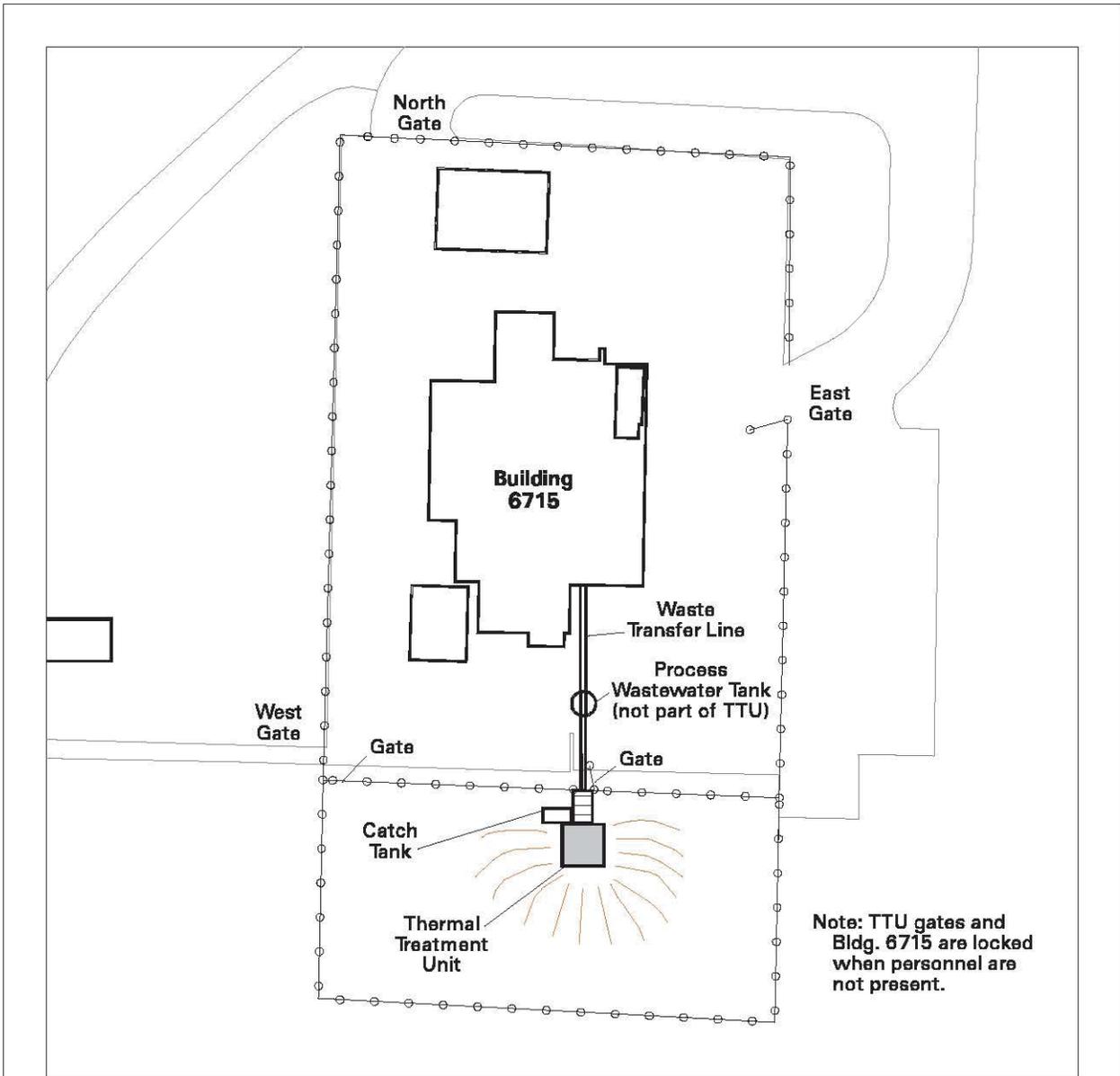
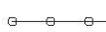


Figure 9
Location of the Thermal Treatment Unit at the Facility



Legend

-  Earthen Berm
-  Road / Parking
-  Fence
-  Building / Structure
-  Hazardous Waste Management Area
-  Steps

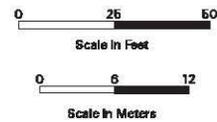
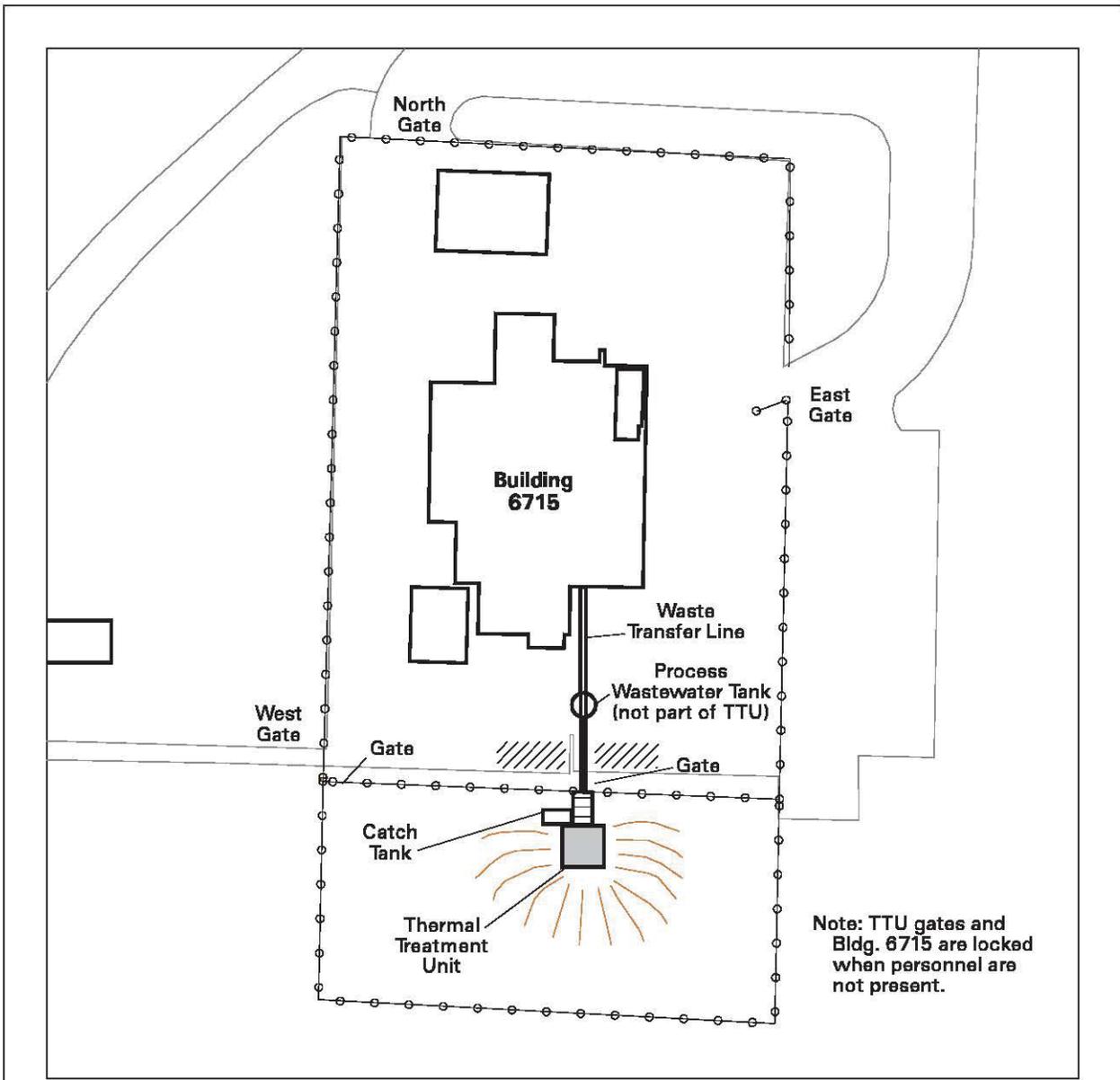
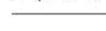
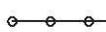


Figure 10
Thermal Treatment Unit (TTU)
Hazardous Waste Management Area



Legend

-  Earthen Berm
-  Road / Parking
-  Fence
-  Building / Structure
-  Hazardous Waste Management Area
-  Loading / Unloading Area
-  Steps

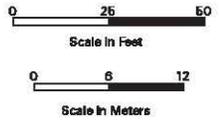


Figure 11
Thermal Treatment Unit Loading/Unloading Area

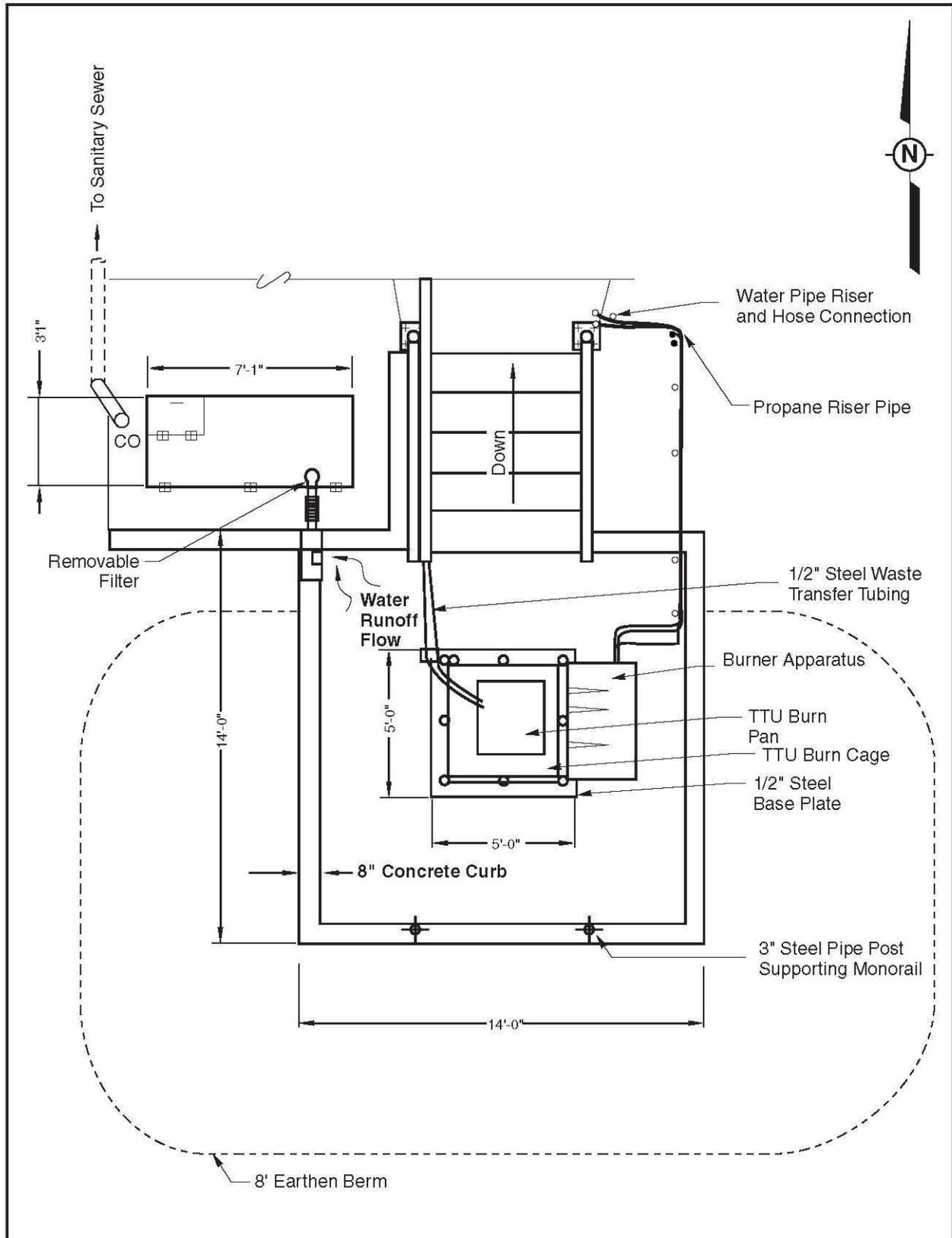
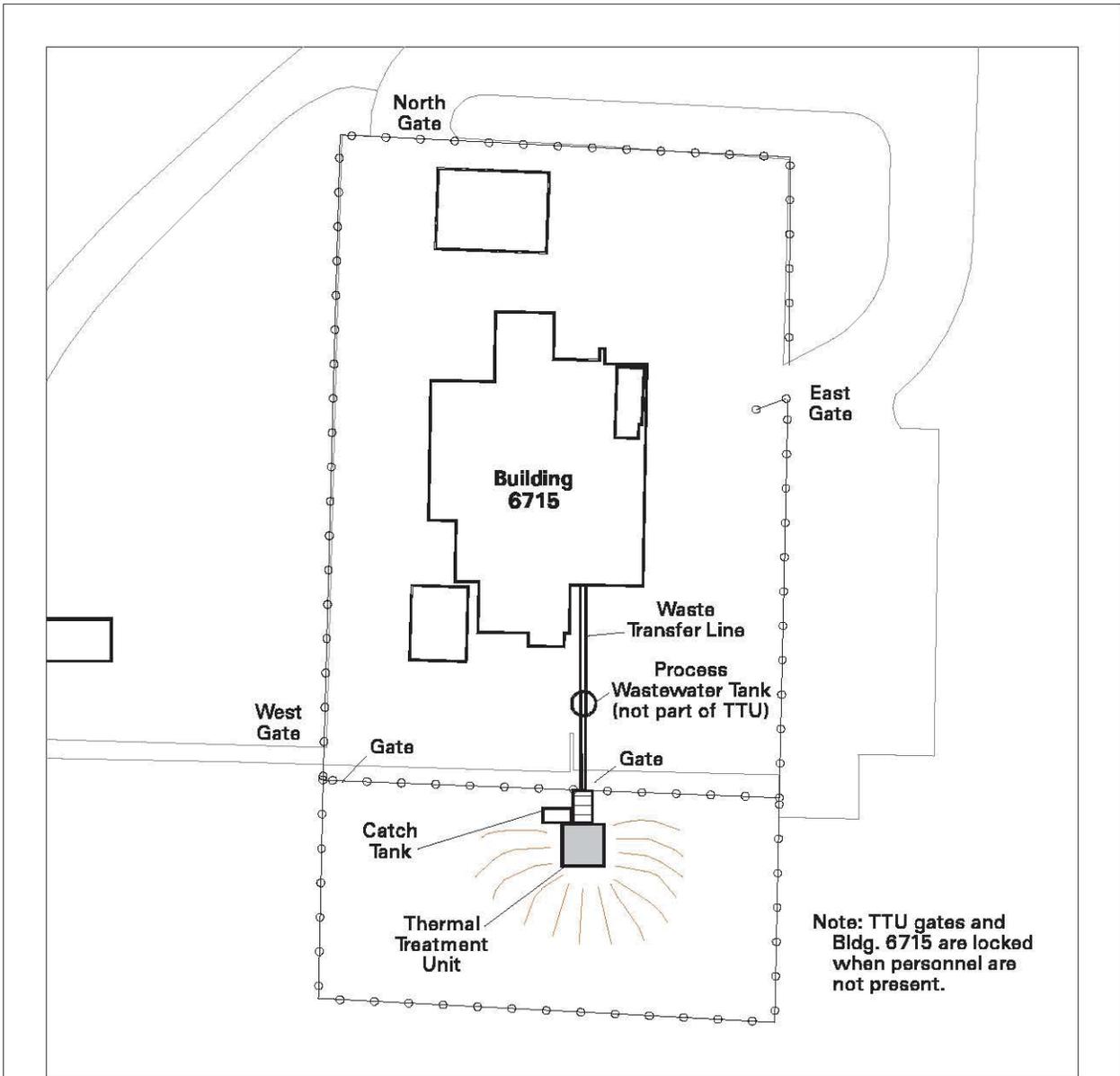
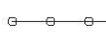


Figure 12
Thermal Treatment Unit Drainage Control Features



Legend

-  Earthen Berm
-  Road / Parking
-  Fence
-  Building / Structure
-  Hazardous Waste Management Area
-  Steps

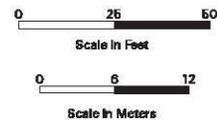


Figure 13
Thermal Treatment Unit Access Control Features

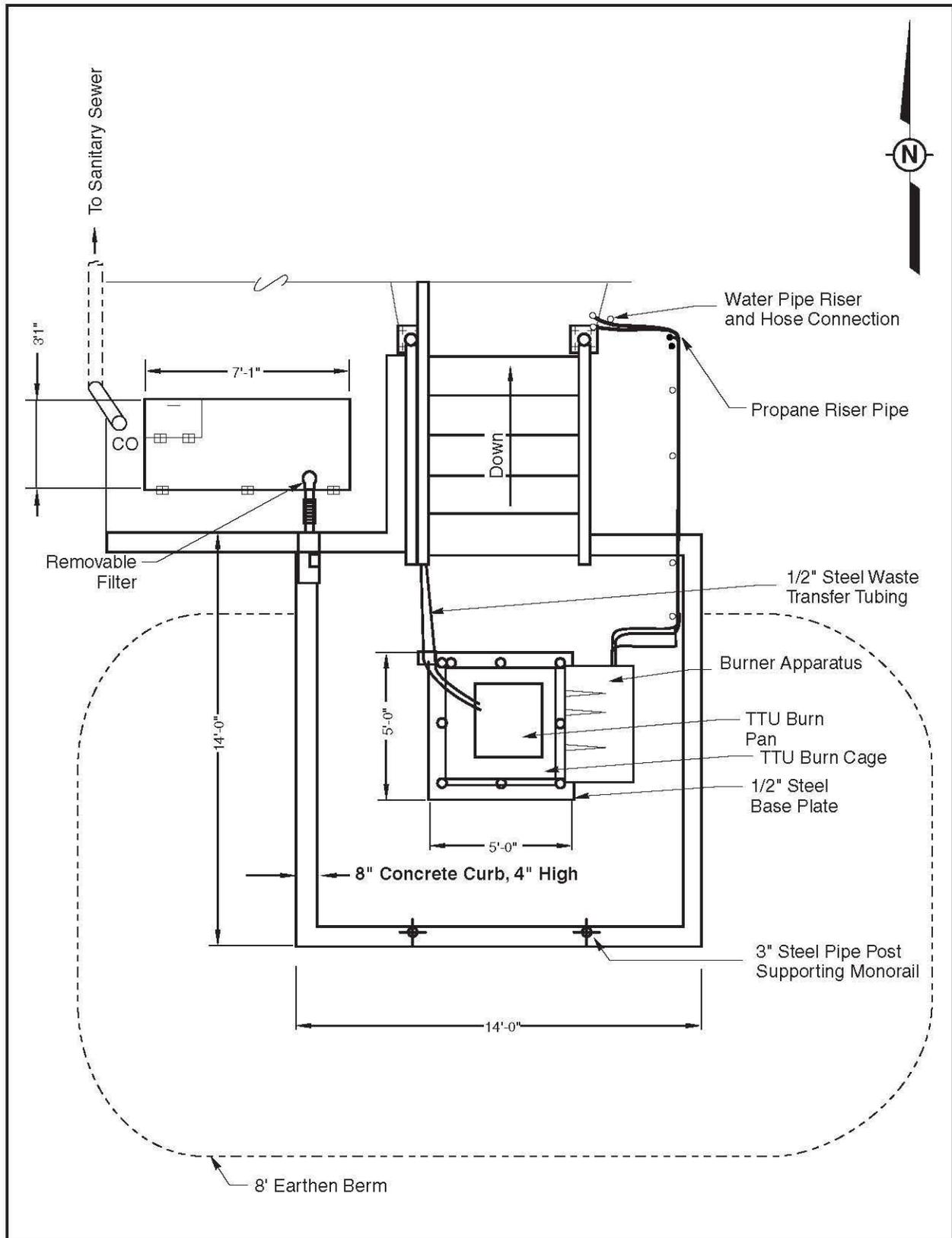


Figure 14
Thermal Treatment Unit Plan View with Dimensions

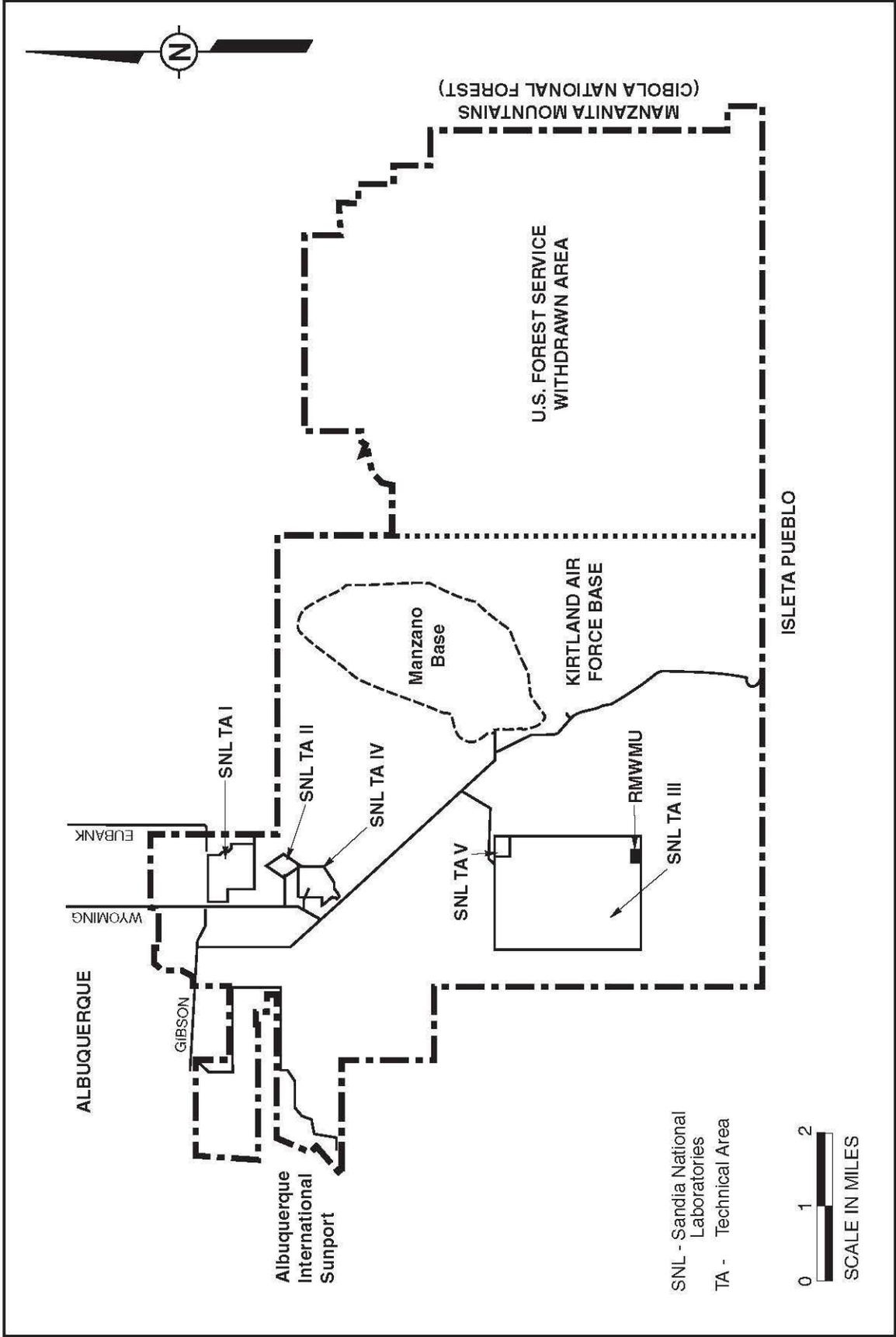


Figure 15
Location of the Radioactive and Mixed Waste Management Unit (RMWMU) at the Facility

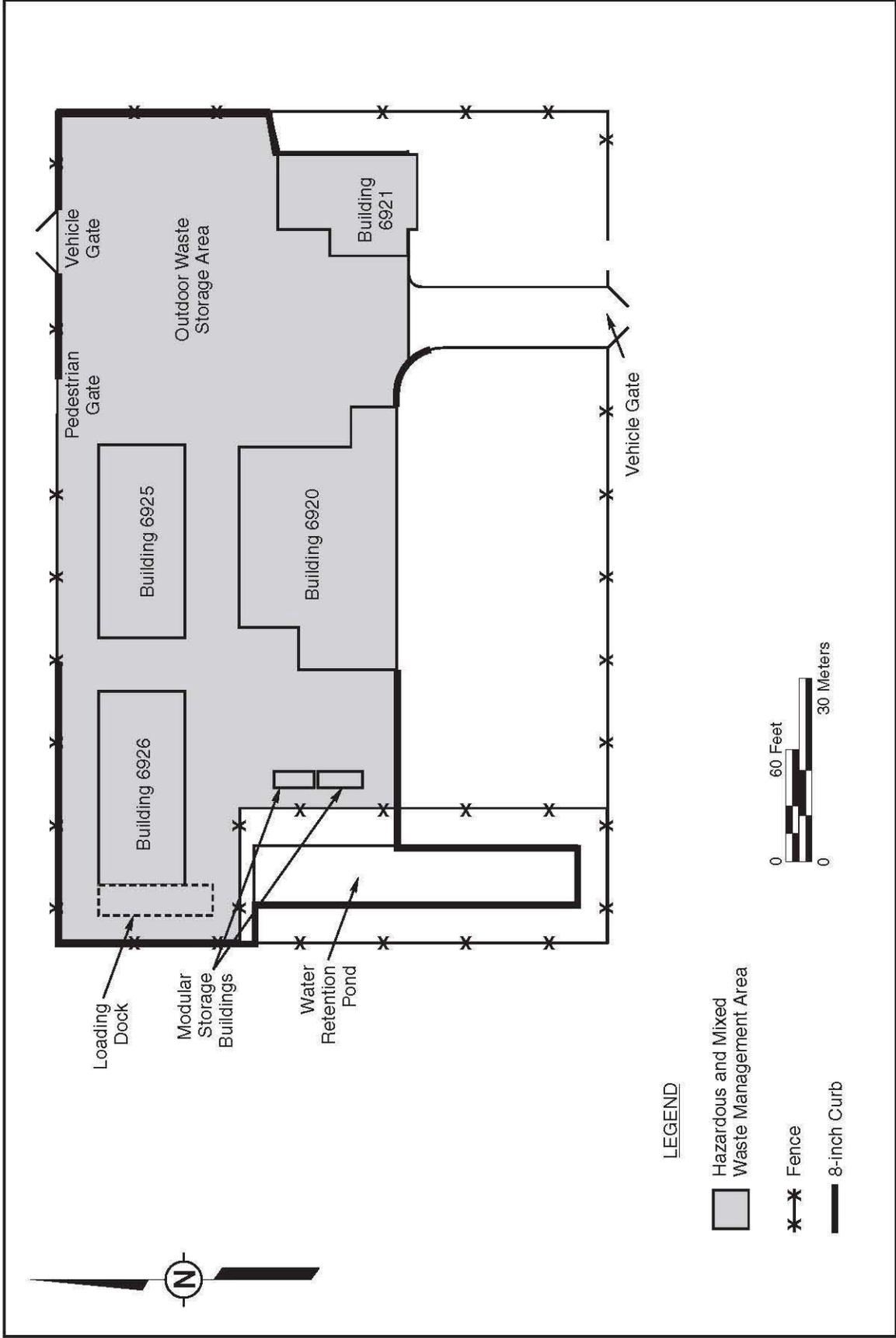


Figure 16
Radioactive and Mixed Waste Management Unit
Hazardous and Mixed Waste Management Areas

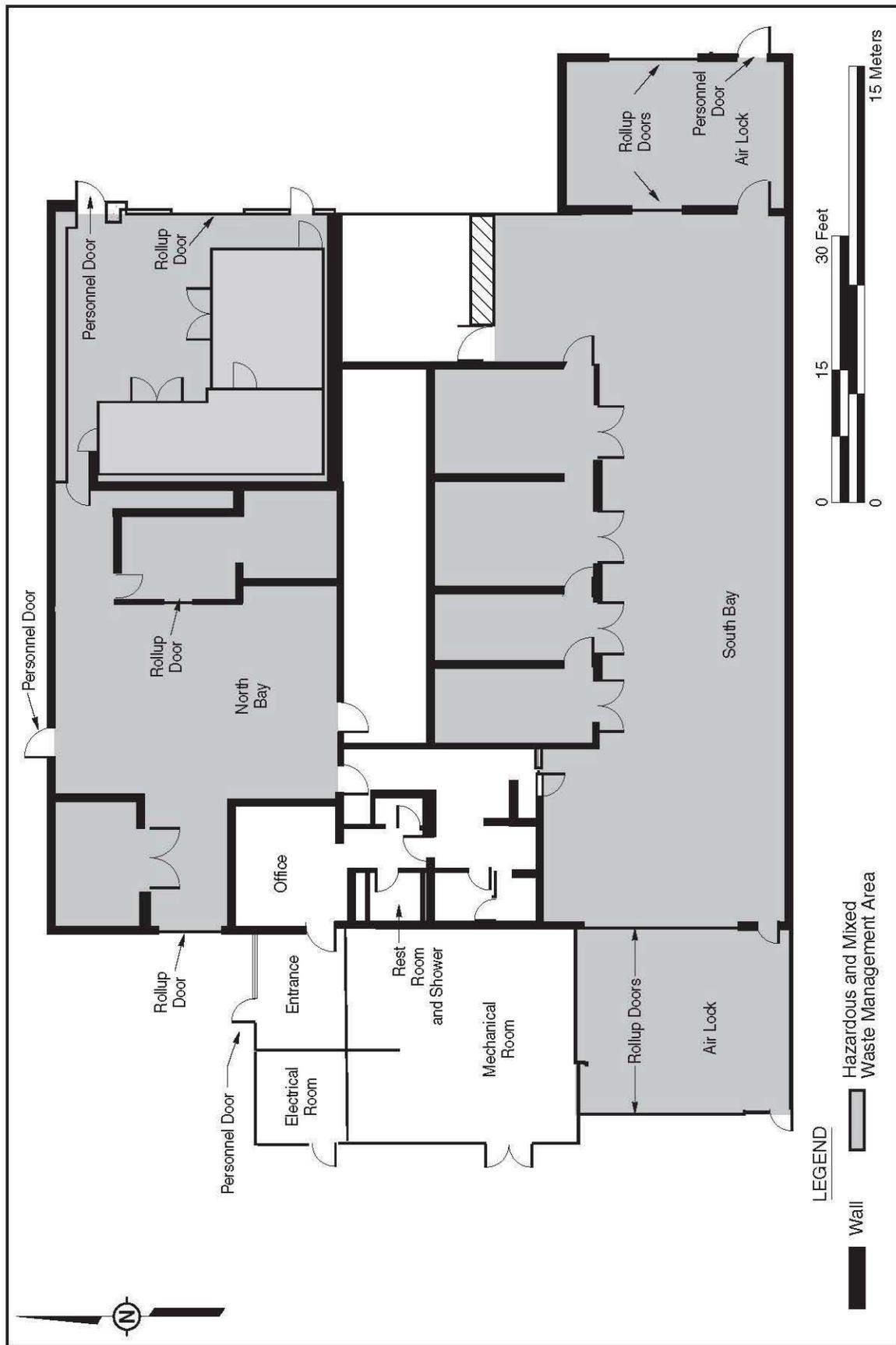


Figure 17

Radioactive and Mixed Waste Management Unit, Building 6920, Hazardous and Mixed Waste Management Areas

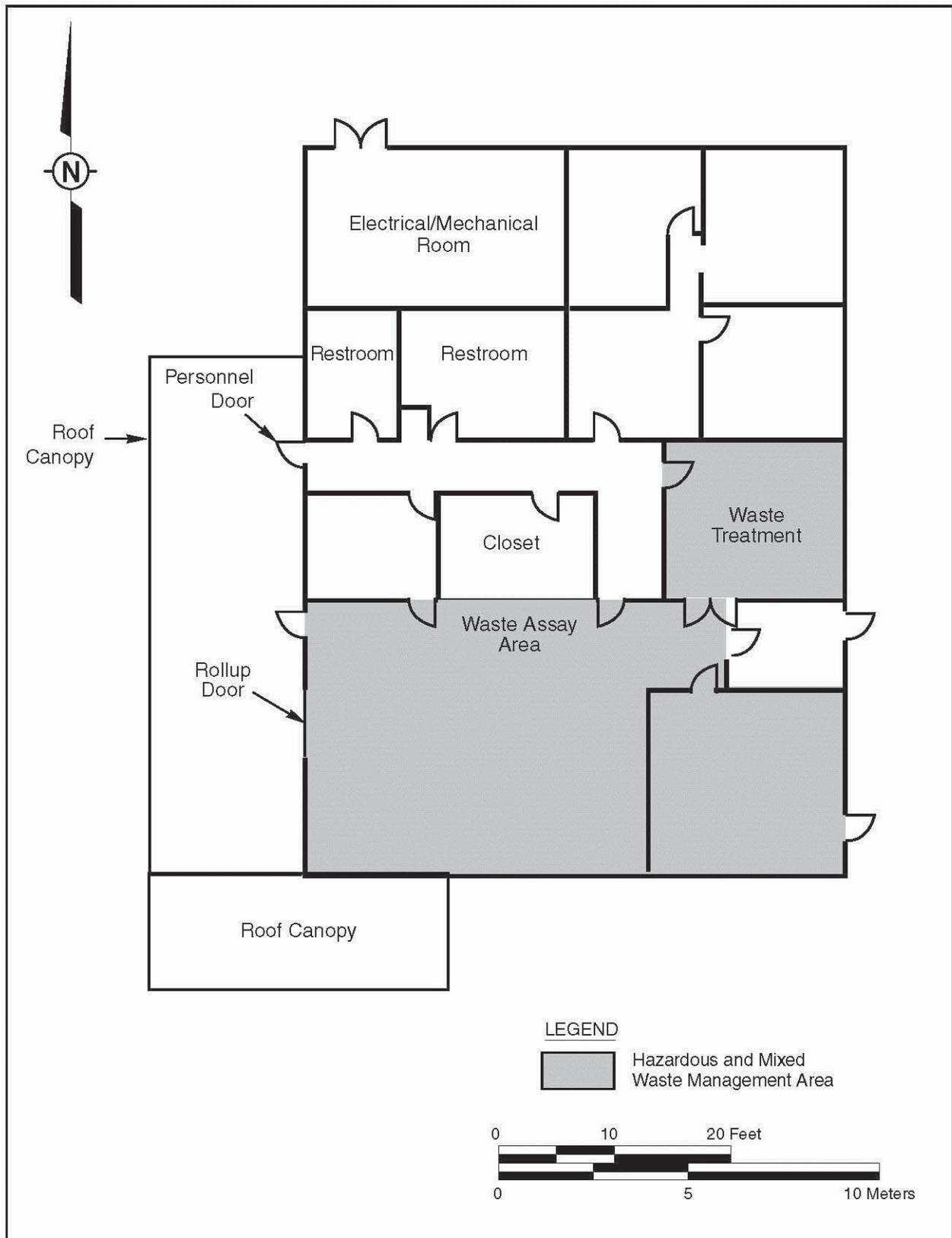


Figure 18
Radioactive and Mixed Waste Management Unit,
Building 6921, Hazardous and Mixed Waste Management Areas

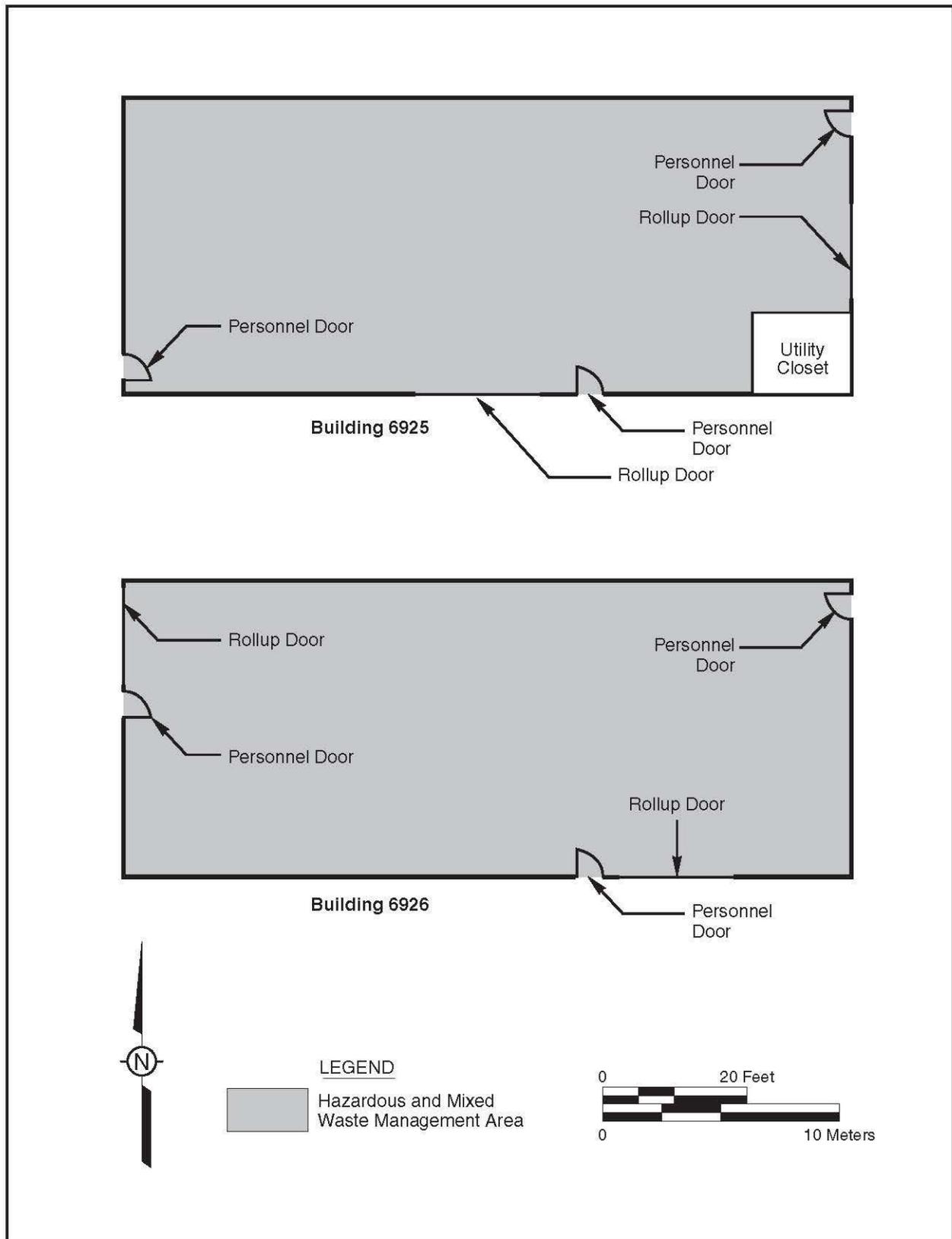


Figure 19-A
Radioactive and Mixed Waste Management Unit,
Buildings 6925 and 6926, Hazardous and Mixed Waste Management Areas

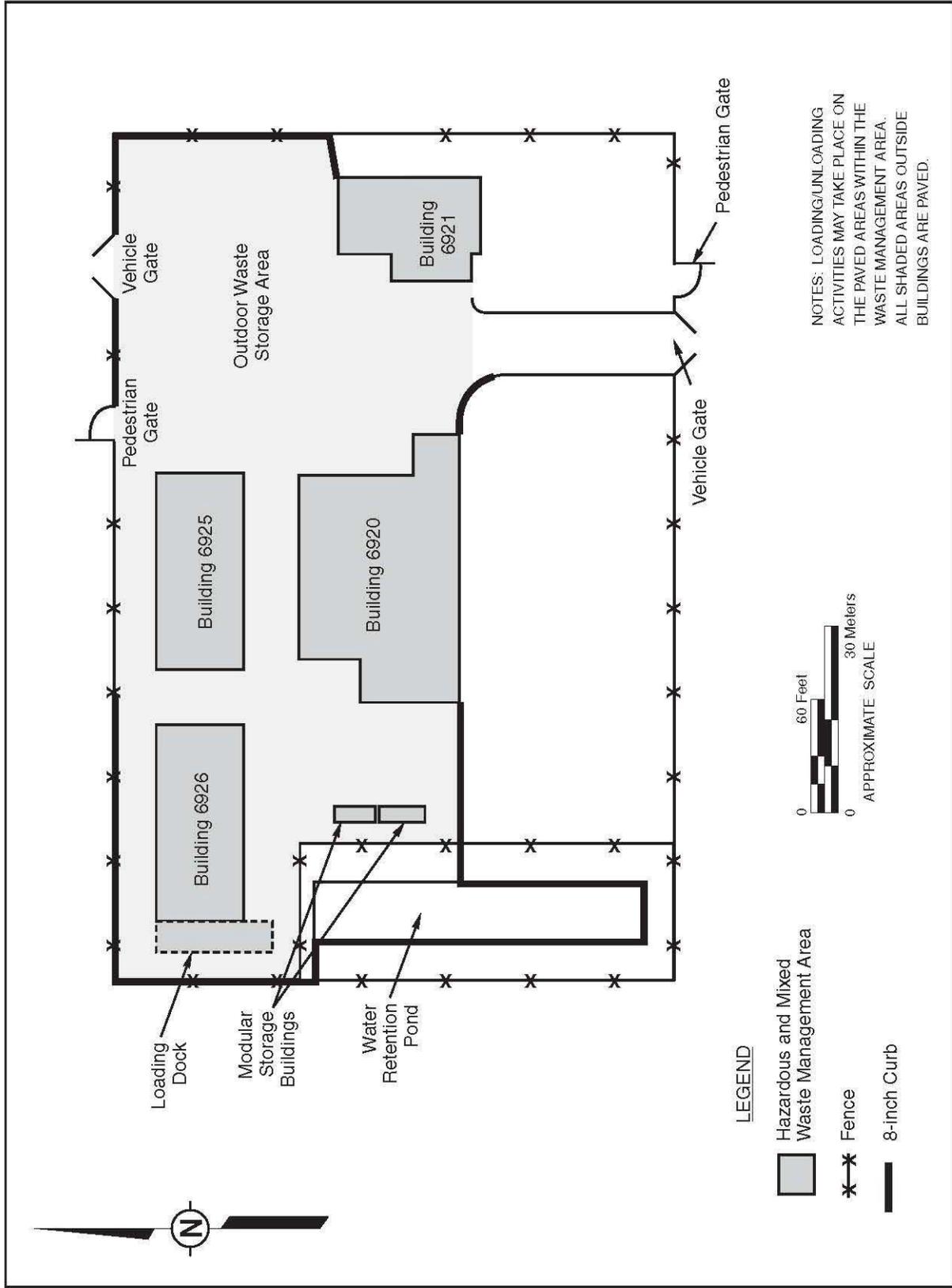


Figure 19-B
Radioactive and Mixed Waste Management Unit,
Loading/Unloading and Access Control Features

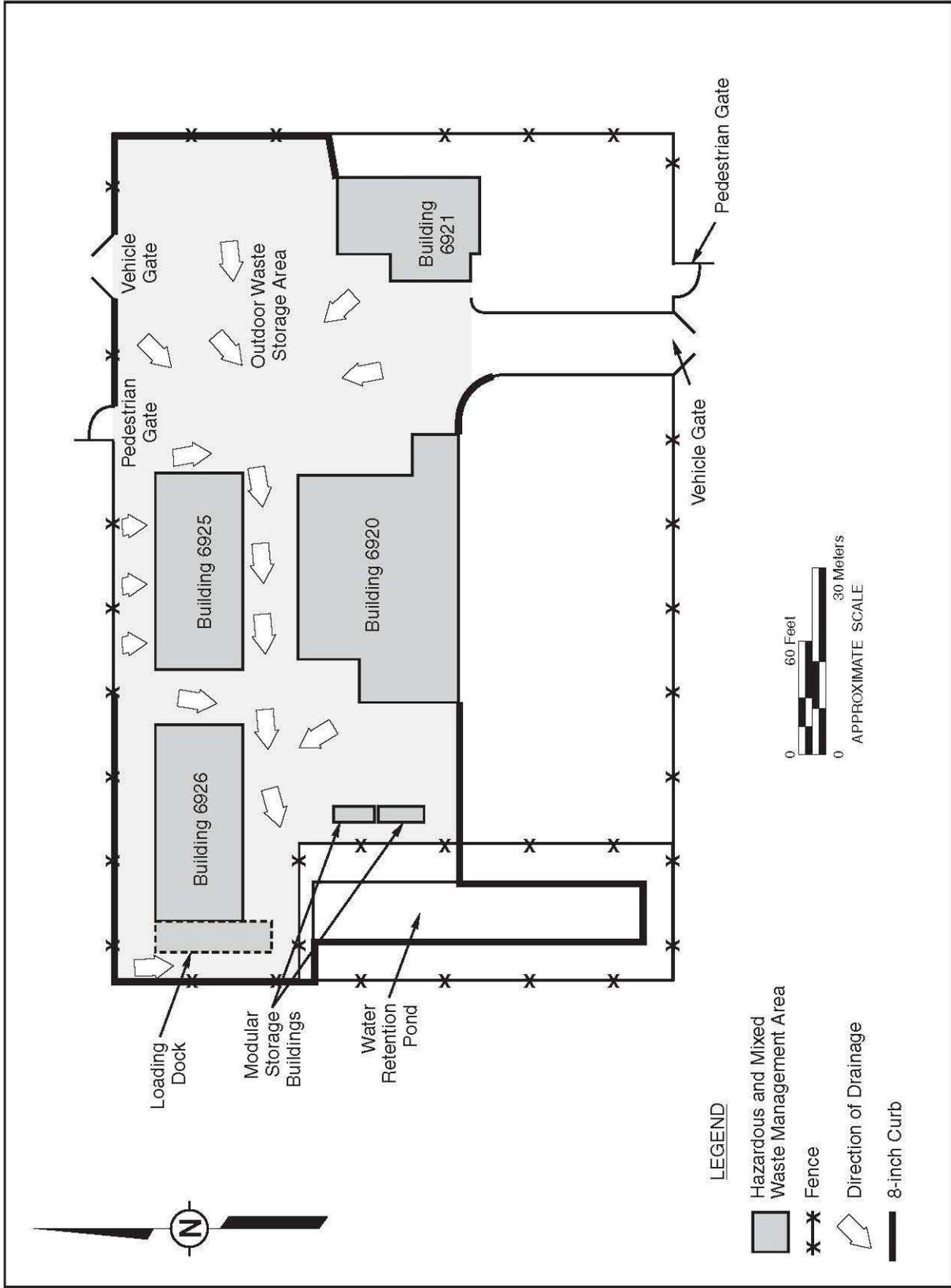


Figure 19-C
Radioactive and Mixed Waste Management Unit,
Drainage Control Features

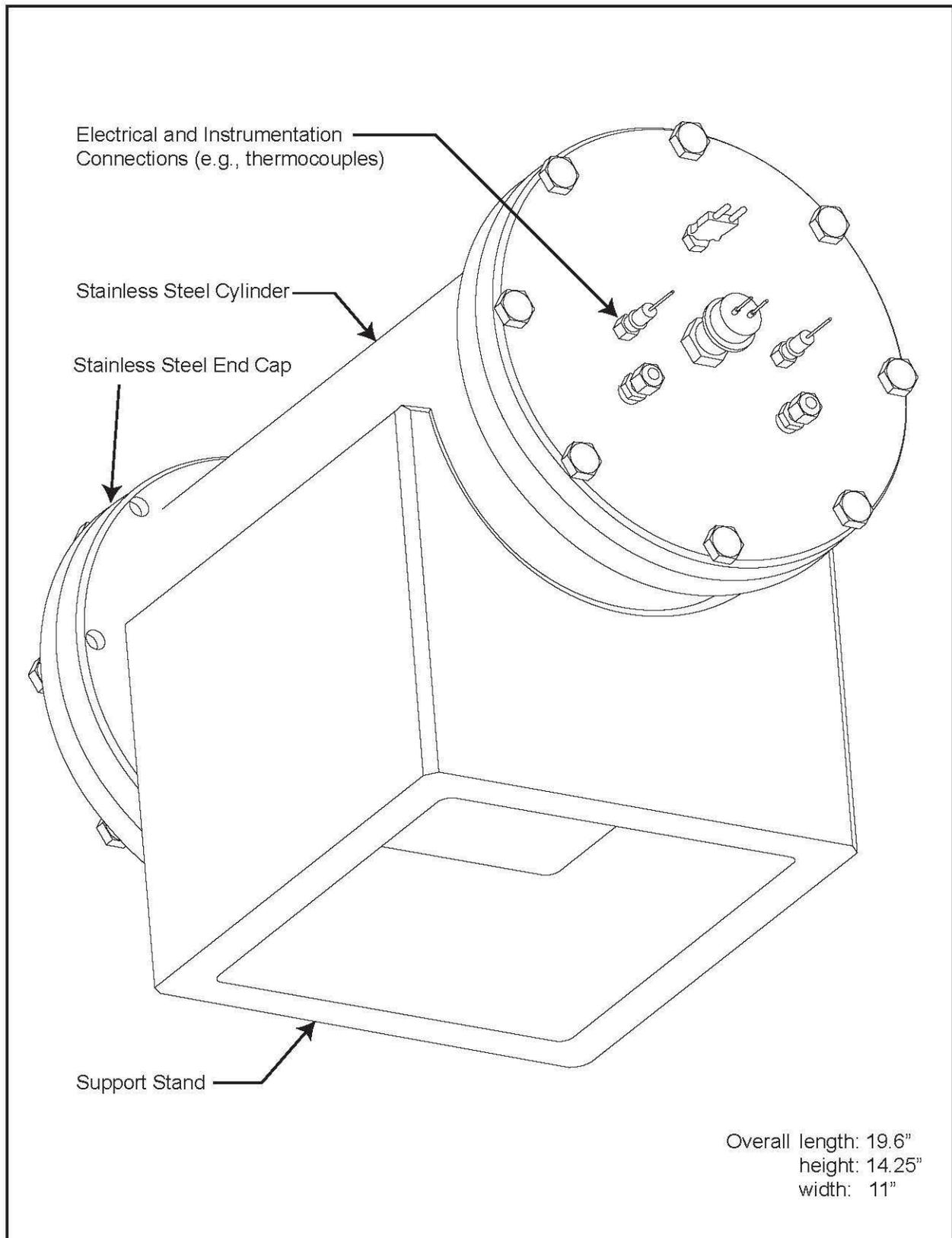


Figure 20
Radioactive and Mixed Waste Management Unit
Thermal Deactivation Device, Exterior Bottom View

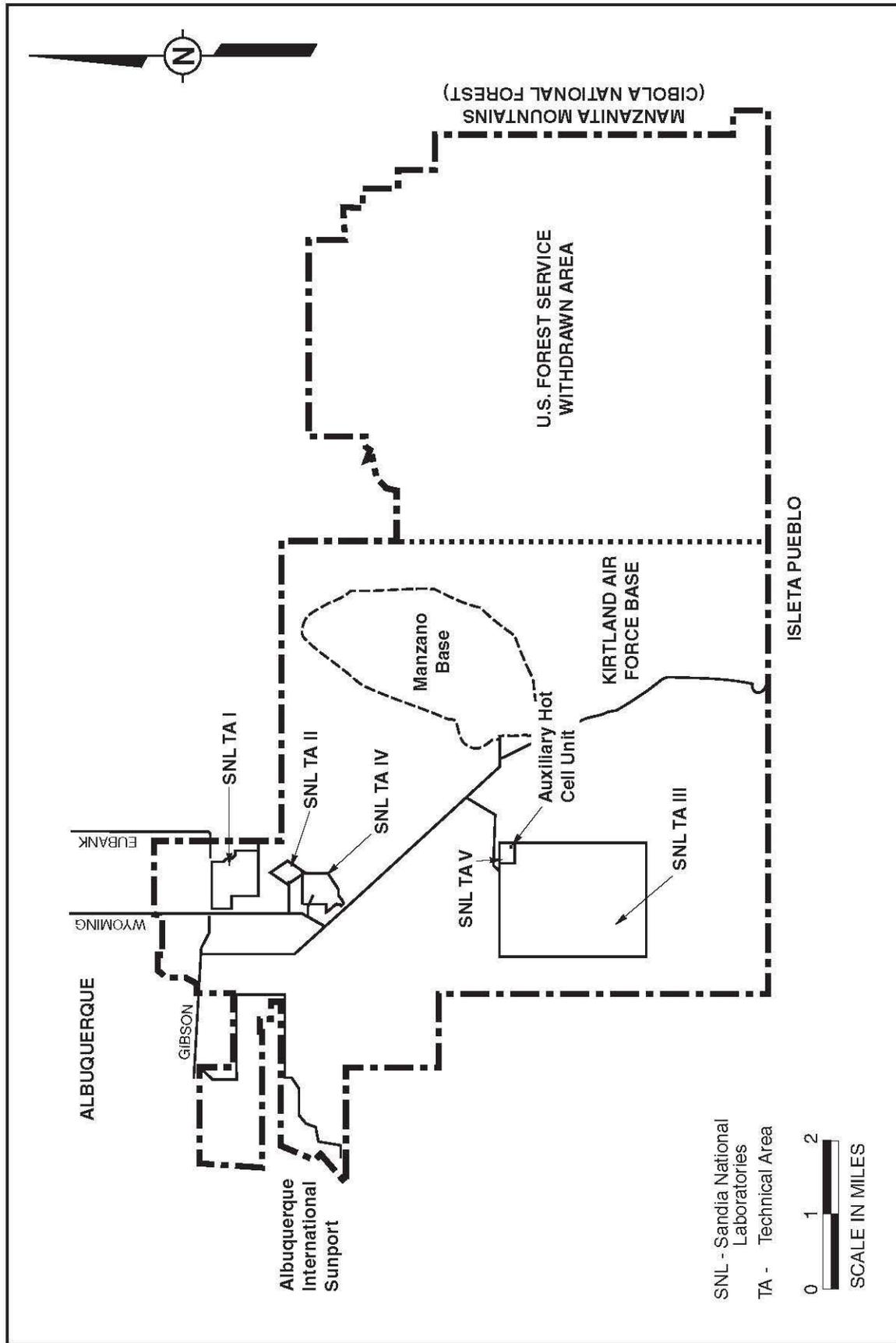


Figure 21-A
Location of the Auxiliary Hot Cell Unit at the Facility

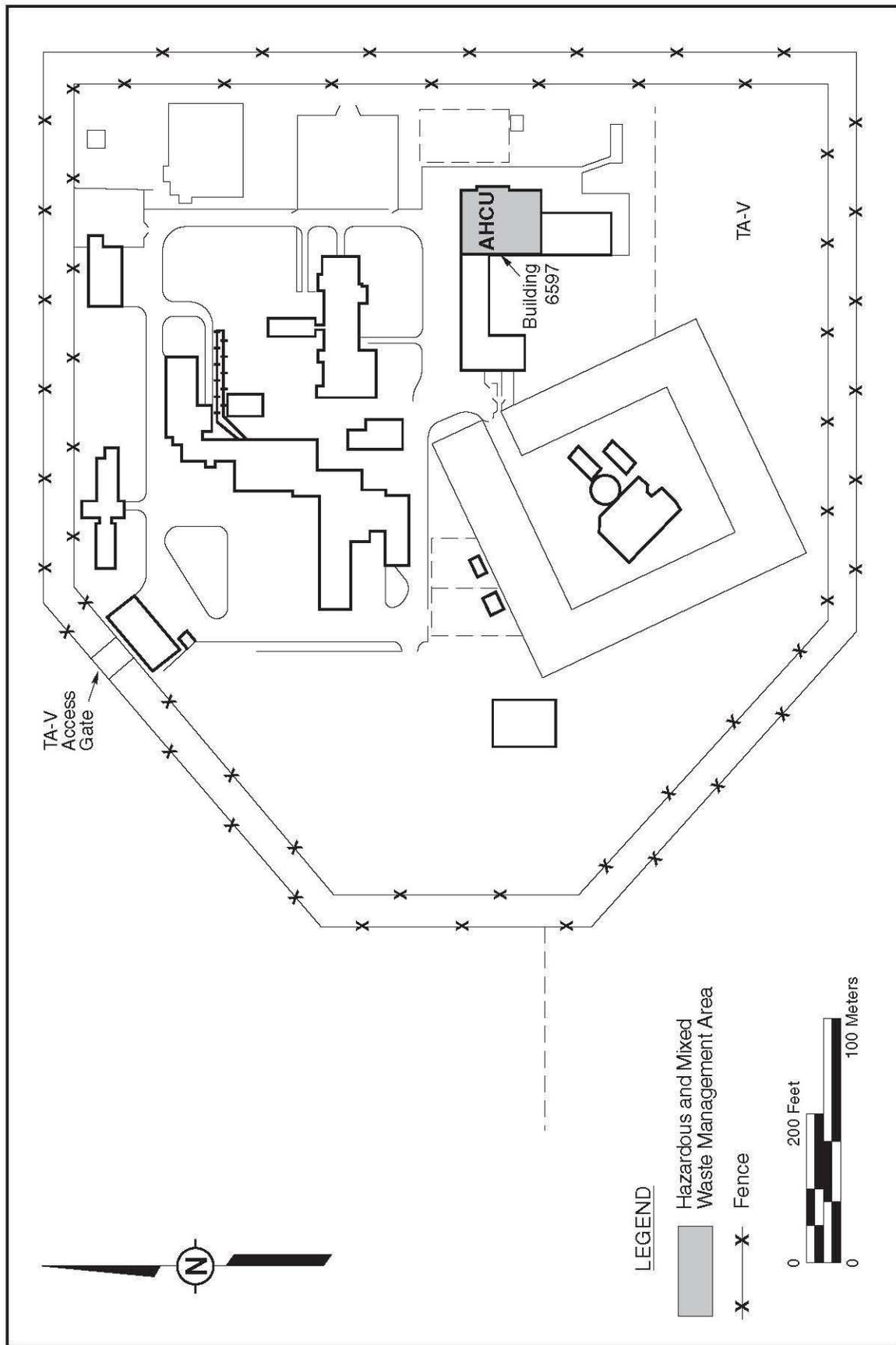


Figure 21-B
Location of the Auxiliary Hot Cell Unit (AHCU) in Technical Area (TA) V

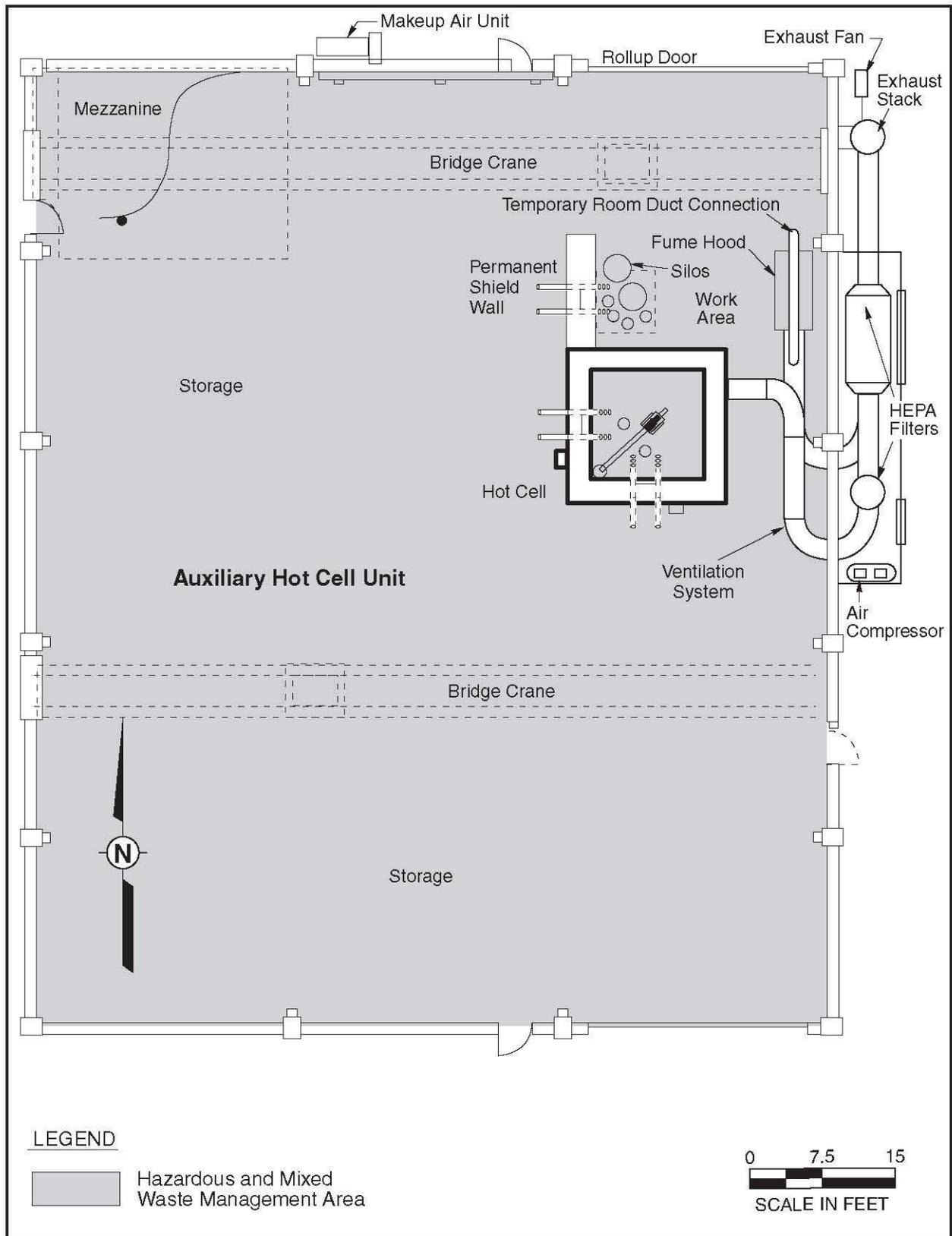


Figure 22
Auxiliary Hot Cell Unit, Hazardous and Mixed Waste Management Areas

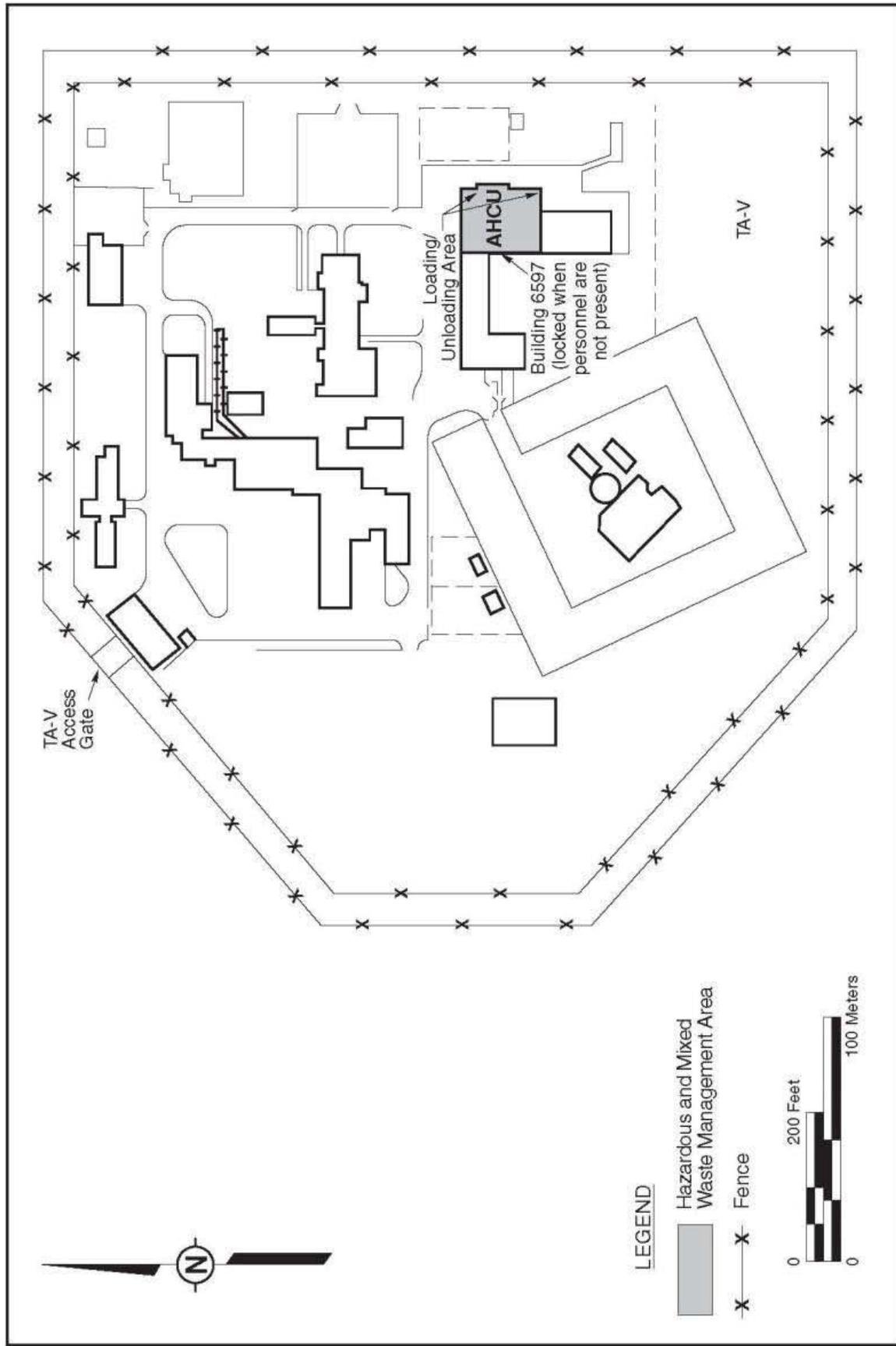


Figure 23
 Auxiliary Hot Cell Unit Loading/Unloading and Access Control Features

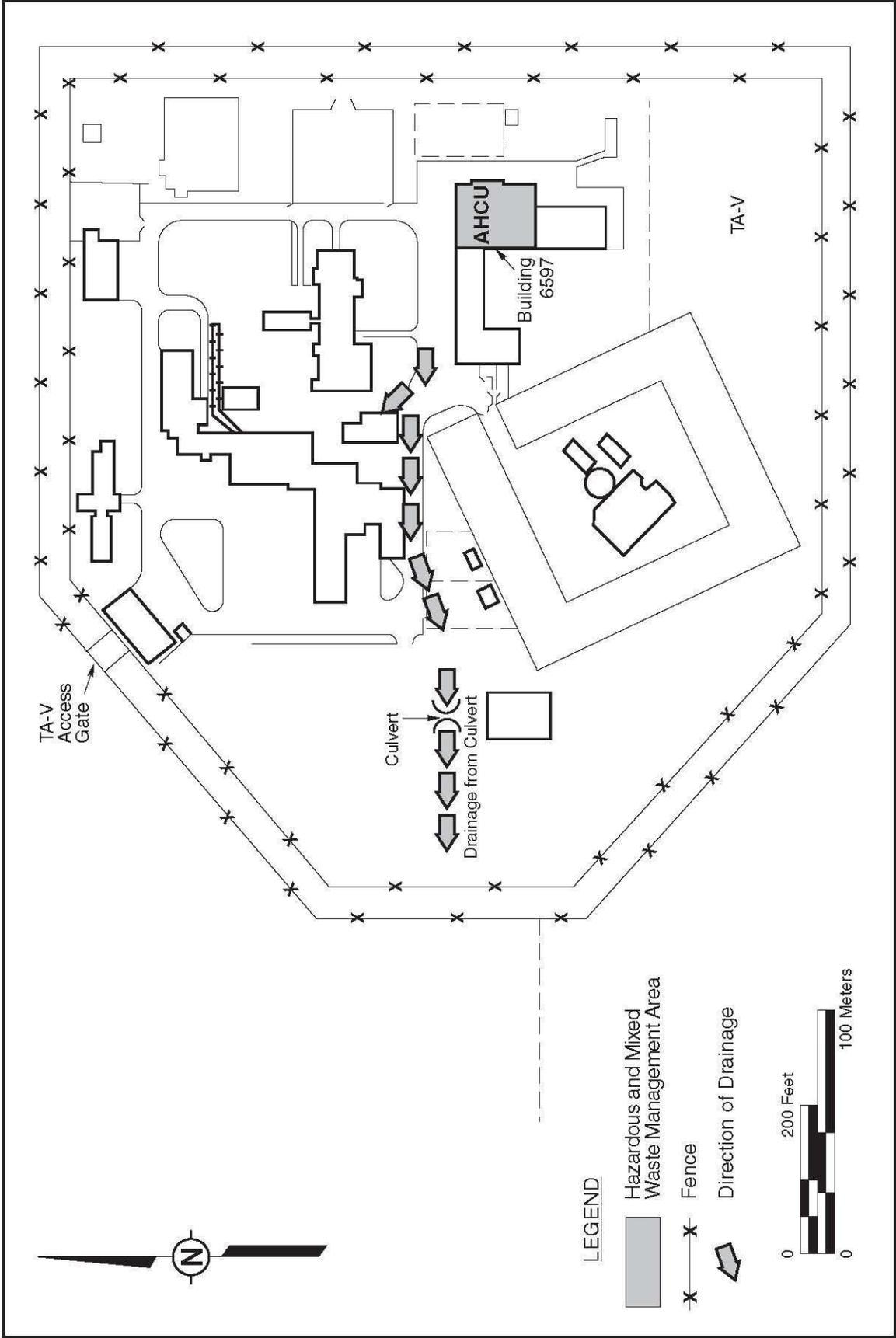


Figure 24
Auxiliary Hot Cell Unit (AHCUC), Drainage Control Features

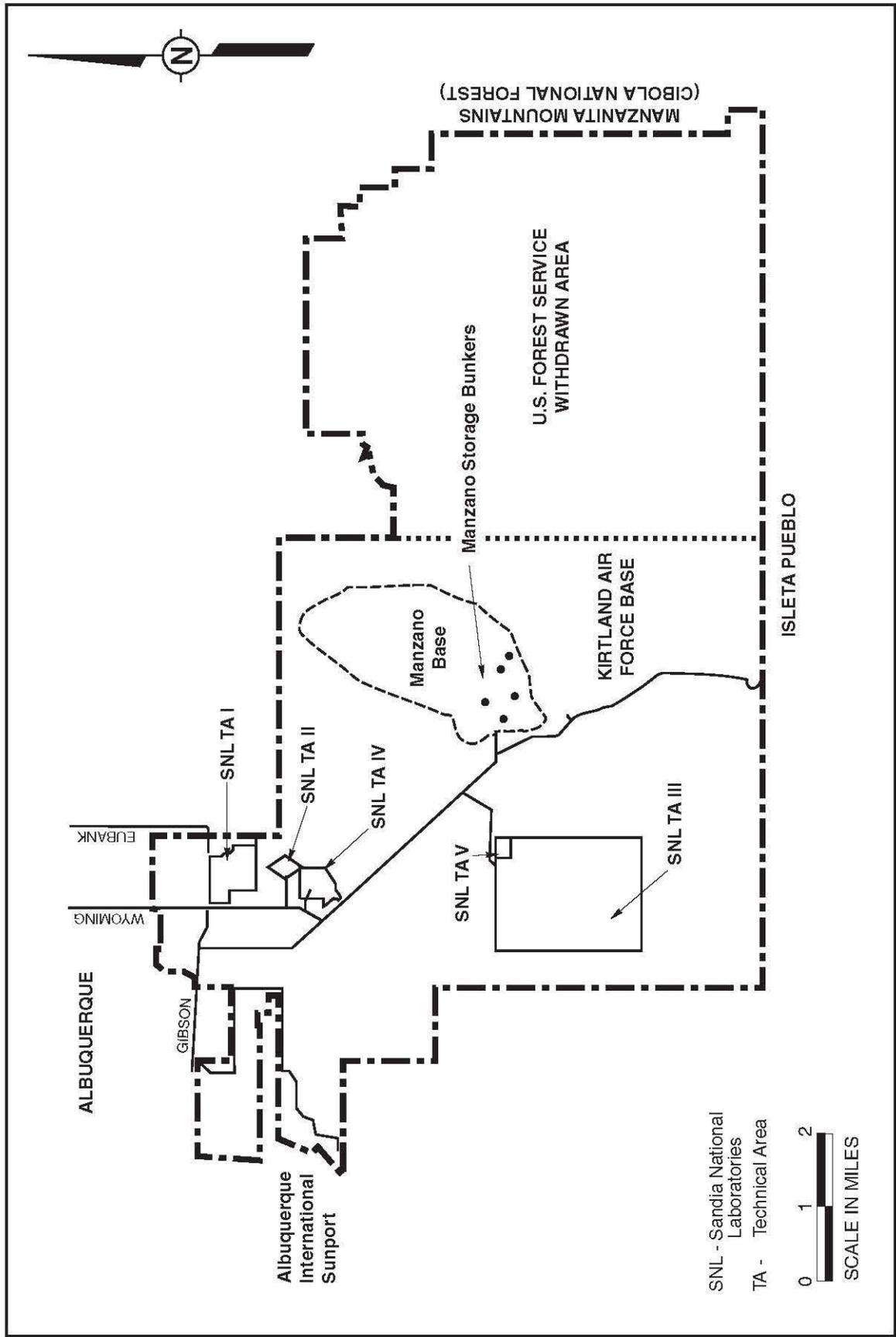


Figure 25
Location of the Manzano Storage Bunkers at the Facility

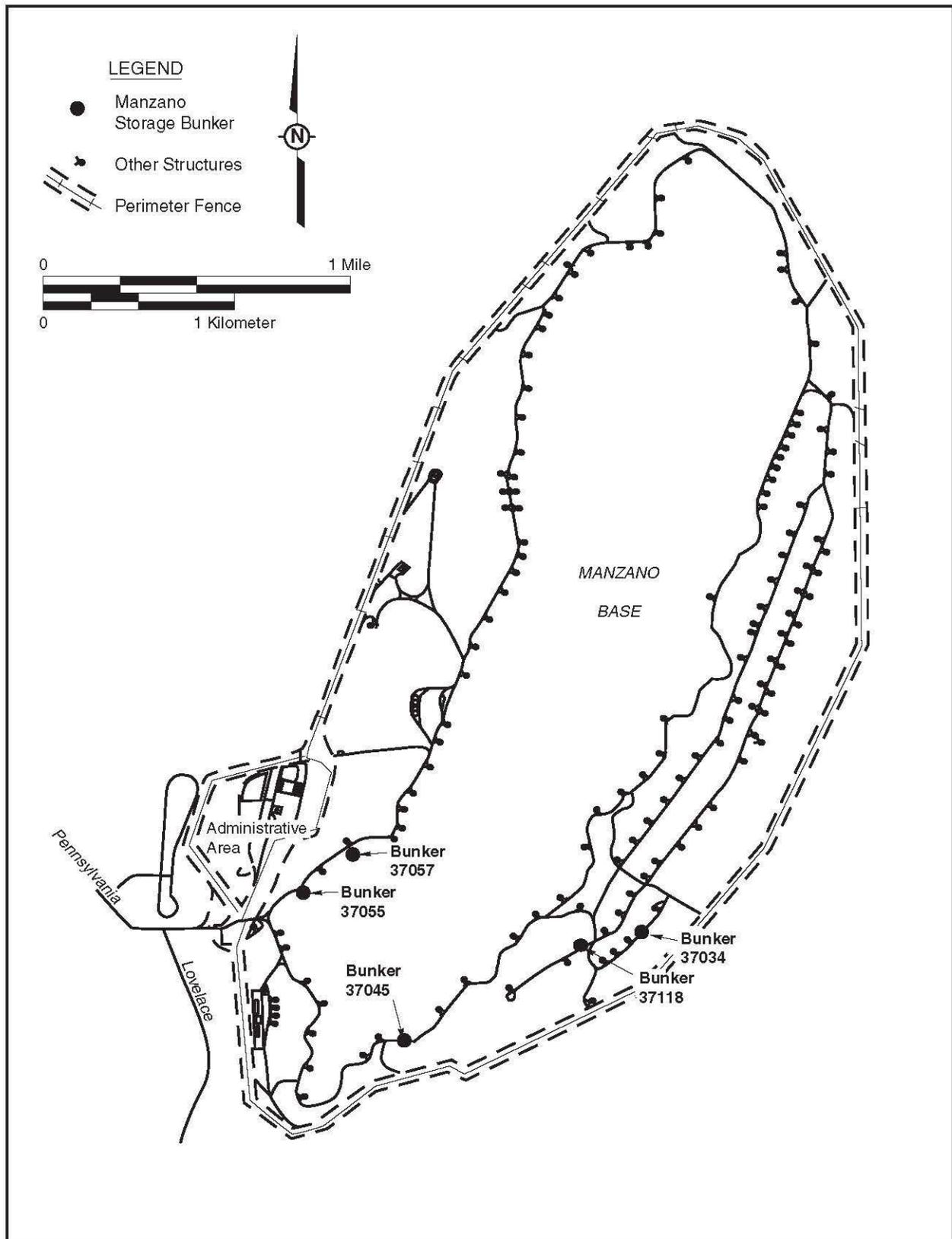


Figure 26
Location of the Manzano Storage Bunkers at Manzano Base

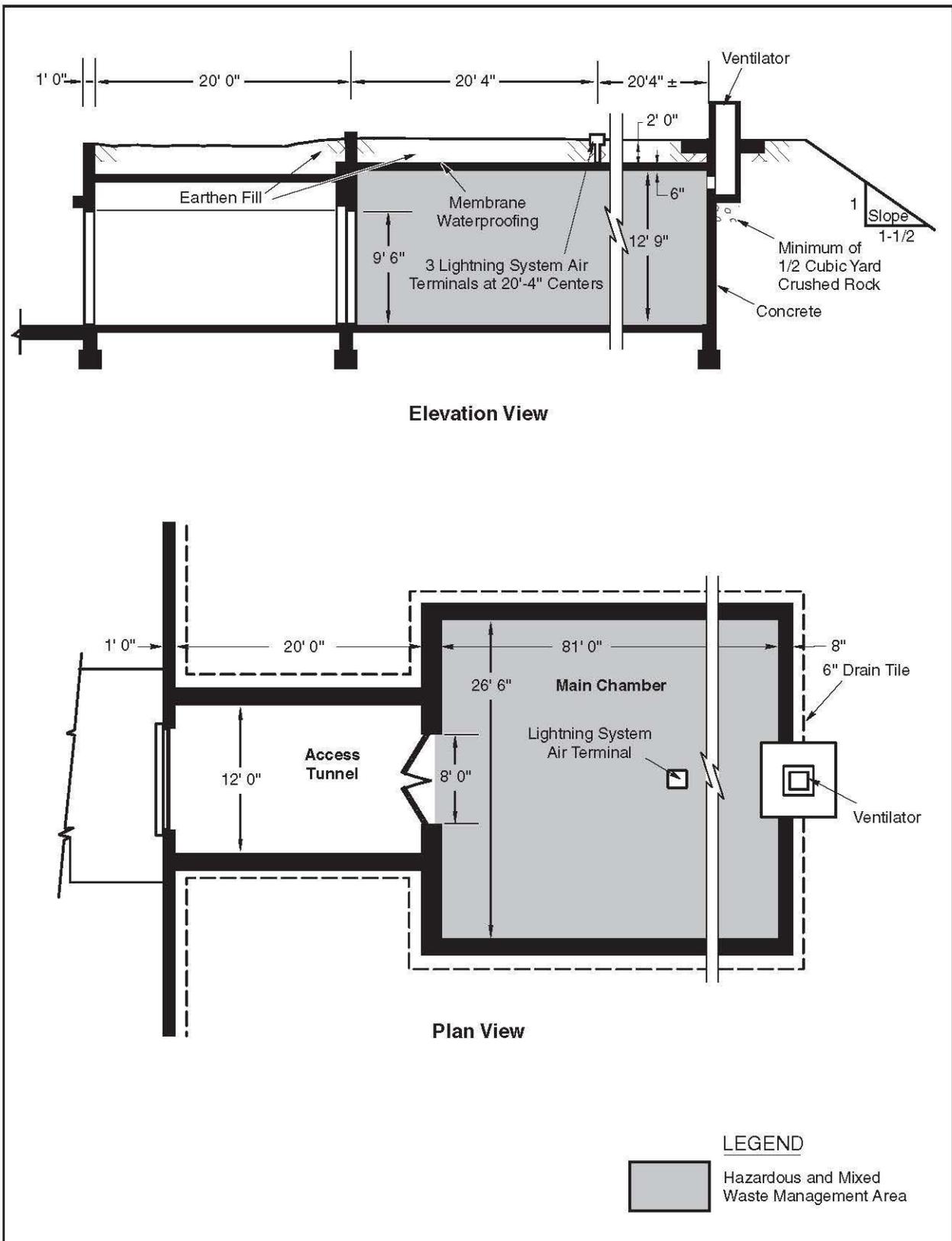


Figure 27
Views, Manzano Storage Bunker, Type B, Bunker 37034

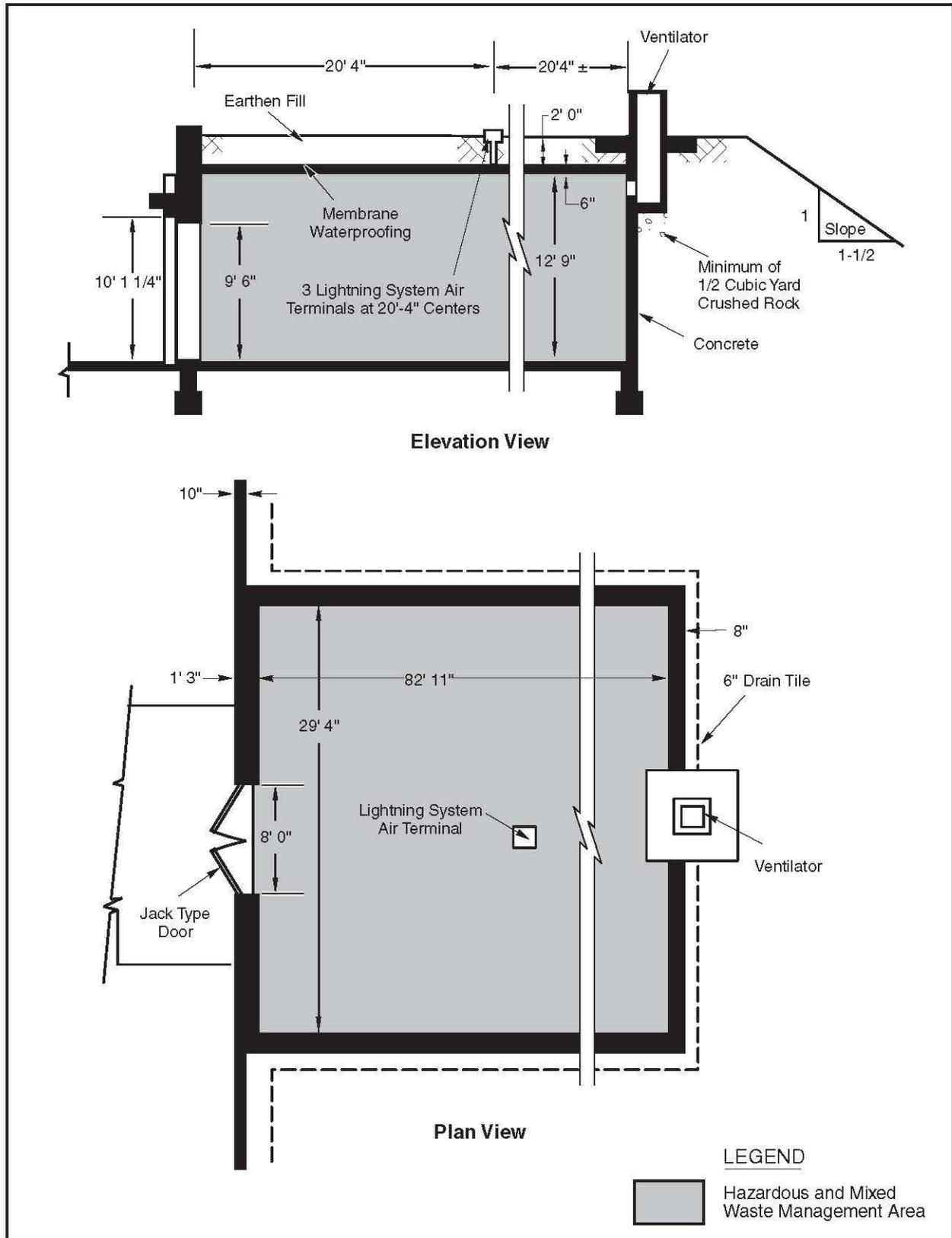


Figure 28
Views, Manzano Storage Bunker, Type C, Bunker 37118

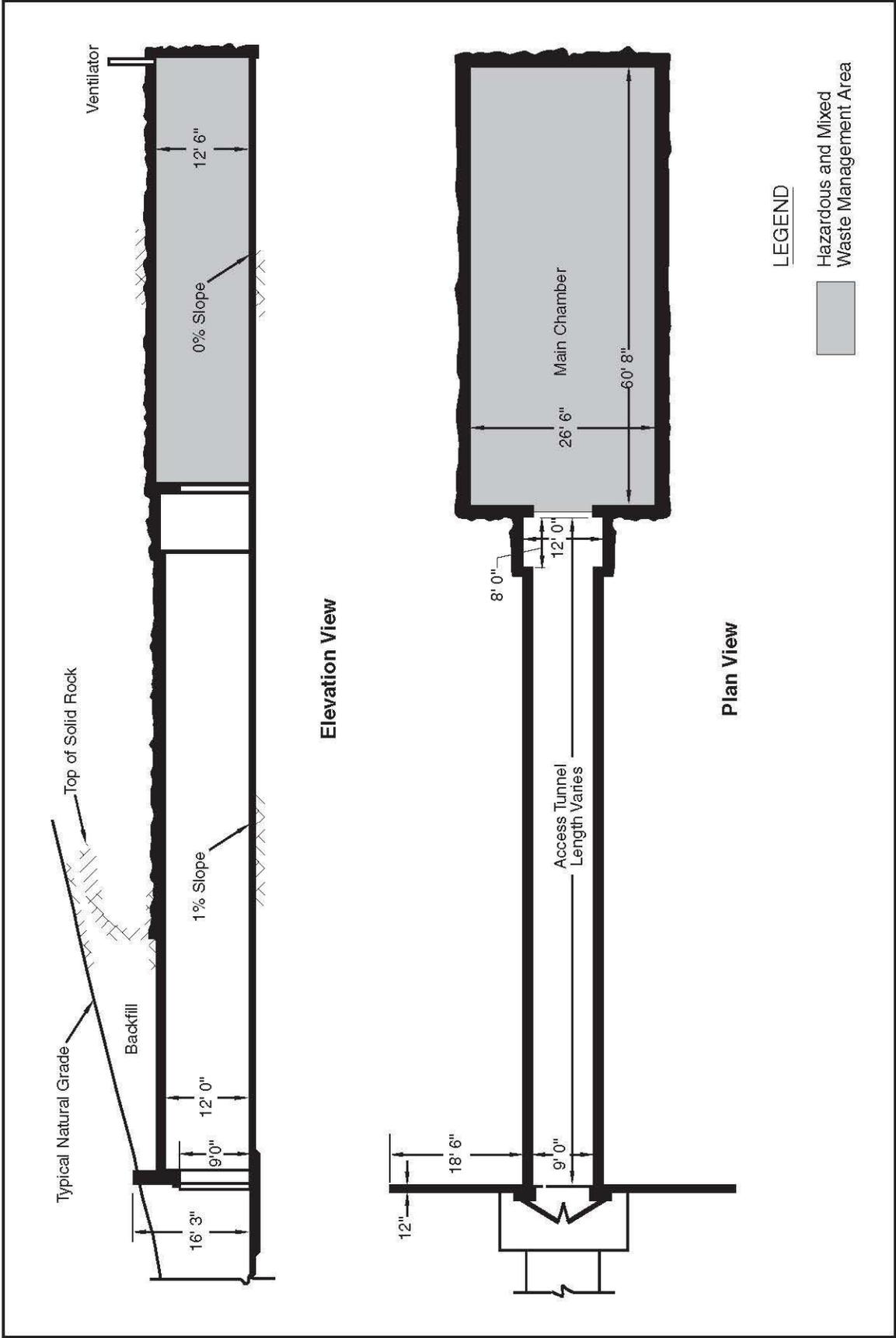


Figure 29
Views, Manzano Storage Bunkers, Type D Bunkers 37045, 37055, and 37057

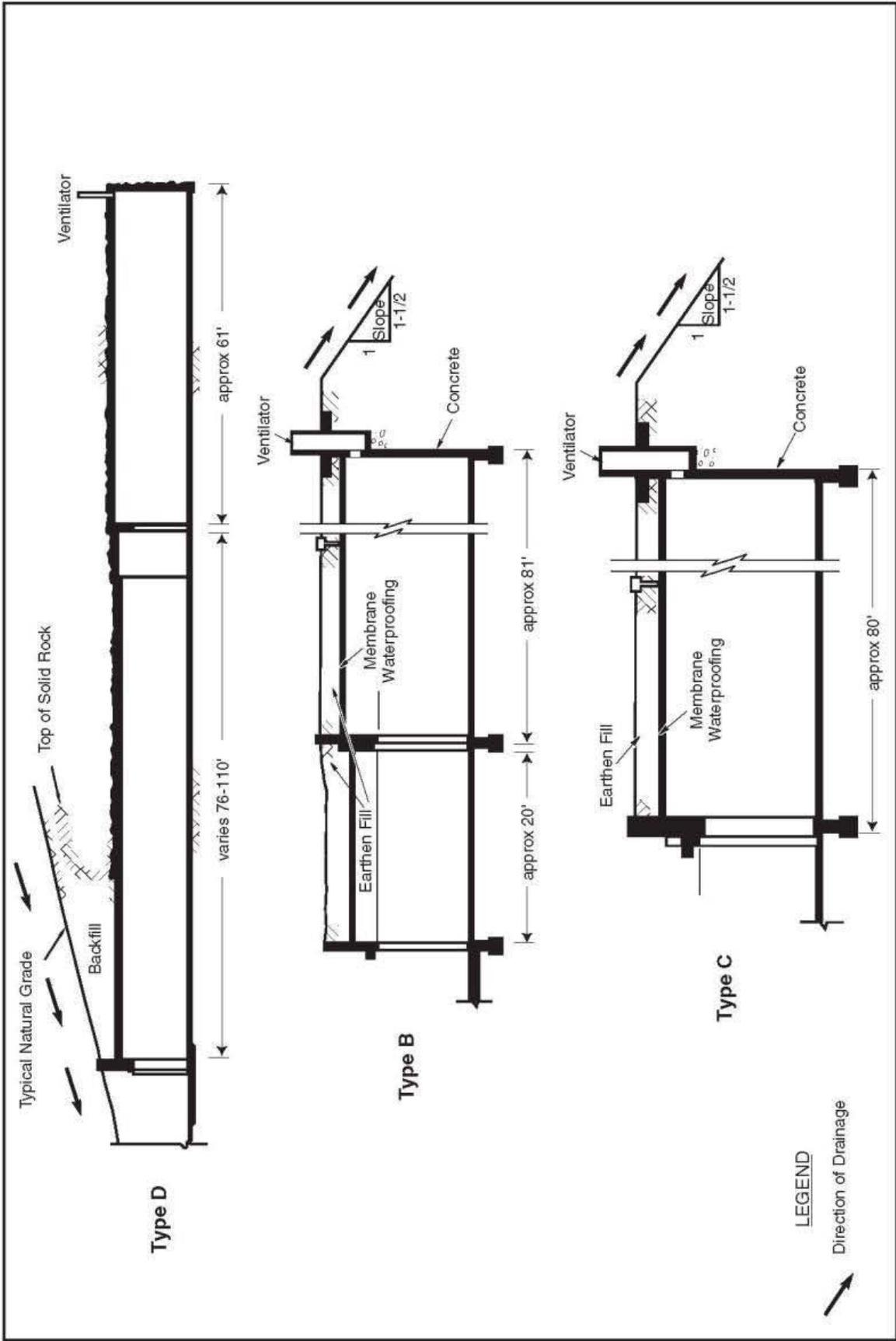


Figure 30
Manzano Storage Bunkers, Drainage Control Features

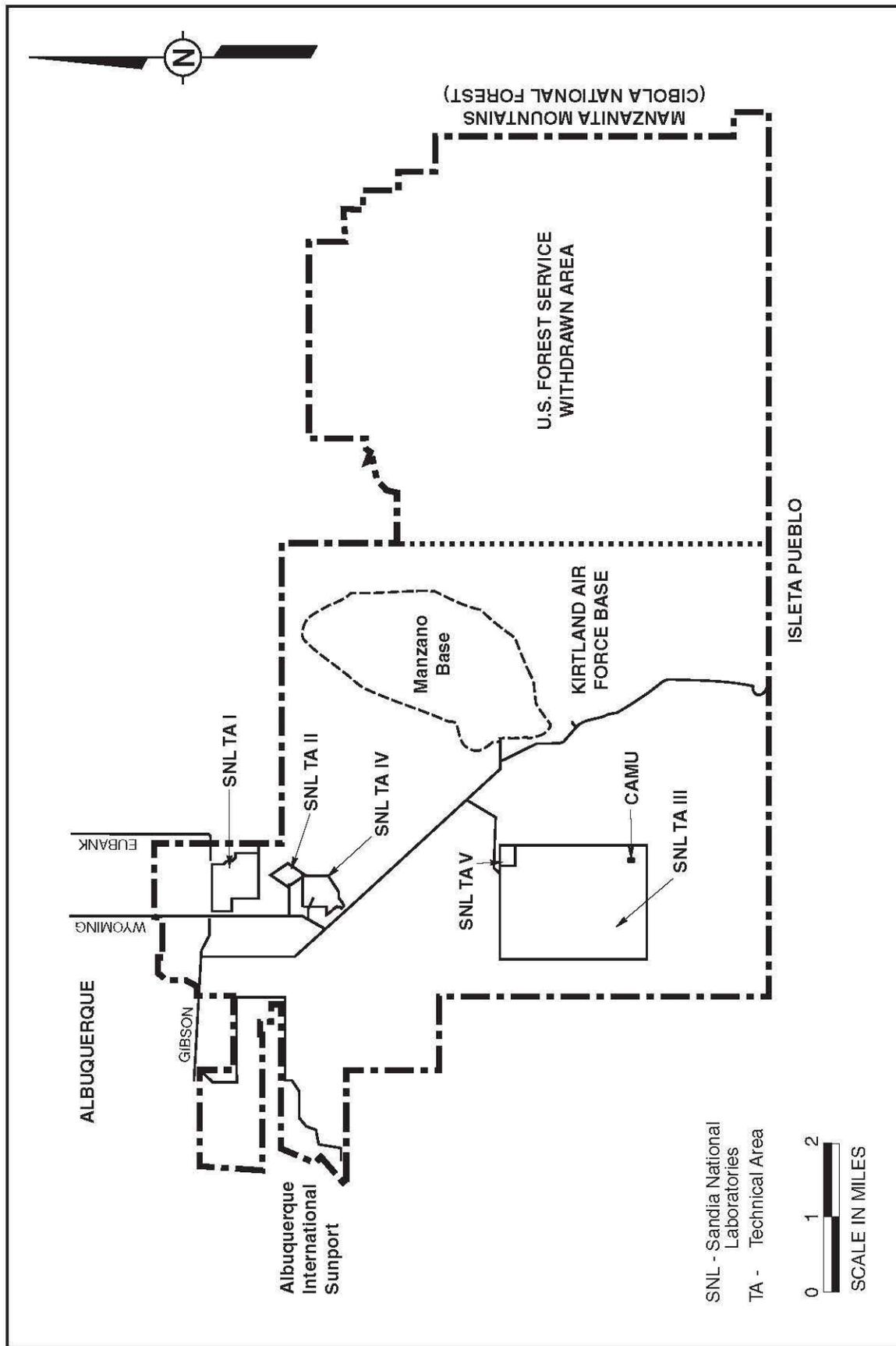


Figure 31
Location of the Corrective Action Management Unit (CAMU) at the Facility

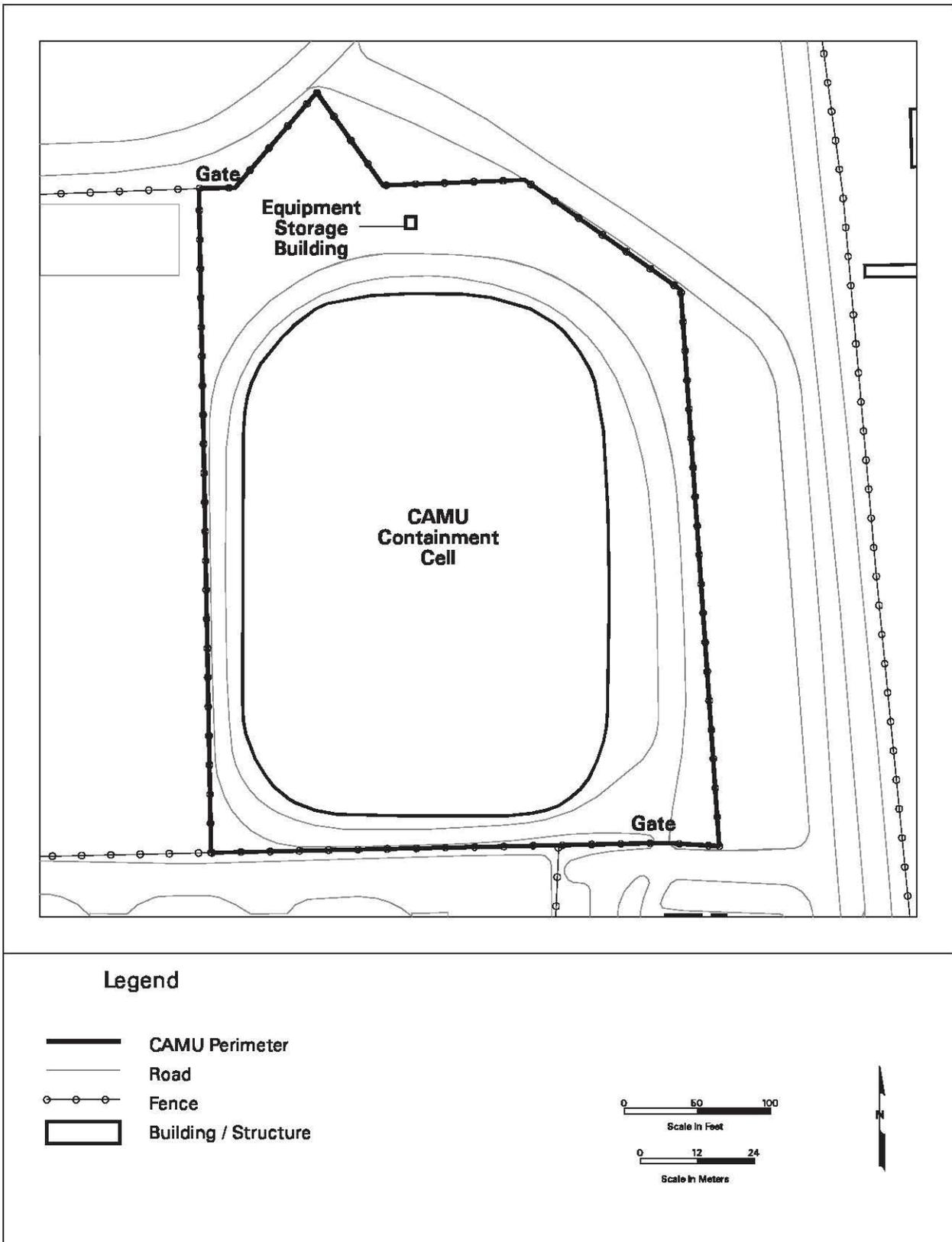


Figure 32
Post-Closure Perimeter
Corrective Action Management Unit (CAMU)

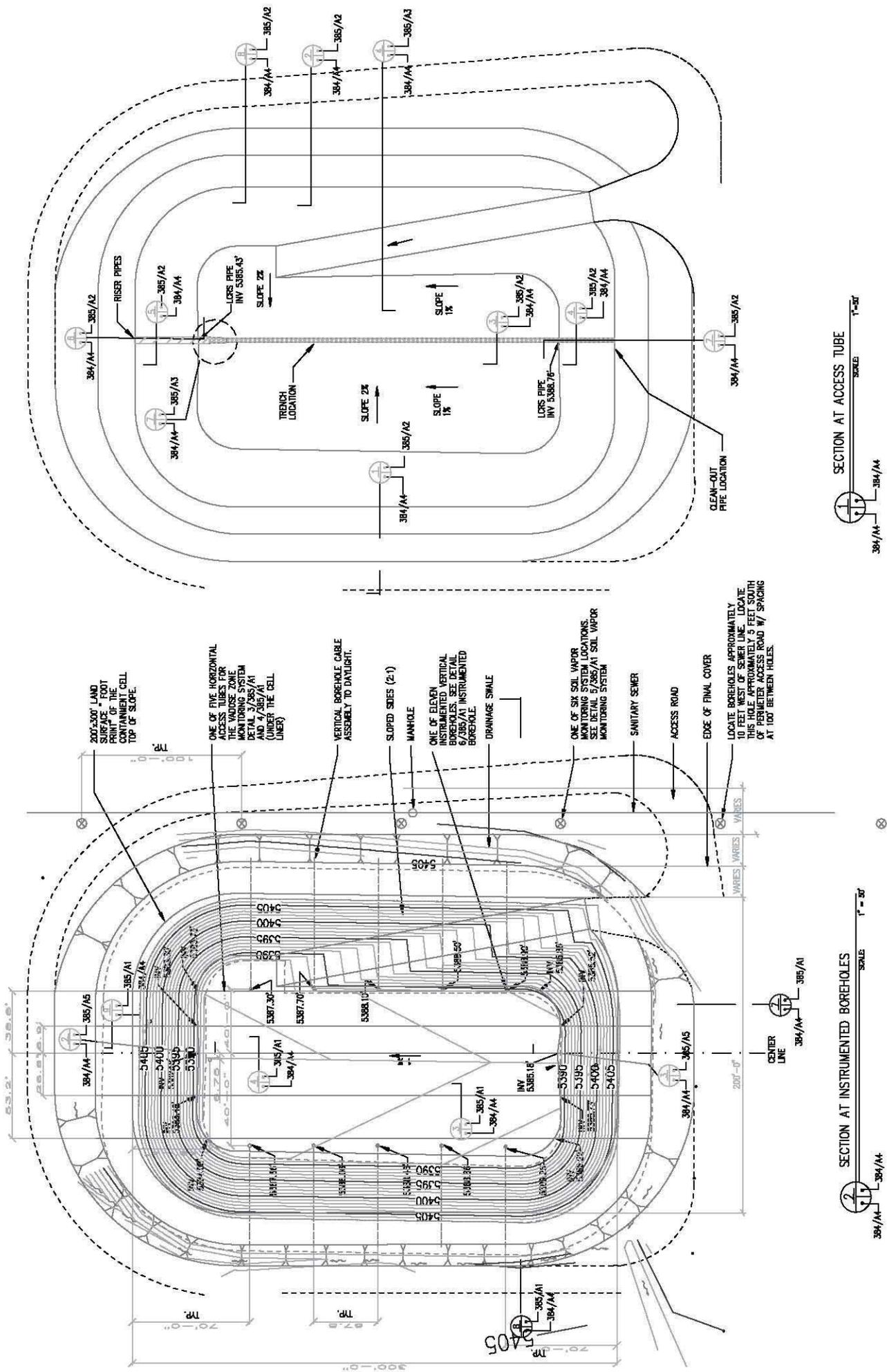


Figure 33
Corrective Action Management Unit
Containment Cell Site Plan

North

South

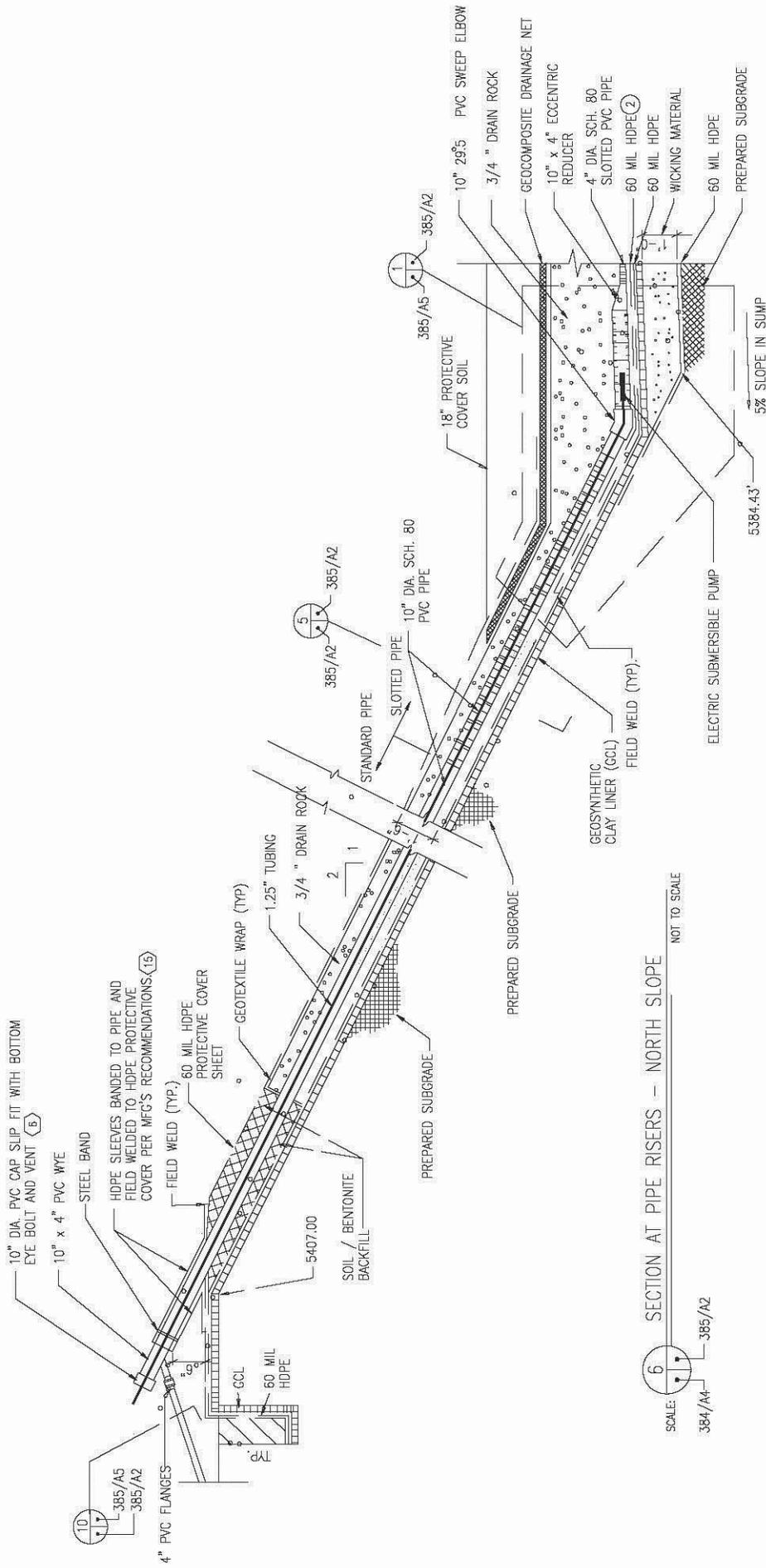


Figure 34
Corrective Action Management Unit
North-South Cross-Section of Leachate Collection and Removal System Sump

West

East

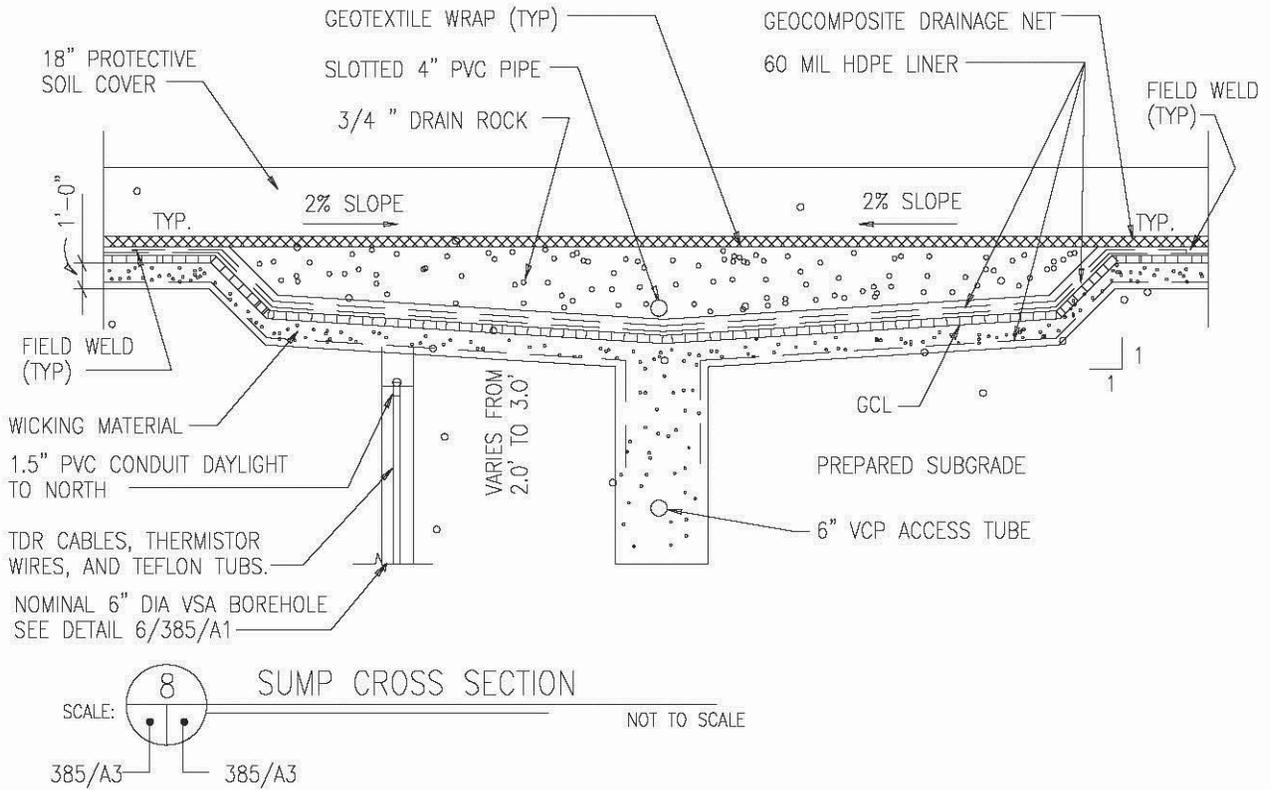


Figure 35
Corrective Action Management Unit
West-East Cross-Section of Containment Cell

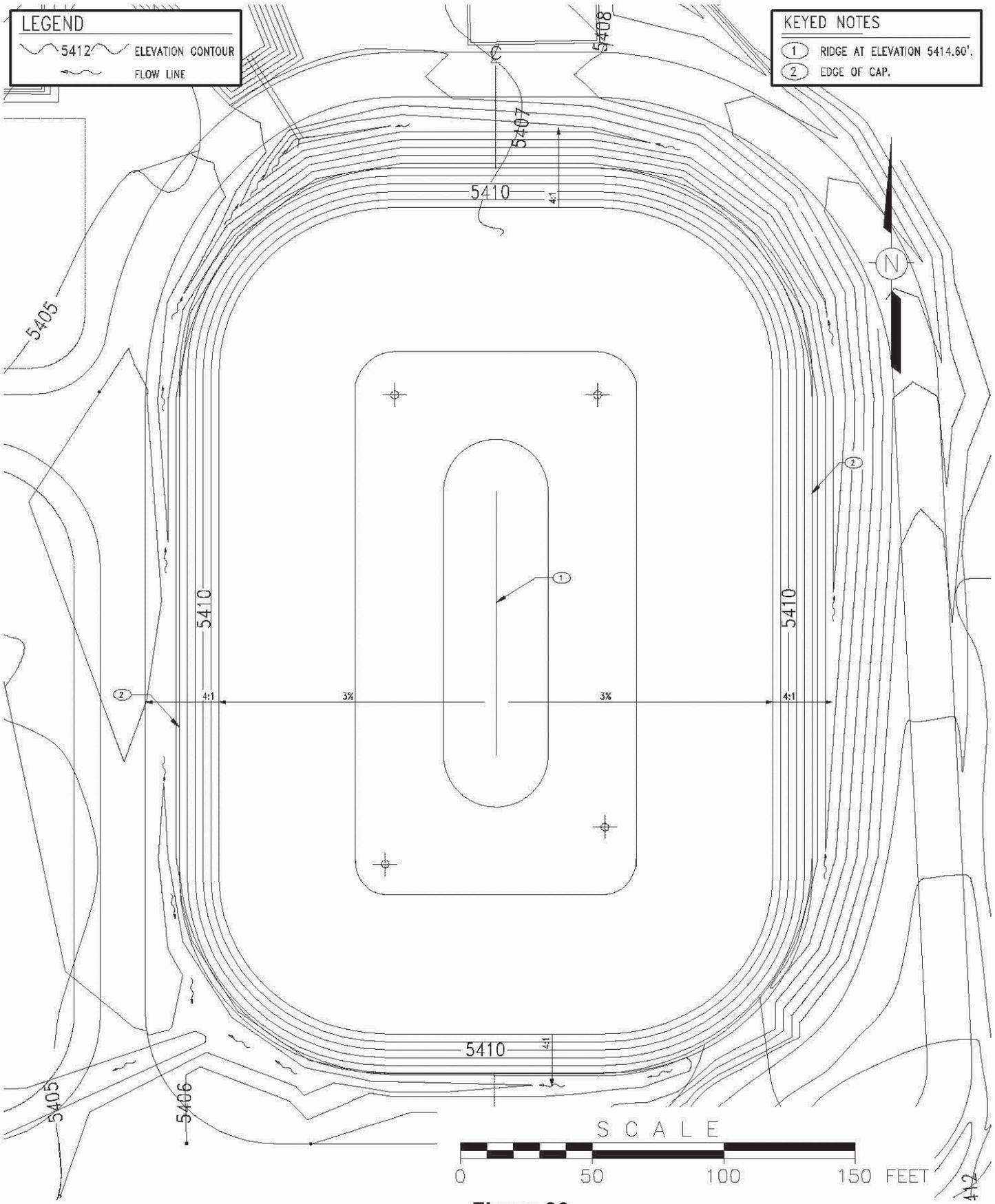


Figure 36
Plan View of Completed
Corrective Action Management Unit (CAMU) Containment
Cell Showing Final Cover Configuration and
Associated Perimeter Drainage Pathways

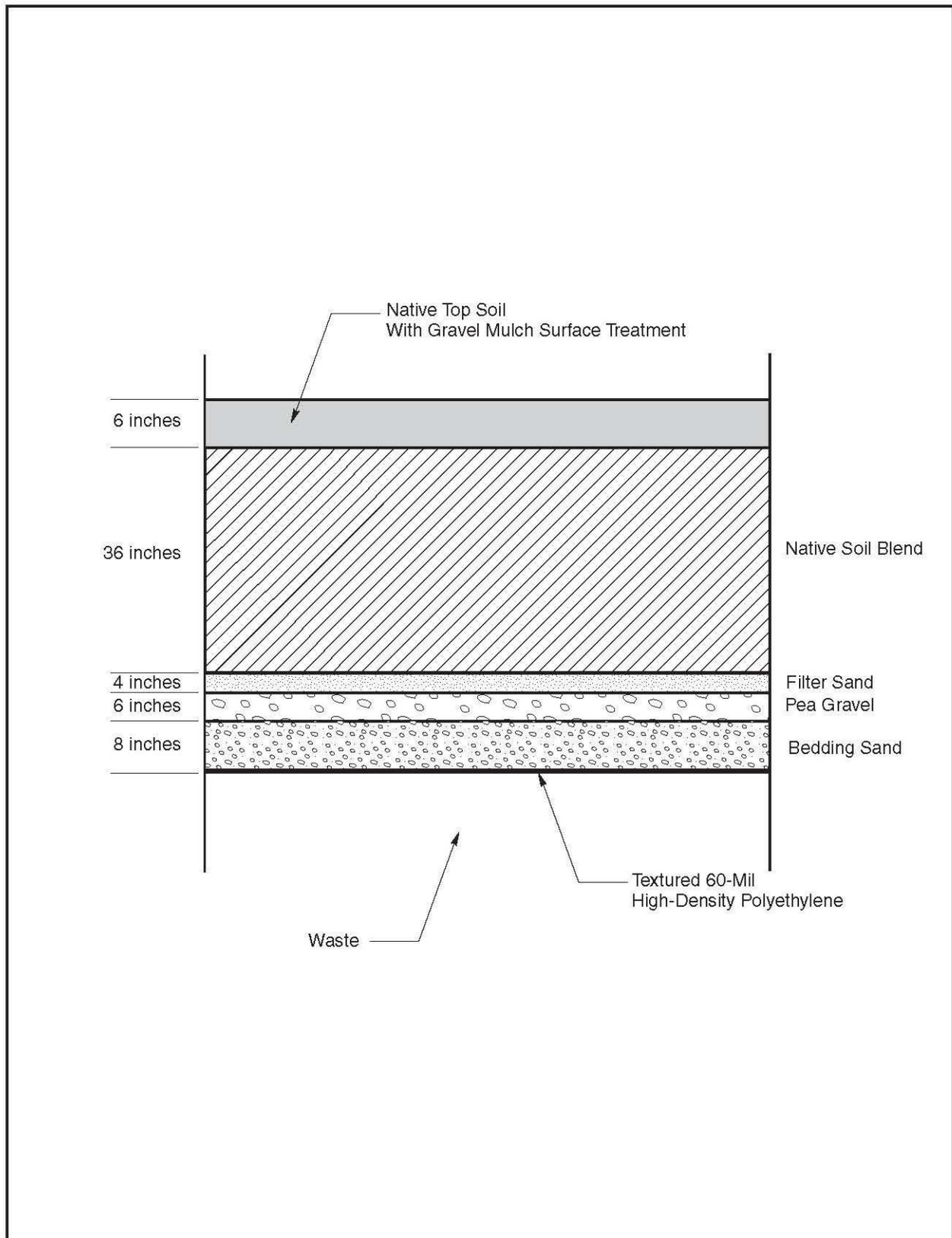


Figure 37
Schematic Cross-Section of Final Cover System,
Corrective Action Management Unit Containment Cell

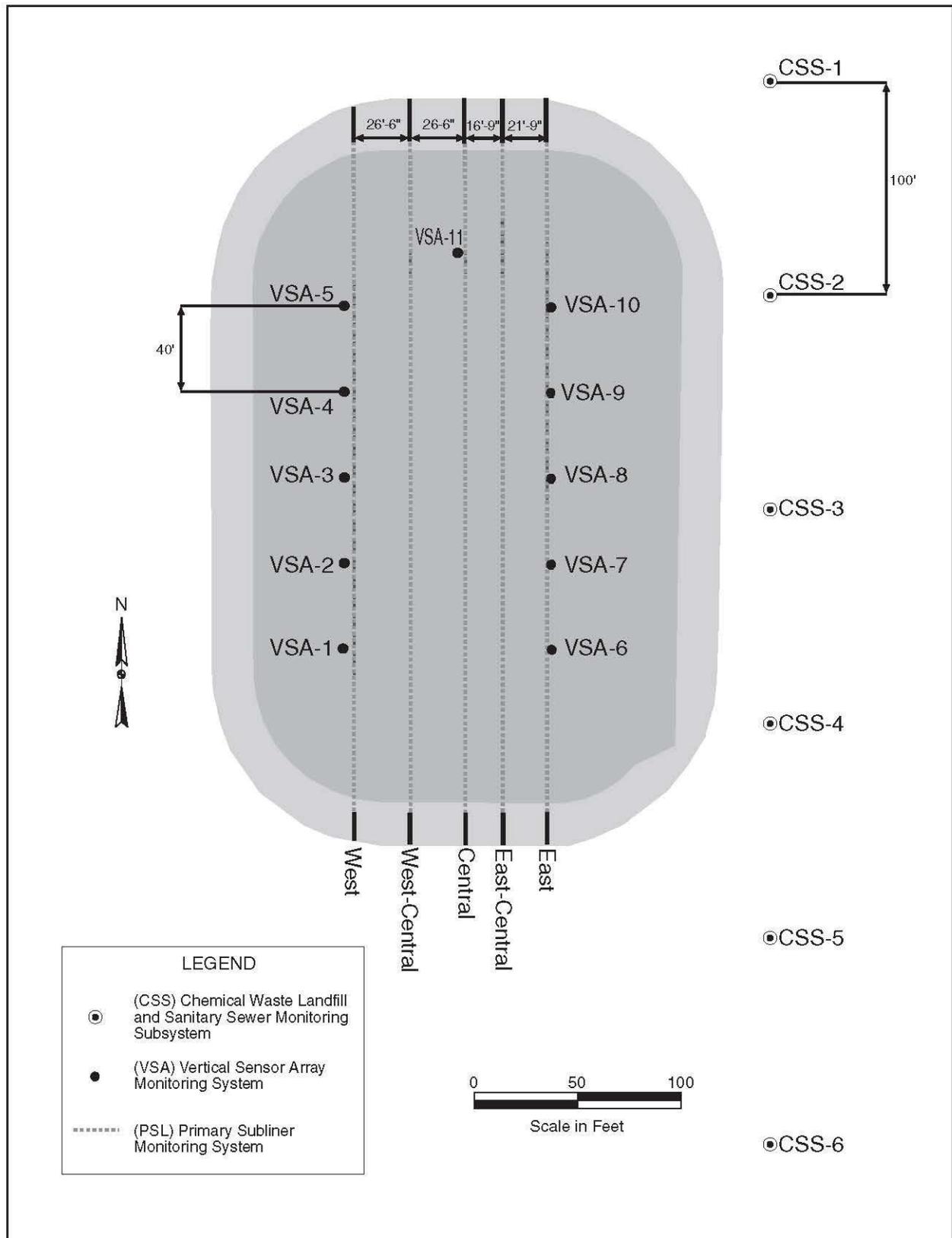


Figure 38
Plan View of Corrective Action Management Unit Containment Cell
and Vadose Zone Monitoring System

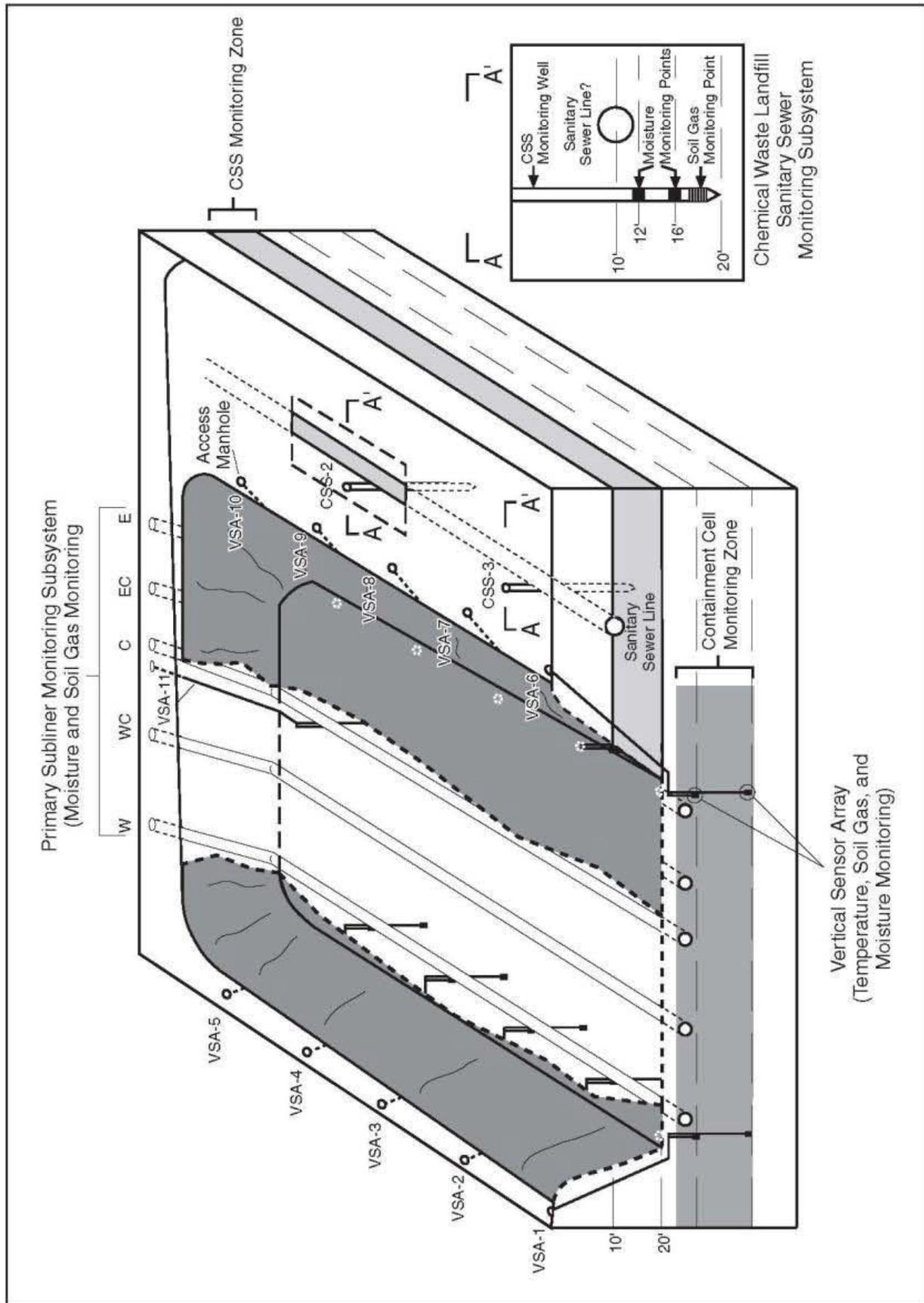


Figure 39
Block Diagram of Corrective Action Management Unit Containment Cell
and Vadose Zone Monitoring System

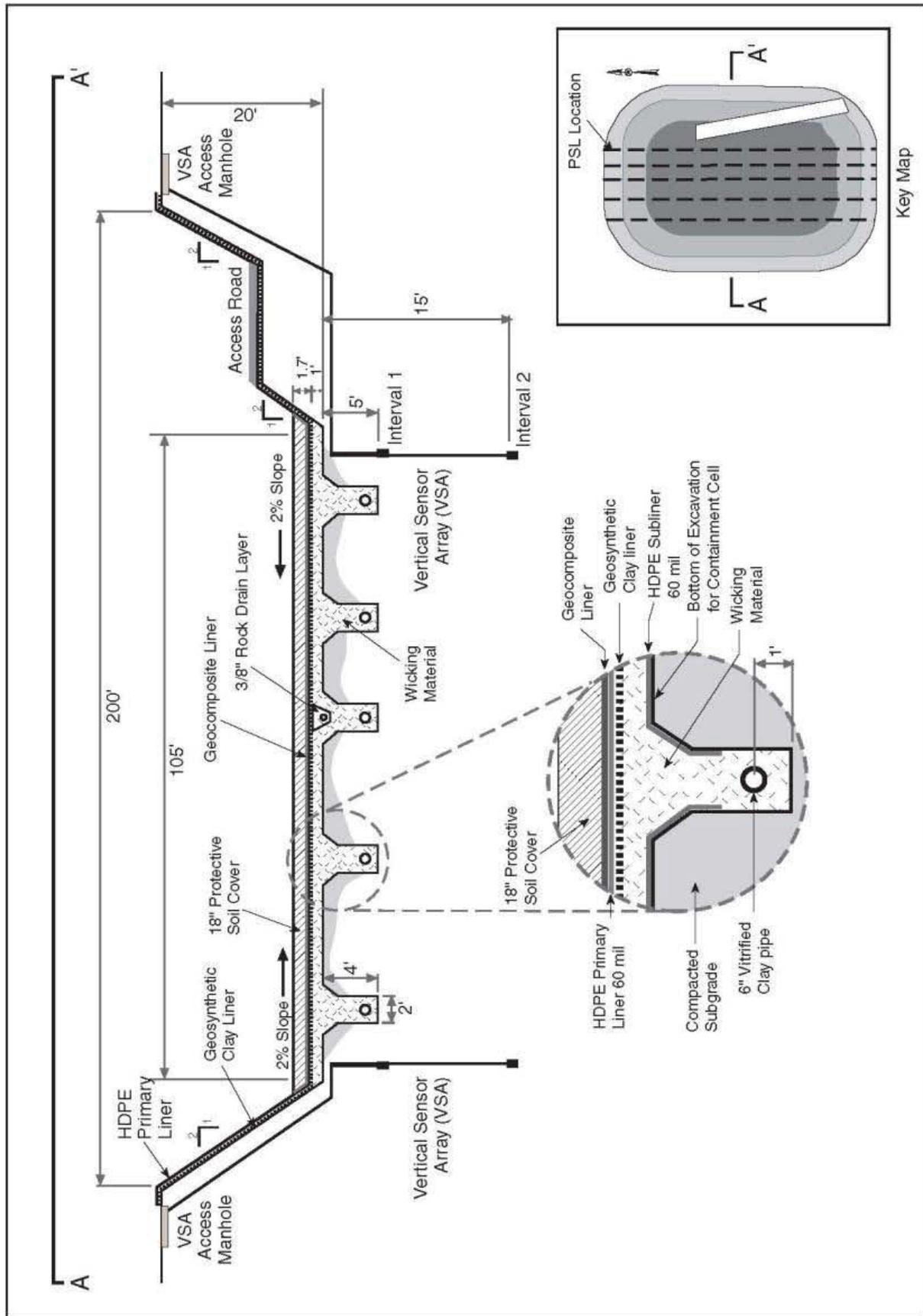


Figure 40
Cross-Section View of Corrective Action Management Unit Containment Cell
and Primary Subliner Monitoring Subsystem

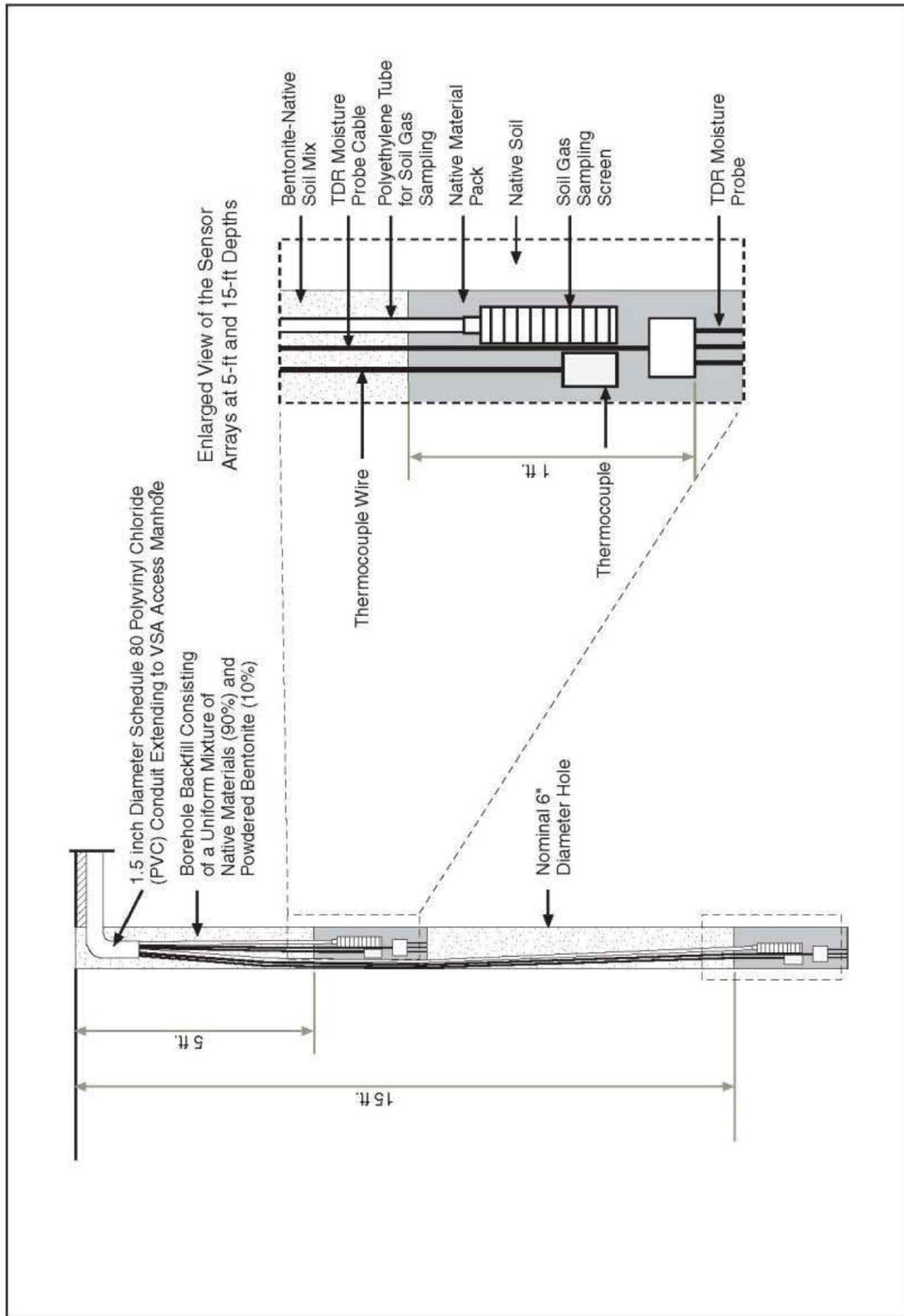


Figure 41
Configuration of Vertical Sensor Array Monitoring Subsystem

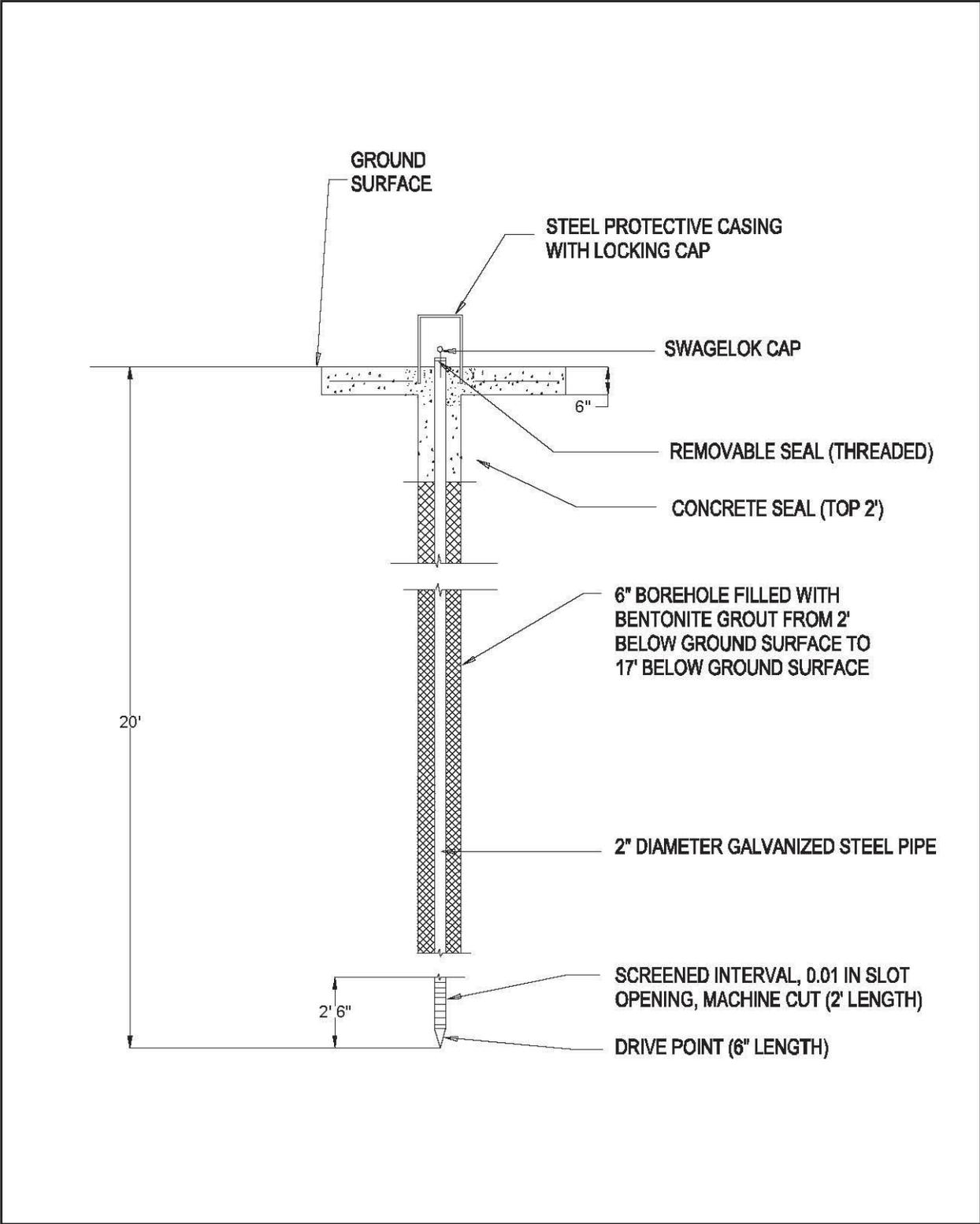


Figure 42
Cross-Section Configuration of Chemical Waste Landfill and Sanitary Sewer Monitoring Subsystem

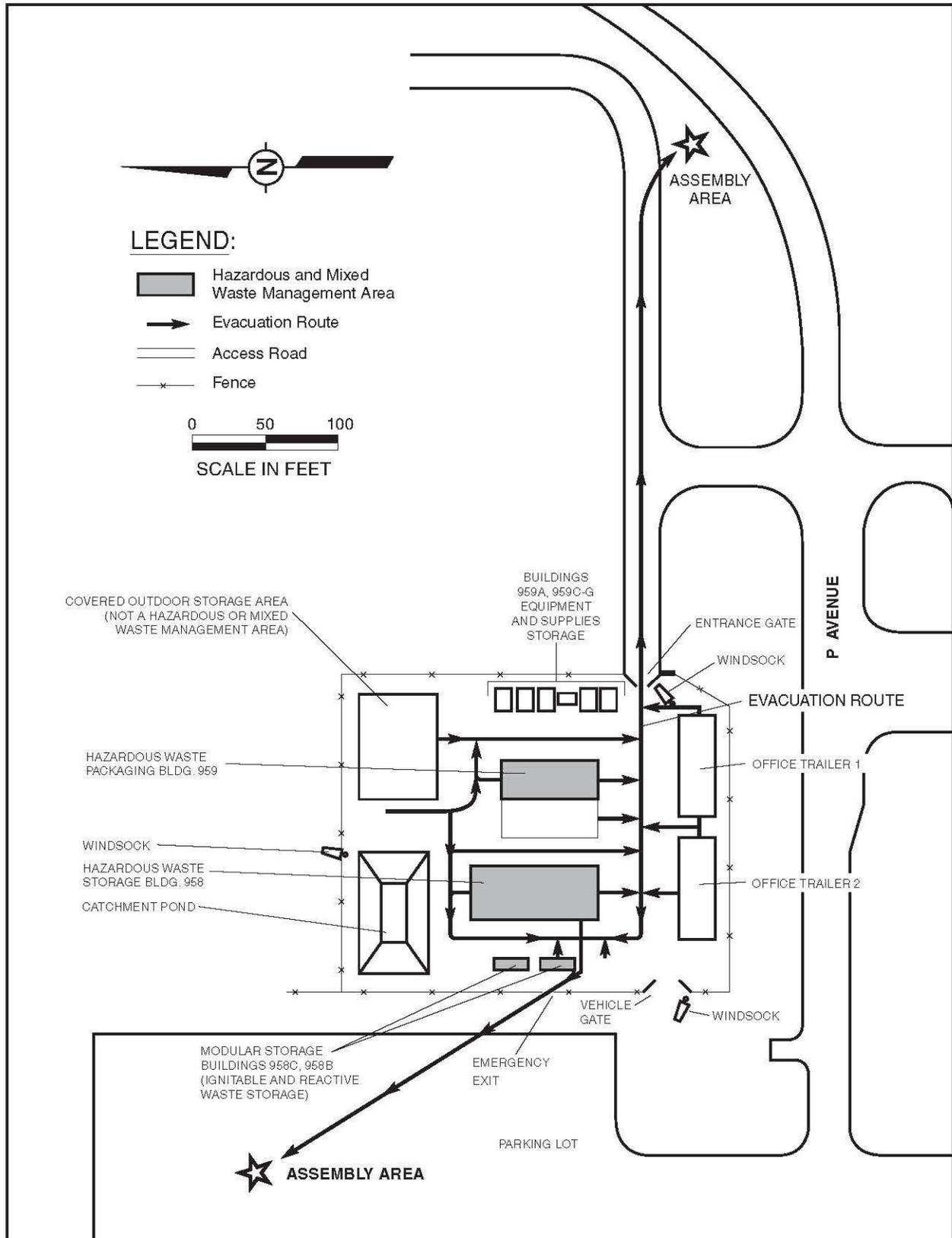


Figure 43
Hazardous Waste Handling Unit Evacuation Routes

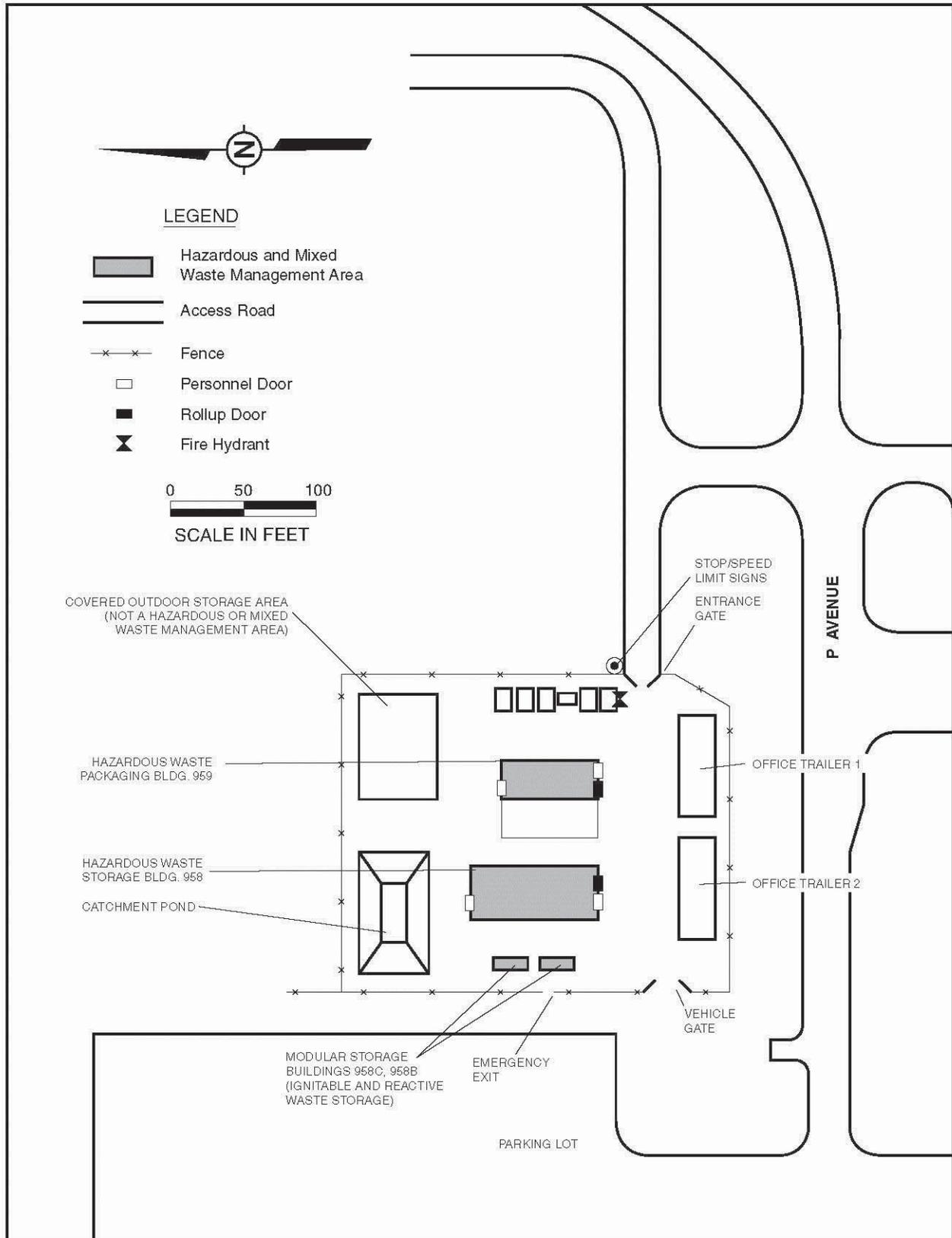
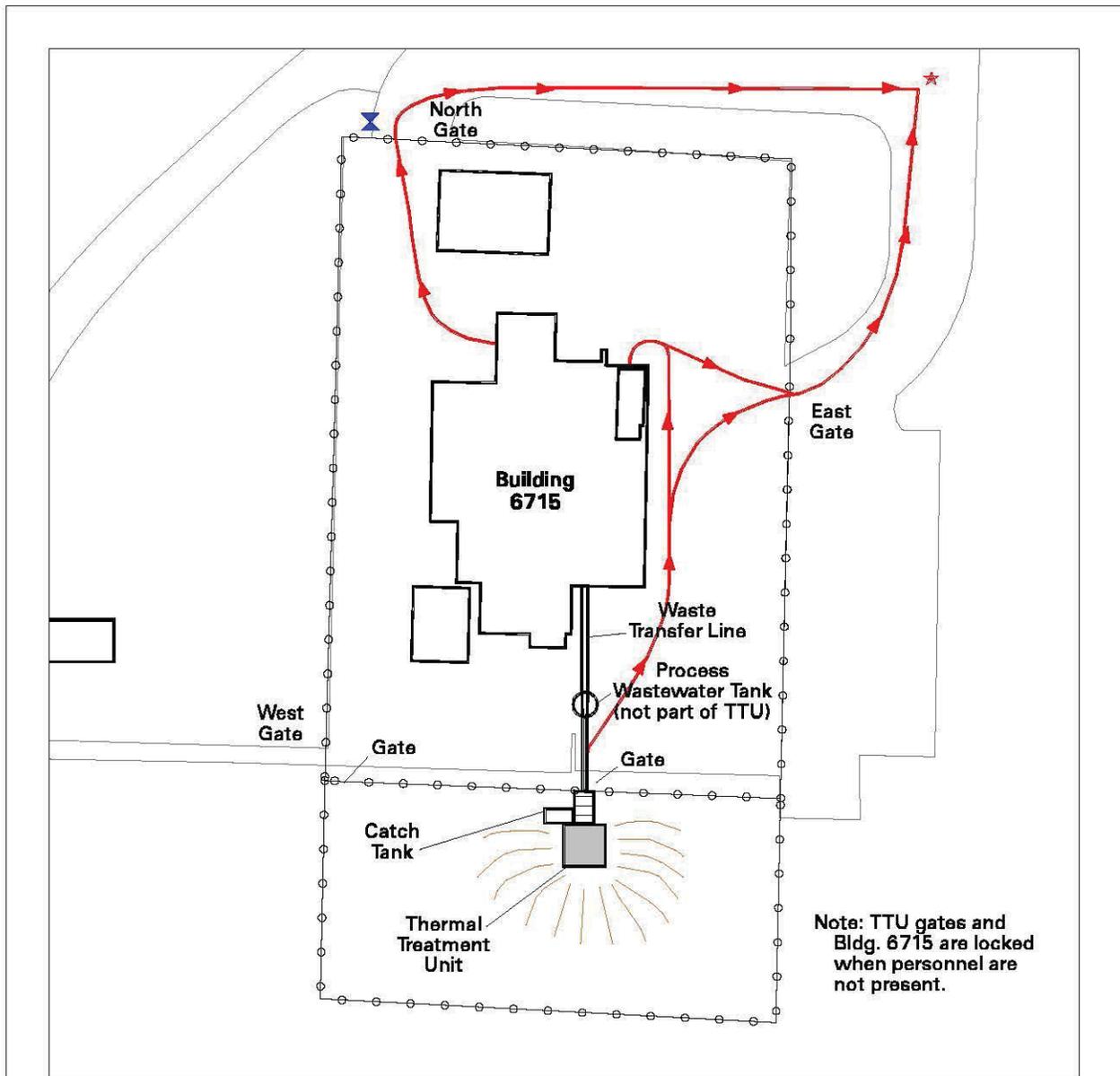
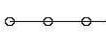


Figure 44
Hazardous Waste Handling Unit Emergency Response and Access Information



Legend

-  Earthen Berm
-  Road / Parking
-  Fence
-  Evacuation Route
-  Building / Structure
-  Hazardous Waste Management Area
-  Steps
-  Assembly Area
-  Fire Hydrant

0 25 50
Scale In Feet

0 6 12
Scale In Meters

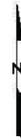


Figure 45
Thermal Treatment Unit (TTU)
Evacuation Route

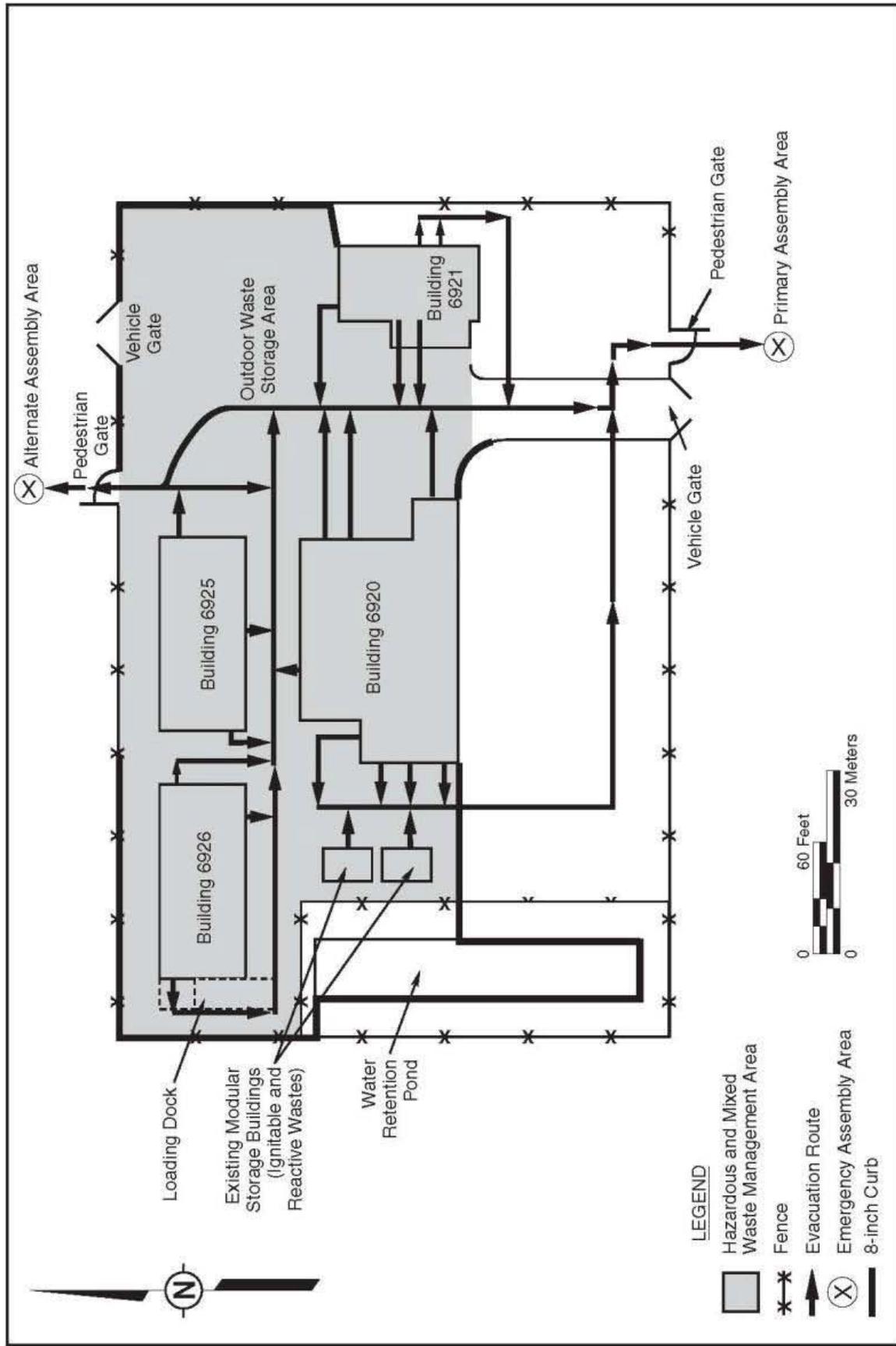


Figure 46
Radioactive and Mixed Waste Management Unit,
Evacuation Routes

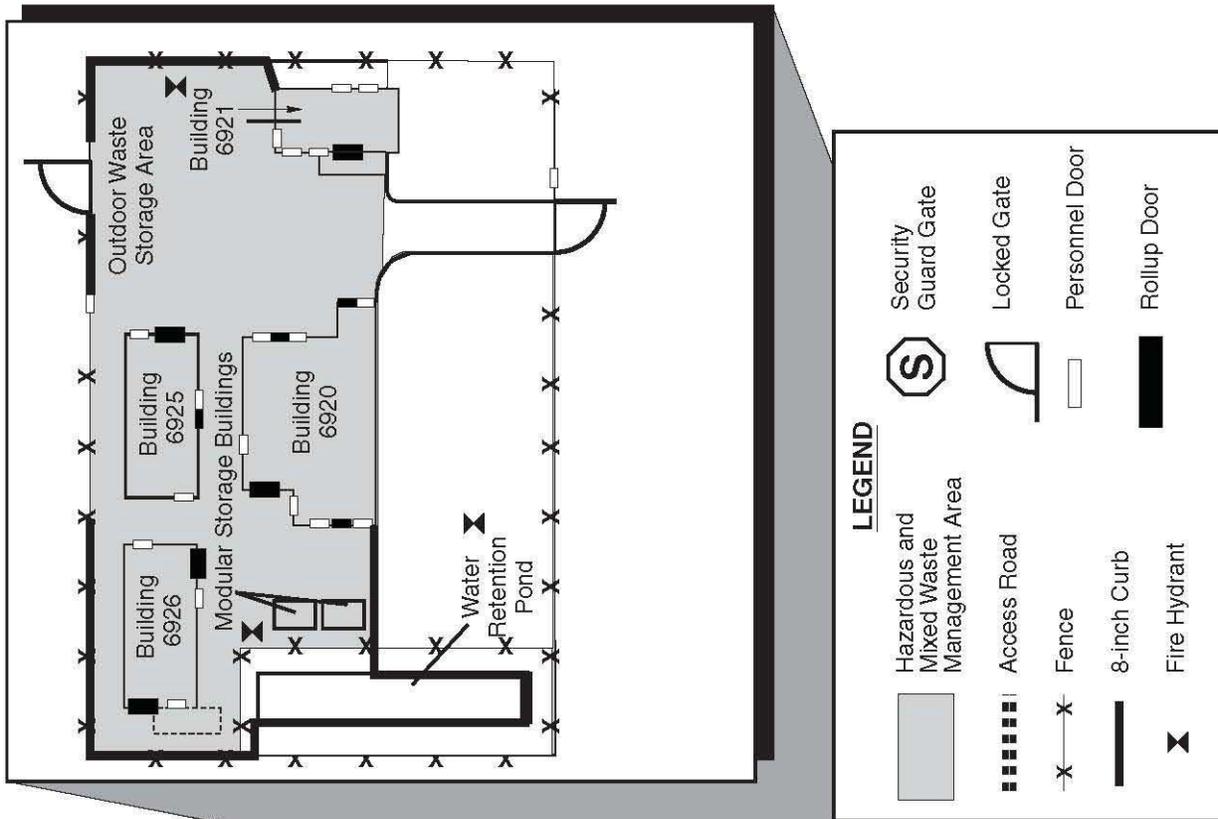
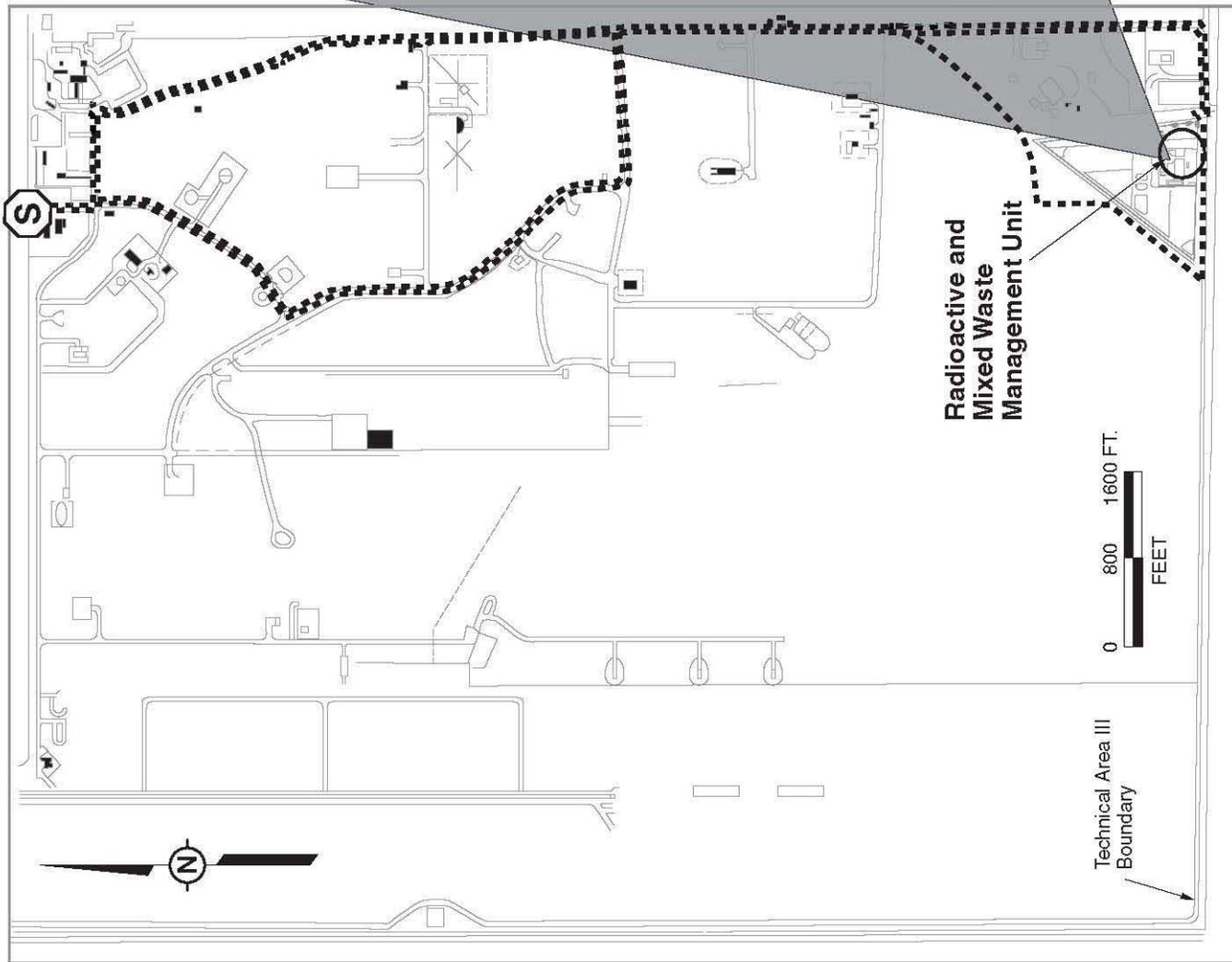


Figure 47

Radioactive and Mixed Waste Management Unit, Emergency Response and Access Information

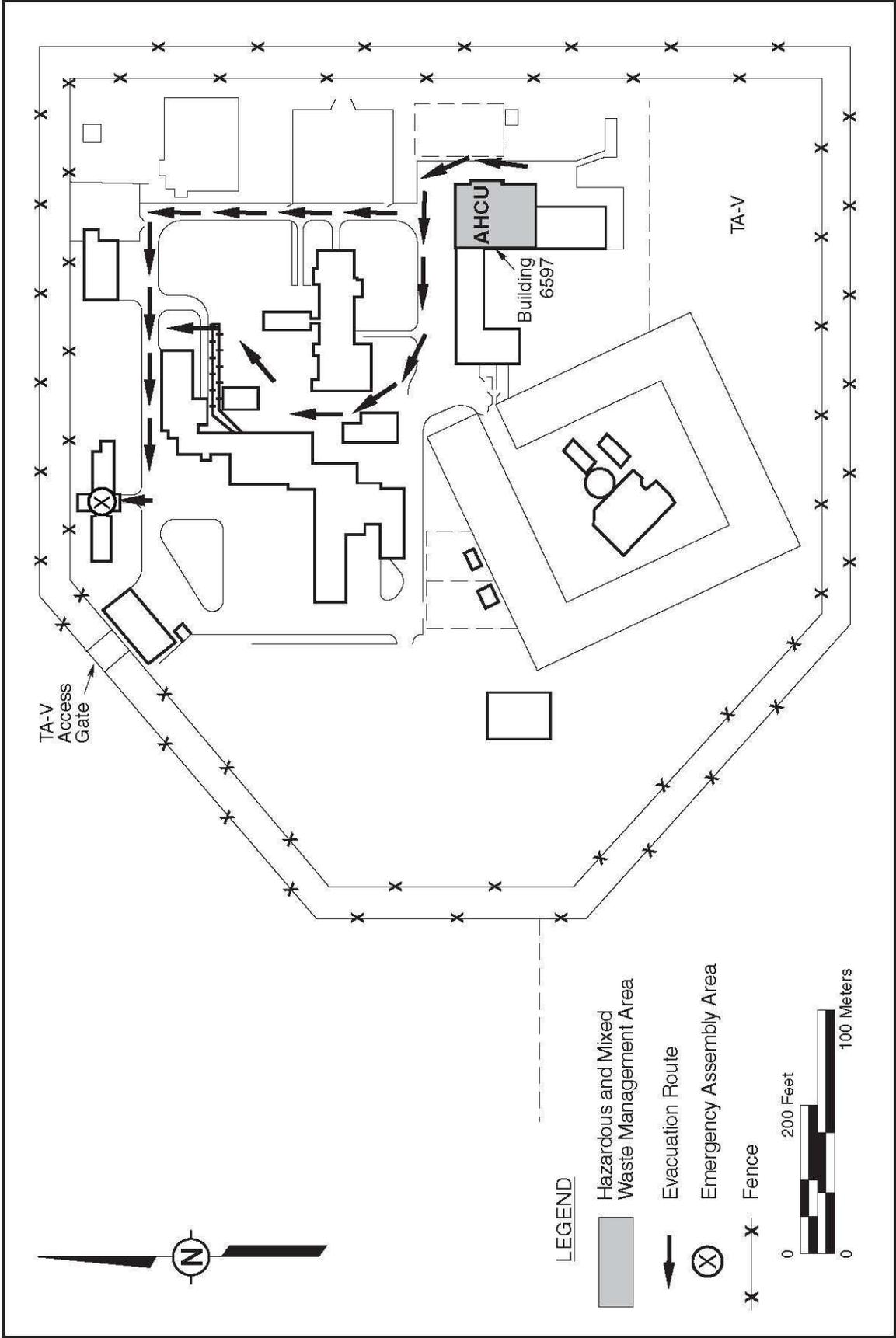


Figure 48
Auxiliary Hot Cell Unit (AHCU), Evacuation Routes

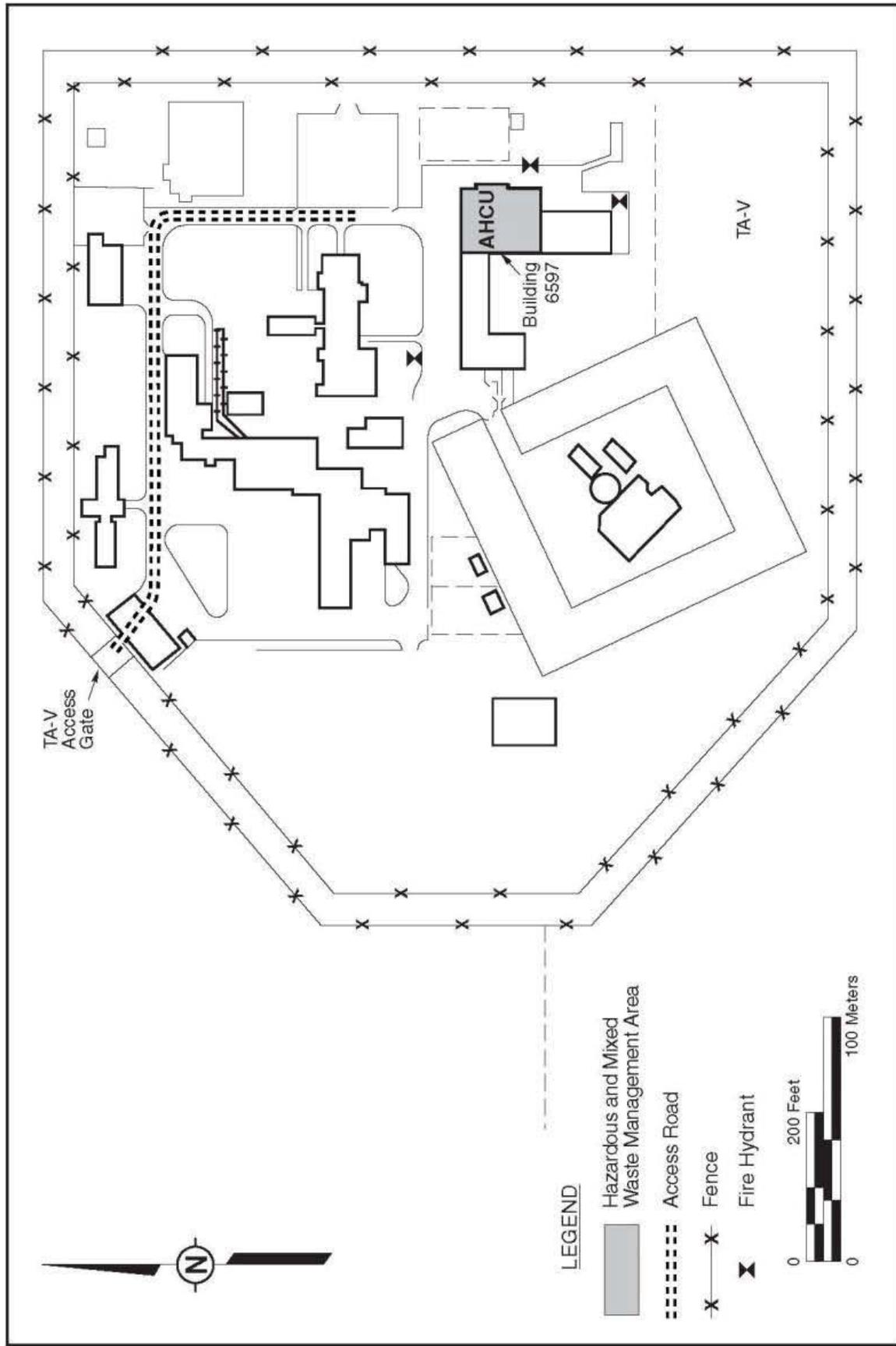


Figure 49
Auxiliary Hot Cell Unit (AHCU), Emergency Response and Access Information

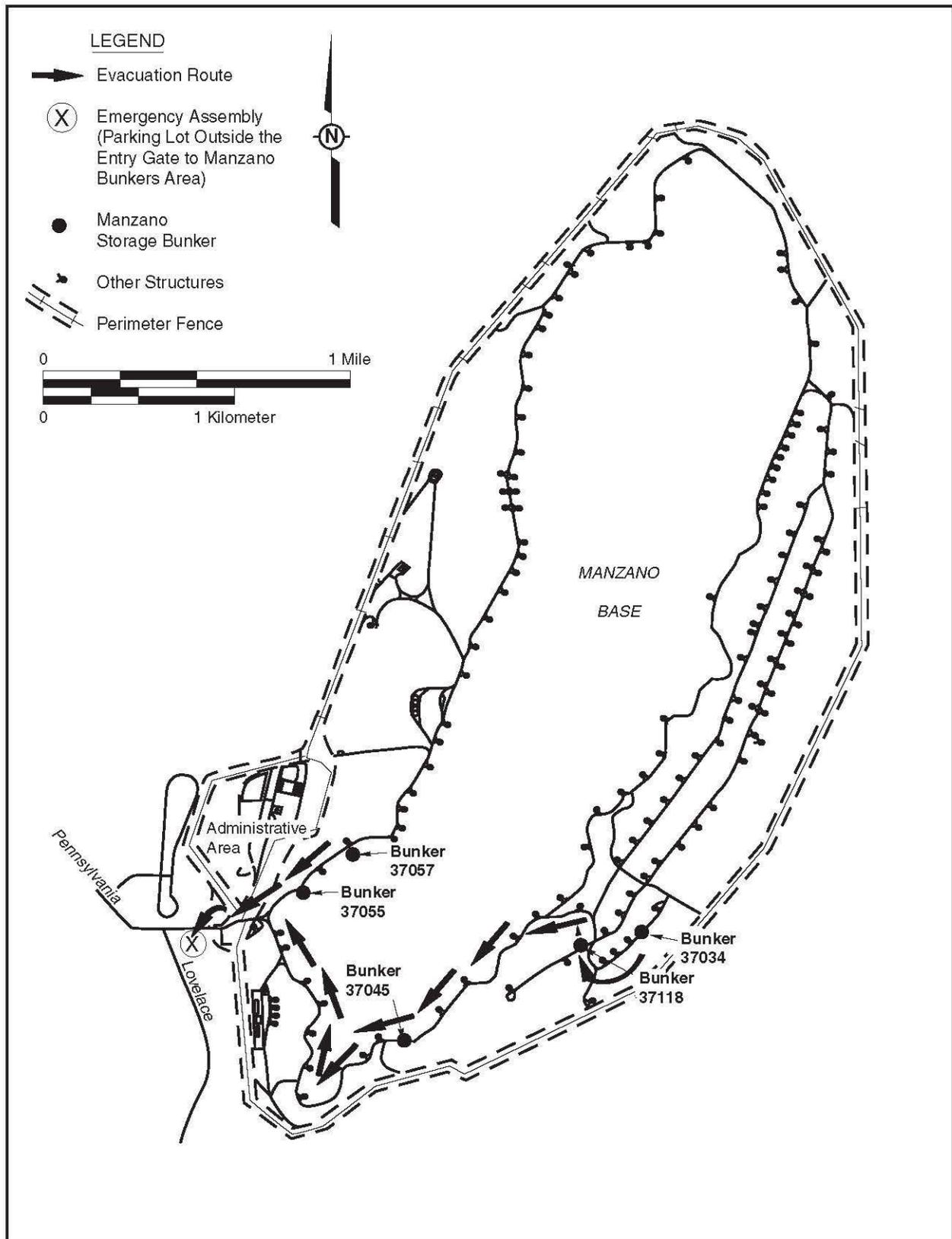


Figure 50
Manzano Storage Bunkers, Evacuation Routes

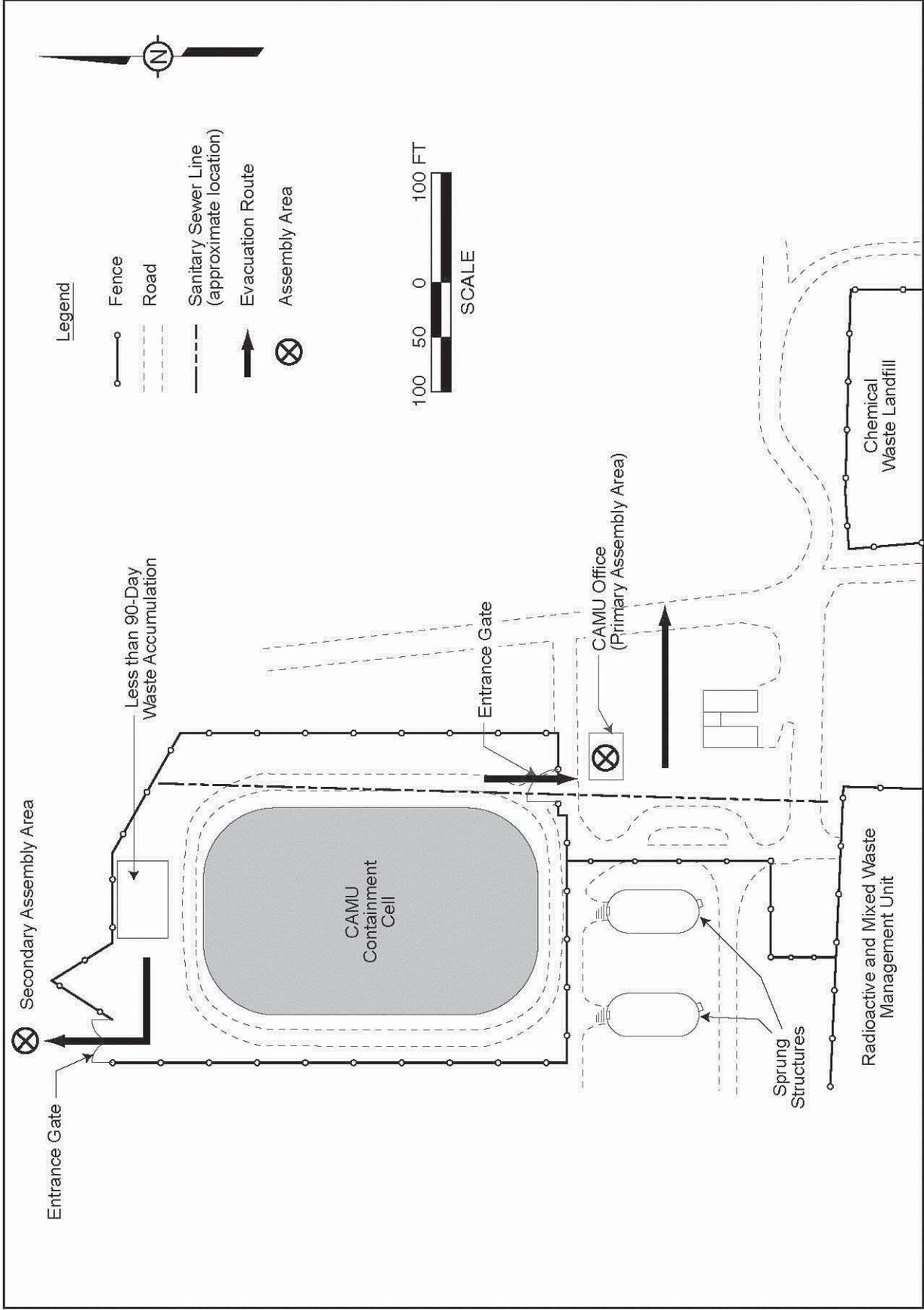
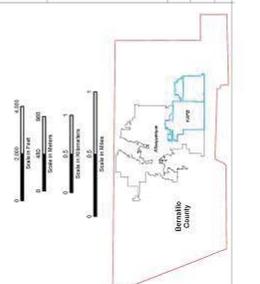
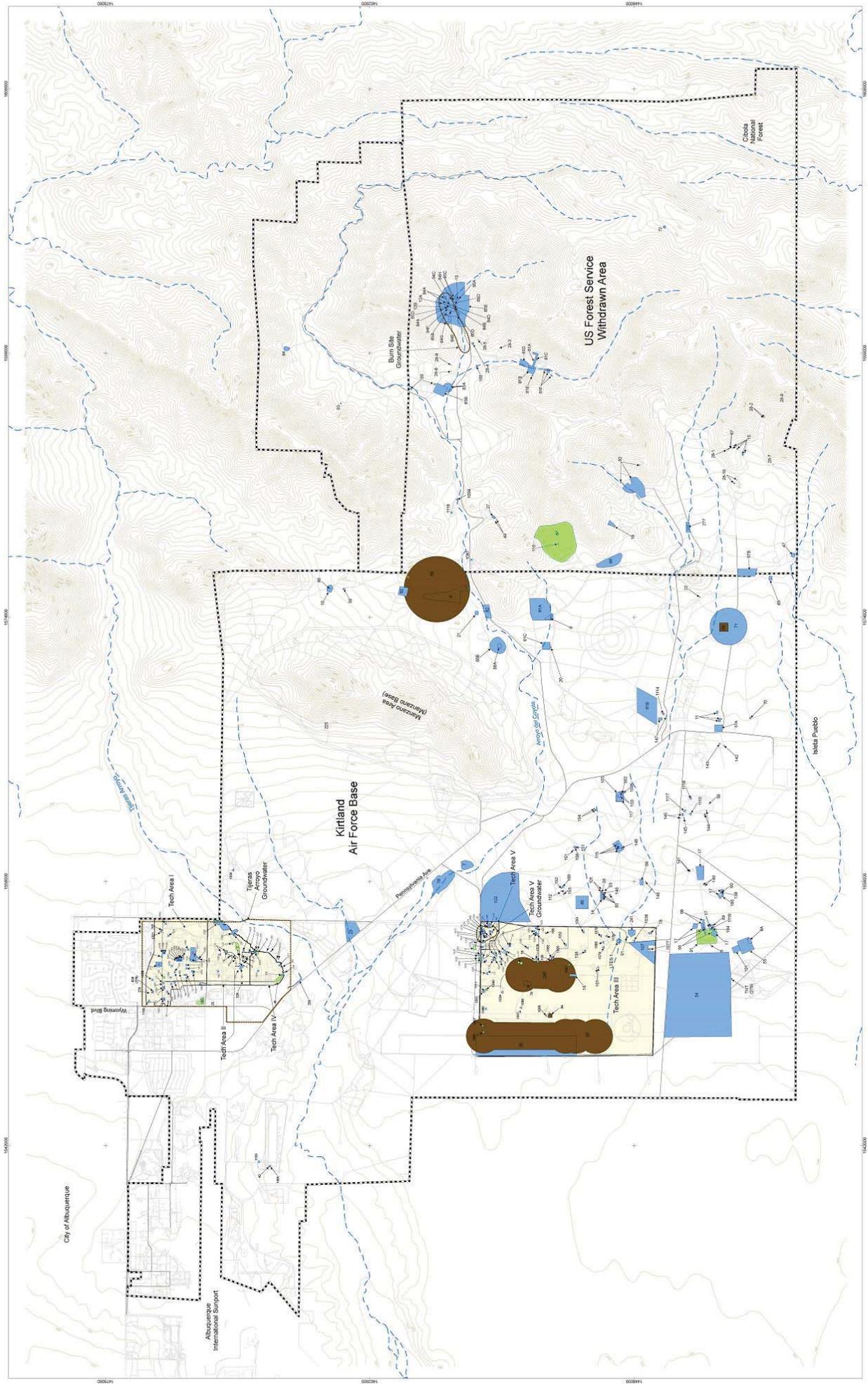


Figure 51
Local Area Map of Corrective Action Management Unit
Containment Cell Evacuation Routes



- | | | | |
|--|---------------------------|--|----------------------------------|
| | SNL Technical Area | | AOC Area of Concern |
| | KAFB boundary | | DOE US Department of Energy |
| | Major road | | KAFB Kirtland Air Force Base |
| | Road | | SNL Sandia National Laboratories |
| | 40-foot elevation contour | | SWMU Solid Waste Management Unit |
| | Change feature | | |

- Legend**
- SWMU or AOC Requiring Corrective Action Under the Consent Order (See Table K-1)**
- SWMU or AOC
 - Groundwater investigation
 - SWMU or AOC
 - Microbiological data or septic system
 - Microbiological data or septic system - no investigation needed
- SWMU or AOC for which Corrective Action is Complete with Controls (See Table K-3)**
- SWMU or AOC
 - Microbiological data or septic system
 - Note: SWMU 98 and 107 not shown

**Appendix A-1: Photographs of the Hazardous and Mixed Waste Management Areas at
the HWHU**



Hazardous Waste Handling Unit, Buildings 958 and 959
Photograph Taken on January 3, 2002
Process Code: S01

Building 958 is on the left, and Building 959 is on the right.



Hazardous Waste Handling Unit, Flammable Waste Storage Bay in Building 958
Photograph Taken on January 3, 2002
Process Code: S01



Hazardous Waste Handling Unit, Waste Storage Bays in Building 959

Photograph Taken on January 3, 2002

Process Code: S01

The drum at the far end of the building near the door contains absorbent for spill control. The bucket on the wall above it contains clean up materials.

Containers of hazardous and mixed wastes (solids and liquids) are segregated into the bays by compatibility and are stored on shelves over secondary containment in the bay



**Hazardous Waste Handling Unit,
Modular Storage Buildings (958B and 958C)**
Photograph Taken on January 3, 2002
Process Code: S01

Appendix A-2: Photographs of the Hazardous Waste Management Areas at the TTU



Thermal Treatment Unit
Viewed from Roof of Building 6715
Photograph Taken October 23, 2003
Process Code: X01

The sheet metal housing and propane lines for the propane burners are on the left side of the burn cage. The sheets of steel on the right side and the back of the burn cage are attached at the top and provide protection from wind during waste treatment.

The entire surface of the concrete foundation pad and the inside edge of the concrete pad curb are lined with steel. Runoff water is directed toward the right front corner of the pad, through a filter, and into a covered catchment tank that is visible at the lower right corner of the photograph.

The burn pan lid is in the lowered position. The burn cage is surrounded by an earthen berm. The gate in the fence surrounding the TTU is open.



Thermal Treatment Unit
Rear View of Burn Cage from Top of Earthen Berm
Photograph Taken on October 23, 2003
Process Code: X01

The door of the burn cage is open on the left (front) side of the cage. The sheet metal housing for the propane burners is visible on the far side of the burn cage.



Steel beams

Burn pan lid

Burn pan

Thermal Treatment Unit
Front View of Burn Pan (with Lid Down) Inside Burn Cage
Photograph Taken on October 23, 2003
Process Code: X01

The base of the burn pan sits on the steel beams that run across in the front and back of the burn cage. The pan is 6 inches deep. The lid is lowered and covers the pan. During operation, the lid is raised using the attached cable, and hazardous wastes are placed inside the burn pan or liquid wastes are pumped into the pan. The liquid waste feed system is located on the right side of the cage and is not visible in this photograph. It is temporarily out of service.

The burn cage door is open. The steel sheets on the outside of the burn cage provide protection from wind during treatment. The sheet metal housing for the propane burners is visible to the left of the burn cage.

**Appendix A-3: Photographs of the Hazardous and Mixed Waste Management Areas at
the RMWMU**



Radioactive and Mixed Waste Management Unit, East Side of Building 6920

Photograph Taken on December 5, 2001

Process Codes: S01, T04



Radioactive and Mixed Waste Management Unit, West Side of Building 6920

Photograph Taken on December 5, 2001

Process Codes: S01, T04



Radioactive and Mixed Waste Management Unit, Building 6920, South Bay
Photograph Taken on December 20, 2001
Process Codes: S01, T04

The south bay is used for storage of hazardous and mixed wastes in containers and for treatment. The doors to three of the four rooms in the south bay are visible at the left edge of the picture. Treatment operations typically occur in these rooms. The roll-up door at the far (east) end of the room leads to an additional storage/work area. A secondary containment sump is shown on the right in the photograph.



Radioactive and Mixed Waste Management Unit, Building 6921

Photograph Taken on December 5, 2001

Process Codes: S01, T04



Radioactive and Mixed Waste Management Unit, Building 6925
Photograph Taken on December 5, 2001
Process Codes: S01, T04

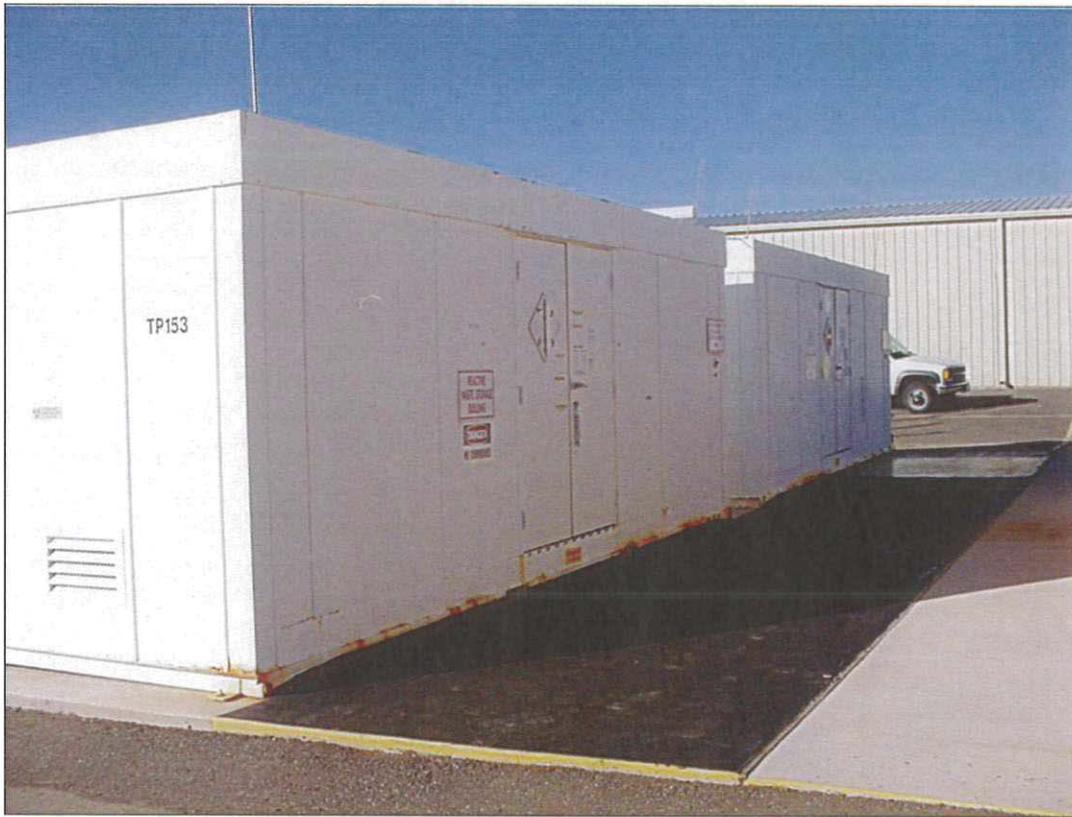


Radioactive and Mixed Waste Management Unit, Building 6925, Interior
Photograph Taken on December 20, 2001
Process Codes: S01, T04

The drum in the front of the row on the right contains liquid mixed waste and is stored on a portable spill containment pallet.



Radioactive and Mixed Waste Management Unit, Building 6926
Photograph Taken on December 5, 2001
Process Codes: S01



Radioactive and Mixed Waste Management Unit, Modular Storage Buildings

Photograph Taken on December 5, 2001

Process Code: S01



Auxiliary Hot Cell Unit, North Side of Building 6597
Photograph Taken on January 7, 2002
Process Codes: S01, T04

The work area and permanent shield wall are visible inside the building.

**Appendix A-4: Photographs of the Hazardous and Mixed Waste Management Areas at
the AHCU**

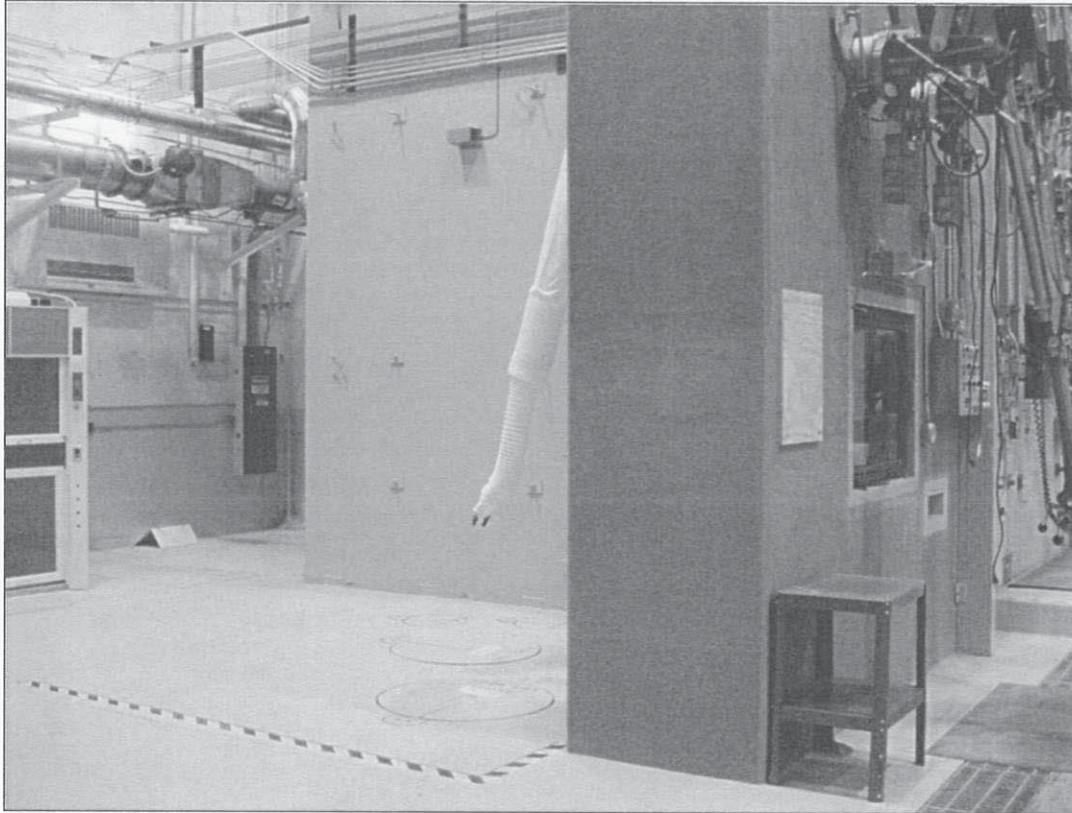


Auxiliary Hot Cell Unit, Work Area North of Auxiliary Hot Cell

Photograph Taken on January 7, 2002

Process Codes: S01, T04

The permanent shield wall is visible inside the building at the right edge of the opening. The manipulator arms extend from the permanent shield wall into the work area. The north wall of the hot cell is visible behind the manipulator arms at the center of the picture. The fume hood is visible at the left edge of the work area.

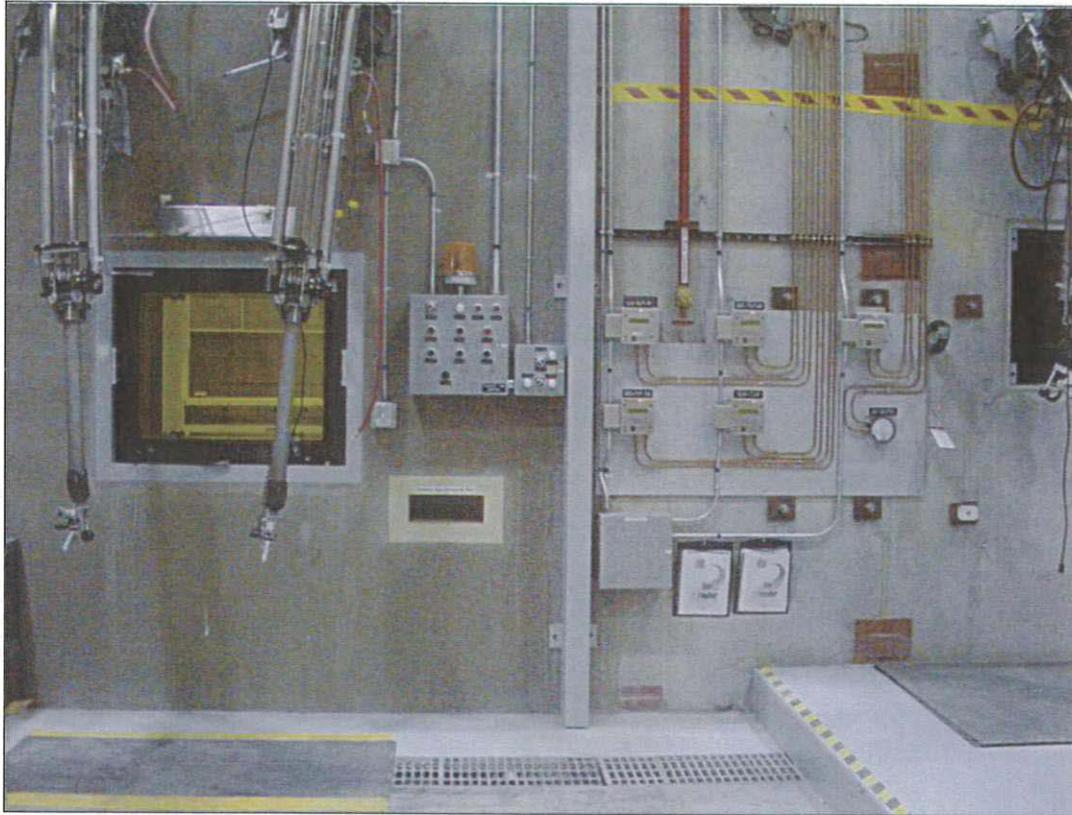


Auxiliary Hot Cell Unit, Fume Hood and Work Area North of Auxiliary Hot Cell

Photograph Taken on January 7, 2002

Process Codes: S01, T04

One of the manipulator arms is visible. It extends from the permanent shield wall into the work area. The operator controls for the manipulator arms are on the right side (outside) of the permanent shield wall at the right edge of the picture. The fume hood is visible at the left edge of the picture. Covers of two storage silos are visible on the floor of the work area under the manipulator arm.



Auxiliary Hot Cell Unit, Operator Controls for Work Area and Hot Cell

Photograph Taken on January 7, 2002

Process Codes: S01, T04

The permanent shield wall is on the left, and the hot cell is located on the right. The operator controls for the manipulator arms in the permanent shield wall are visible on the left. The fume hood at the back of the work area is visible through the shield wall window. Similar operator controls and a window are located on the hot cell wall to the right.

**Appendix A-5: Photographs of the Hazardous and Mixed Waste Management Areas at
the MSB**



Manzano Storage Bunkers, Type B, Front View of Bunker 37034
Photograph Taken on December 13, 2001
Process Code: S01

The drain shown near the right edge of the picture serves a drain tile on the outside of the bunker, allowing drainage of water (from precipitation) that may accumulate in the soil behind the concrete wall.

The large orange sign indicates that explosive (D003) waste is currently stored in this bunker. A fire extinguisher is located in the white box below and to the left of the orange sign.

The concrete pad in front of the bunker doors is level or slopes slightly away from the bunker, preventing surface water runoff into the bunker.



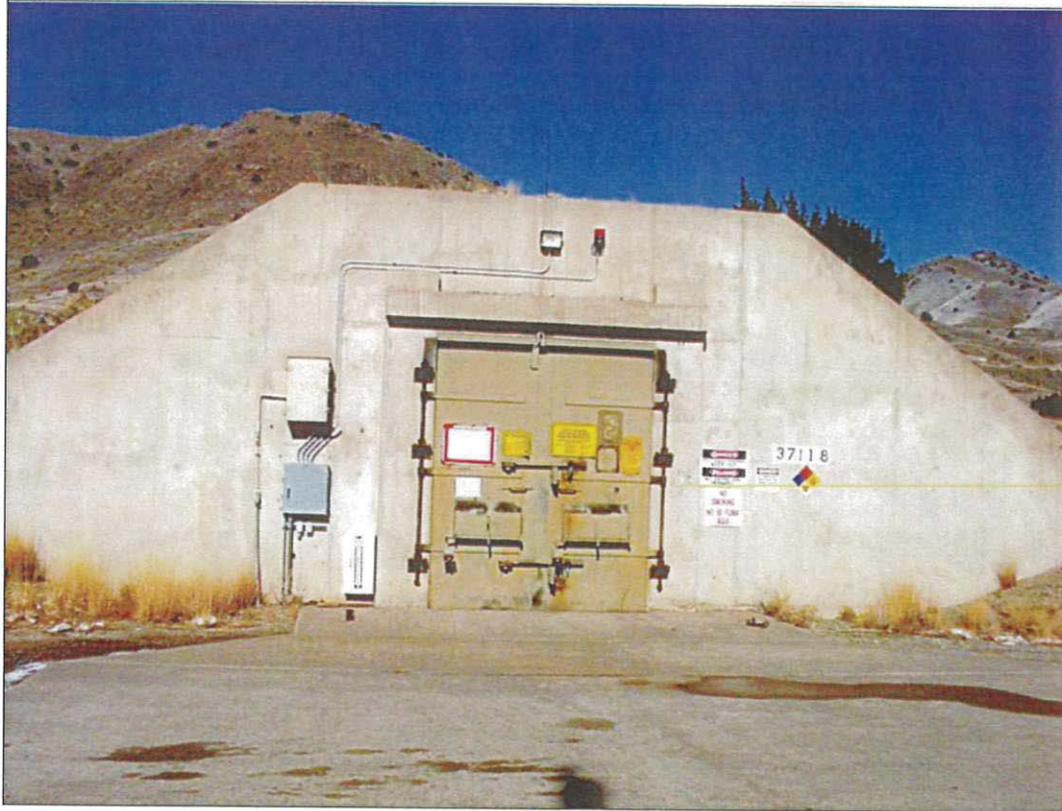
Manzano Storage Bunkers, Type D, Front View of Bunker 37045
Photograph Taken on December 13, 2001
Process Code: S01



Manzano Storage Bunkers, Type D, Front View of Bunker 37055
Photograph Taken on December 5, 2001
Process Code: S01



Manzano Storage Bunkers, Type D, Front View of Bunker 37057
Photograph Taken on December 5, 2001
Process Code: S01



Manzano Storage Bunkers, Type C, Front View of Bunker 37118
Photograph Taken on December 13, 2001
Process Code: S01