

1A-14

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**Tour
of
RCRA
OB/OD Sites
for
DX Division**

Dynamic Experimentation Division



3863

July 25, 1997

TV

TECHNICAL AREA (TA) 39

- **TA-39: Two Thermal Treatment Units**, included in the 1988 Part A permit application, are OD units near TA-39-6 and TA-39-57. These units may be used to treat hazardous explosive waste by OD.

2.1.4 TA-39 Hazardous Waste OD Thermal Treatment Units

TA-39 is located in the southern portion of LANL and includes much of the mesa between Water Canyon on the north and Ancho Canyon on the south (LANL, 1993d). Mesa-top elevations at TA-39 range from approximately 6,500 to 7,000 feet amsl. The area was established in 1959 for testing of explosive materials and has been used continuously for that purpose. TA-39 contains a number of structures located in the north fork of Ancho Canyon (LANL, 1993d). The remainder of TA-39 is unoccupied and serves as a buffer zone for open detonation operations.

The two OD thermal treatment units at TA-39 are associated with structures TA-39-6 and TA-39-57. The locations of these units are shown on Map 5 and Figures 5 and 6 of the OB/OD Part A. These units may be used to treat solid hazardous explosive waste by OD. Nontreatment-related, experimental test detonations are also performed at these locations.

4.4 HAZARDOUS WASTE OD THERMAL TREATMENT UNITS AT TA-39 [20 NMAC 4.1, Subpart IX, 270.23; 20 NMAC 4.1, Subpart V, Part 264, Subpart X; and 20 NMAC 4.1, Subpart VI, Part 265, Subpart P]

This section provides a description of the hazardous waste OD thermal treatment units associated with structures TA-39-6 and TA-39-57 at TA-39. The description includes the location, the physical parameters, the materials of construction, and the maximum treatment capacities of the thermal treatment units. A discussion of waste management practices, including those related to waste packaging and handling, is presented in Section 4.5.

The OD thermal treatment units at TA-39 are associated with TA-39-6 and TA-39-57 (Figures 4-4 and 4-5). Each of the areas is a relatively flat sand-covered area, measuring approximately 40- by 40-feet, and is located in the canyon bottom. Steep canyon walls rise to heights of 100 feet or more in the immediate vicinity of each OD area, roughly forming a semicircle around each area. The canyon walls serve to attenuate the force of the blasts. The associated control buildings (i.e., TA-39-6 and TA-39-57) are reinforced concrete structures extending partially beneath the detonation areas.

The maximum treatment capacity at each of the TA-39 OD units is 1,000 pounds.

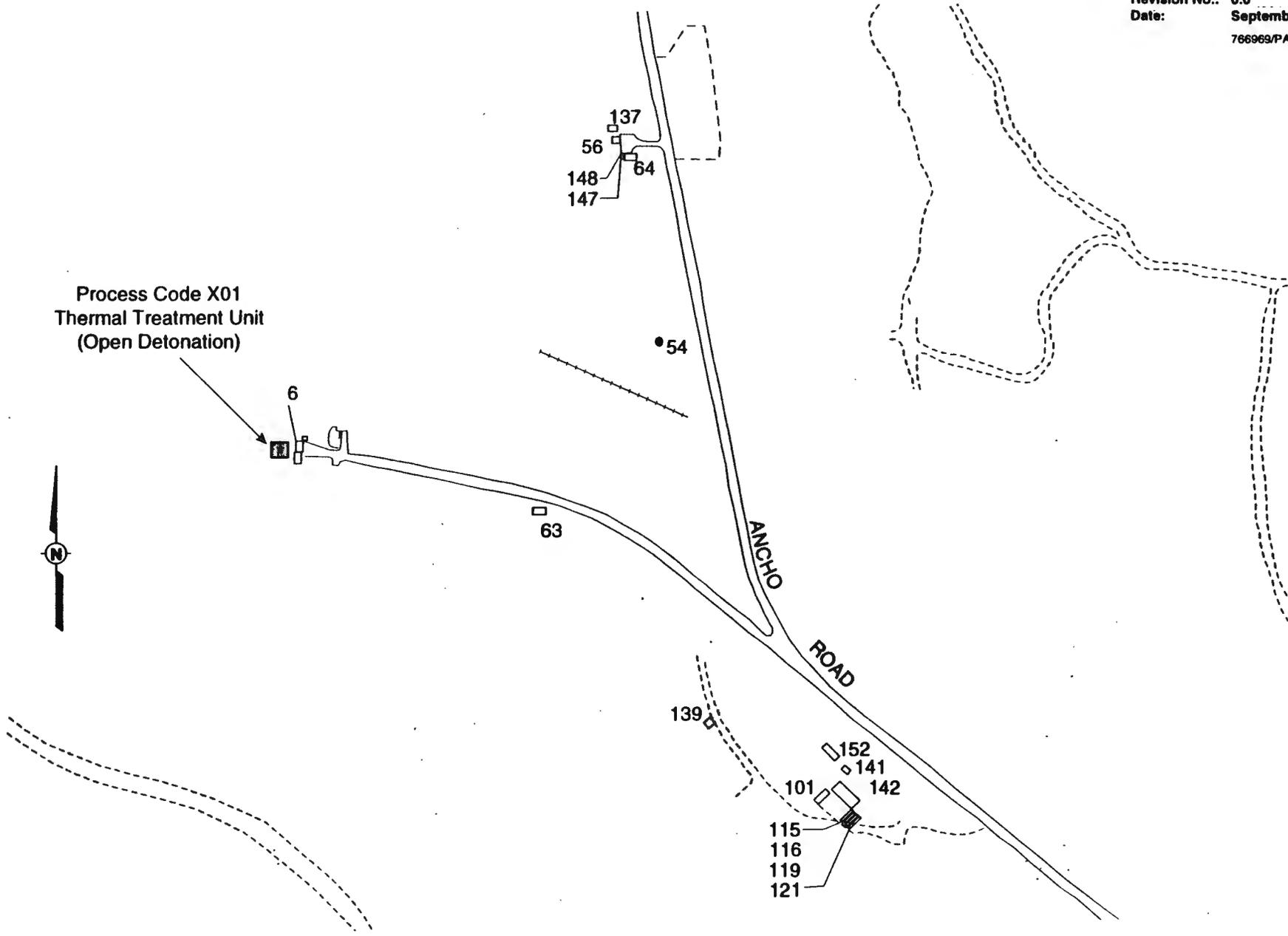


Figure 5
Location Map Showing the Thermal Treatment Unit near Technical Area 39, Building 6



TA-39-6. Process Code X01. Thermal Treatment Unit
(open detonation)

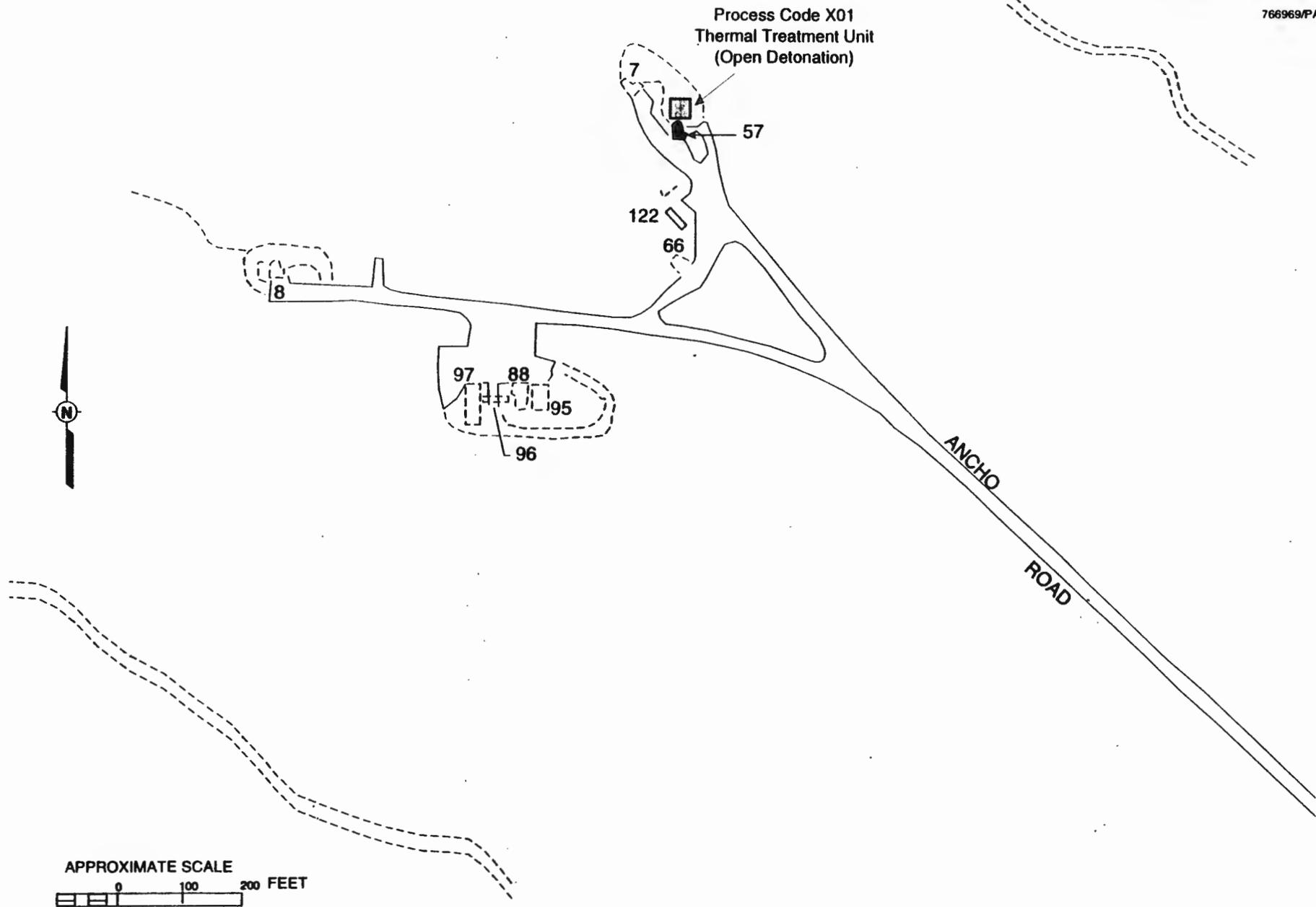


Figure 6
Location Map Showing the Thermal Treatment Unit near Technical Area 39, Building 57



TA-39-57. Process Code X01. Thermal Treatment Unit
(open detonation)

TECHNICAL AREA (TA) 15

- **TA-15: A Thermal Treatment Unit**, included in LANL's RCRA Part A permit application for hazardous waste and in LANL's original RCRA Part A permit application for mixed waste, is an OD unit near TA-15-184. This unit may be used to treat hazardous and/or low-level mixed explosive waste by OD. (Definitions of *low-level mixed waste* and *explosive* are provided in Section 3.0 of this permit application.)

2.1.2 TA-15 Hazardous and/or Low-Level Mixed Waste OD Thermal Treatment Unit

TA-15 is located on a mesa that is bifurcated by Potrillo Canyon. Mesa-top elevations at TA-15 range from approximately 6,800 to 7,280 feet amsl. TA-15 is primarily a firing site with supporting offices where research is conducted with various types of explosives (LANL, 1993b).

The OD thermal treatment unit, located near TA-15-184 at the eastern end of TA-15, extends approximately 150 feet to the northeast and southeast of TA-15-184, as shown on Map 3 and Figure 3 of the OB/OD Part A. Solid and liquid hazardous and/or low-level mixed explosive waste may be treated (i.e., open detonated) at this unit. Nontreatment-related experimental test detonations (i.e., shots) are also currently performed at this location.

4.2 HAZARDOUS AND/OR LOW-LEVEL MIXED WASTE OD THERMAL TREATMENT UNIT NEAR TA-15-184 [20 NMAC 4.1, Subpart IX, 270.23; 20 NMAC 4.1, Subpart V, Part 264, Subpart X; and 20 NMAC 4.1, Subpart VI, Part 265, Subpart P]

This section provides a unit description and an overview of the waste management practices for the hazardous and/or low-level mixed waste OD thermal treatment unit located near TA-15-184. The description includes the location, the physical parameters, the materials of construction, and the maximum treatment capacity of the OD thermal treatment unit. A discussion of waste management practices, including those related to waste packaging and handling, is presented in Section 4.5.

The OD thermal treatment unit at TA-15 is located near TA-15-184 and may be used to open detonate solid and liquid hazardous and/or low-level mixed explosive waste. As shown on Figure 4-2, the unit extends approximately 150 feet from the northeast to the southeast of TA-15-184. The area, which covers approximately 17,663 square feet, is generally flat and sand-covered and slopes gently to the southwest. Two steel plates that measure 0.5 foot thick, 5 feet wide, and 20 feet long are located on the ground adjacent to TA-15-184. The plates are laid lengthwise end-to-end with one end against the building. Various small housings for cameras and instrumentation are located at the site. Sand bags are used to protect TA-15-184 and the small housings from the impact of detonations.

The OD thermal treatment unit may be used to treat a maximum of 500 pounds of explosive waste per detonation. The unit is currently used for nontreatment-related experimental test detonations (i.e., shots); however, waste treatment has not yet been conducted.

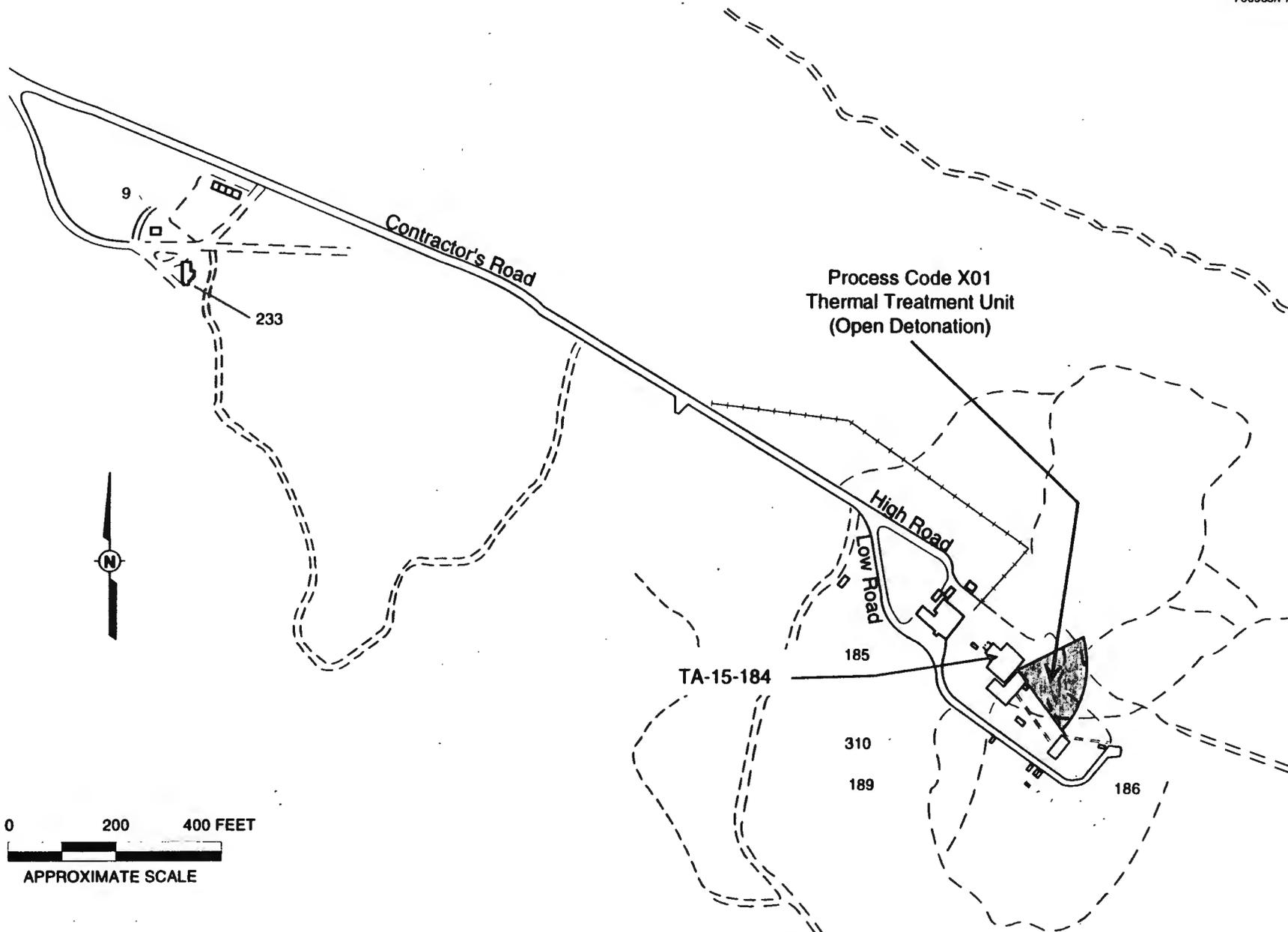


Figure 3

Location Map Showing the Thermal Treatment Unit near Technical Area (TA) 15, Building 184



TA-15-184, Process Code X01, Thermal Treatment Unit
(open detonation)



TA-15-184. Process Code X01. Thermal Treatment Unit
(open detonation)
(View is looking southeast away from TA-15-184)

TECHNICAL AREA (TA) 36

- **TA-36: A Thermal Treatment Unit**, included in LANL's RCRA Part A permit application for hazardous waste and in LANL's original RCRA Part A permit application for mixed waste, is an OD unit near TA-36-8. This unit may be used to treat hazardous and/or low-level mixed explosive waste by OD.

2.1.3 TA-36 Hazardous and/or Low-Level Mixed Waste OD Thermal Treatment Unit

TA-36 is spread over several mesa tops between a branch of Pajarito Canyon to the north and Water Canyon to the south. Mesa-top elevations at TA-36 range from approximately 6,380 to

7,120 feet amsl. TA-36 contains several other firing sites and supporting offices where research is conducted with various types of explosives (LANL, 1993c).

The OD thermal treatment unit near TA-36-8 is located in the southern portion of TA-36. The unit includes an irregularly shaped area near TA-36-8, as shown on Map 4 and Figure 4 of the OB/OD Part A. Solid and liquid hazardous and/or low-level mixed explosive waste may be treated (i.e., open detonated) at the unit. Nontreatment-related experimental test detonations (i.e., shots) are also currently performed at this location.

4.3 HAZARDOUS AND/OR LOW-LEVEL MIXED WASTE OD THERMAL TREATMENT UNIT NEAR TA-36-8 [20 NMAC 4.1, Subpart IX, 270.23; 20 NMAC 4.1, Subpart V, Part 264, Subpart X; and 20 NMAC 4.1, Subpart VI, Part 265, Subpart P]

A description of the hazardous and/or low-level mixed waste OD thermal treatment unit located near TA-36-8 is provided below. The description includes the location, the physical parameters, and the maximum treatment capacity of the OD thermal treatment unit. A discussion of waste management practices, including those related to waste packaging and handling, is presented in Section 4.5.

The OD thermal treatment unit located near TA-36-8 may be used to treat solid and liquid hazardous and low-level mixed explosive waste. The OD thermal treatment unit is an irregularly-shaped, sand- and grass-covered area that measures approximately 550 feet east to west and 300 feet north to south, as shown on Figure 4-3. The area is relatively flat.

The OD thermal treatment unit has a maximum treatment capacity of 2,000 pounds of explosive waste per detonation. The unit is used primarily for nontreatment-related experimental test detonations and may occasionally be used for treatment of hazardous and/or low-level mixed explosive waste.

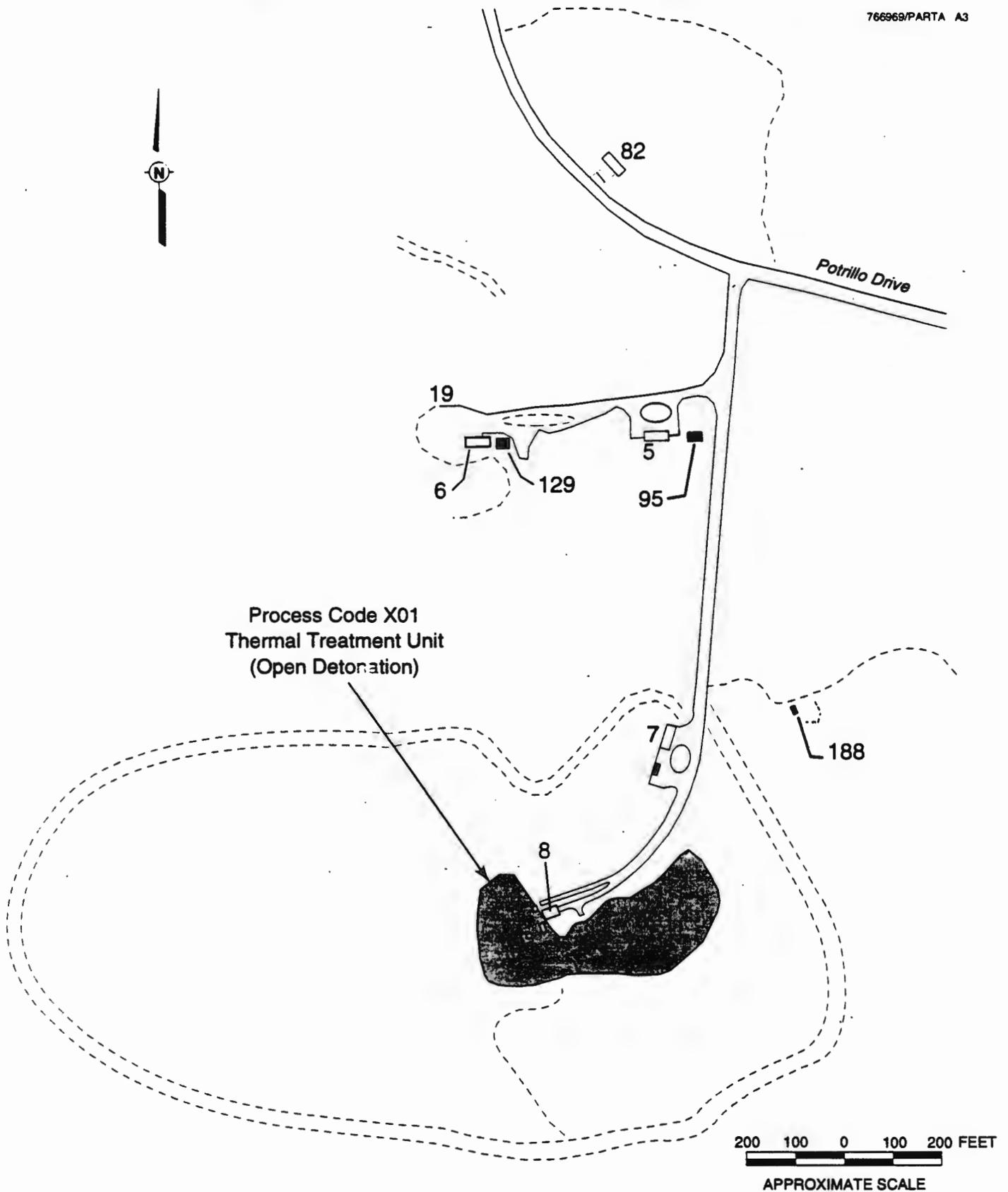


Figure 4
Location Map Showing the Thermal Treatment Unit near Technical Area 36, Building 8



TA-36-8. Process Code X01, Thermal Treatment Unit
(open detonation)
(View is looking northeast toward TA-36-8)



TA-36-8, Process Code X01, Thermal Treatment Unit
(open detonation)
(View is looking west to bunker)

TECHNICAL AREA (TA) 14

- **TA-14: Two Thermal Treatment Units**, included in LANL's Resource Conservation and Recovery Act (RCRA) Part A permit application for hazardous waste, comprise an OB unit and an OD unit near TA-14, Building 23 (TA-14-23). These units may be used to treat

hazardous explosive waste by OB and OD, respectively. (A definition of *hazardous waste* is provided in Section 3.0 of this unit-specific Part B permit application.)

2.1.1 TA-14 Hazardous Waste OB/OD Thermal Treatment Units

TA-14 is located in the western portion of LANL on the southern edge of Three-Mile Mesa. Mesatop elevations at TA-14 range from approximately 7,350 to 7,450 feet above mean sea level (amsl). TA-14 was established in 1944 to study small-explosive charges, and since that time has been actively used for the development and testing of explosives (LANL, 1994b). Structures at the site include explosives magazines, a control building, and equipment boxes.

The OB/OD thermal treatment units at TA-14 are located in the vicinity of structure TA-14-23; this area is referred to as Q-Site East. The locations of these units are shown on Map 2 and Figure 2 of the OB/OD Part A. OB operations are conducted in a wire mesh burn cage located adjacent to Firing Mound 3. Hazardous explosive waste treated (i.e., open burned) in the burn cage includes explosives-contaminated materials. The OD treatment area is located approximately 180 feet south of TA-14-23 on Firing Mound 3 and is used to treat (i.e., open detonate) hazardous explosive waste. Mixed waste is not treated at either of these units. Nontreatment-related, experimental test detonations are also performed at TA-14, Q-Site East.

4.1 HAZARDOUS WASTE OB/OD THERMAL TREATMENT UNITS NEAR TA-14, BUILDING 23 (TA-14-23) [20 NMAC 4.1, Subpart IX, 270.23; 20 NMAC 4.1, Subpart V, Part 264, Subpart X; and 20 NMAC 4.1, Subpart VI, Part 265, Subpart P]

This section provides unit descriptions and an overview of the waste management practices for the hazardous waste OB/OD thermal treatment units located near TA-14-23 at Los Alamos National Laboratory (LANL). The OB/OD thermal treatment units at TA-14 include a burn cage for OB of explosives-contaminated items such as paper, tape, debris, and soil, and an OD area for treatment of waste explosives. The OD thermal treatment unit is also used for nontreatment-related experimental test detonations (i.e., shots). The descriptions include the location, the physical parameters, the materials of construction, and the maximum treatment capacity of the OB/OD thermal treatment units. A discussion of waste management practices, including those related to waste packaging and handling, is presented in Section 4.5.

The two thermal treatment units at TA-14 are located approximately 180 feet south of structure TA-14-23 (the control building); this area is also known as Q-Site East. OB treatment operations are carried out in a burn cage located in the eastern portion of Firing Mound 3, adjacent to the OD area. The burn cage is constructed of a semicircular piece of 0.25-inch-thick steel approximately 2 feet wide. The unit has a wire mesh door and a wire mesh top and bottom. The burn cage, which measures approximately 3 feet high and 2 feet in diameter, sits in a steel tray with two-inch raised edges. The burn cage and steel tray rest on bare soil. OB operations are monitored from the control building (TA-14-23).

The OD area, referred to as Firing Mound 3, is a gently sloping, sand-covered area measuring approximately 40- by 75-feet. Following waste placement at Firing Mound 3, detonation operations are conducted from the control building. The locations of the thermal treatment units at TA-14 are shown on Figure 4-1.

A maximum of 50 pounds of explosives-contaminated materials may be burned per treatment at the OB unit. A maximum of 20 pounds of waste explosives may be detonated per treatment at the OD thermal treatment unit.

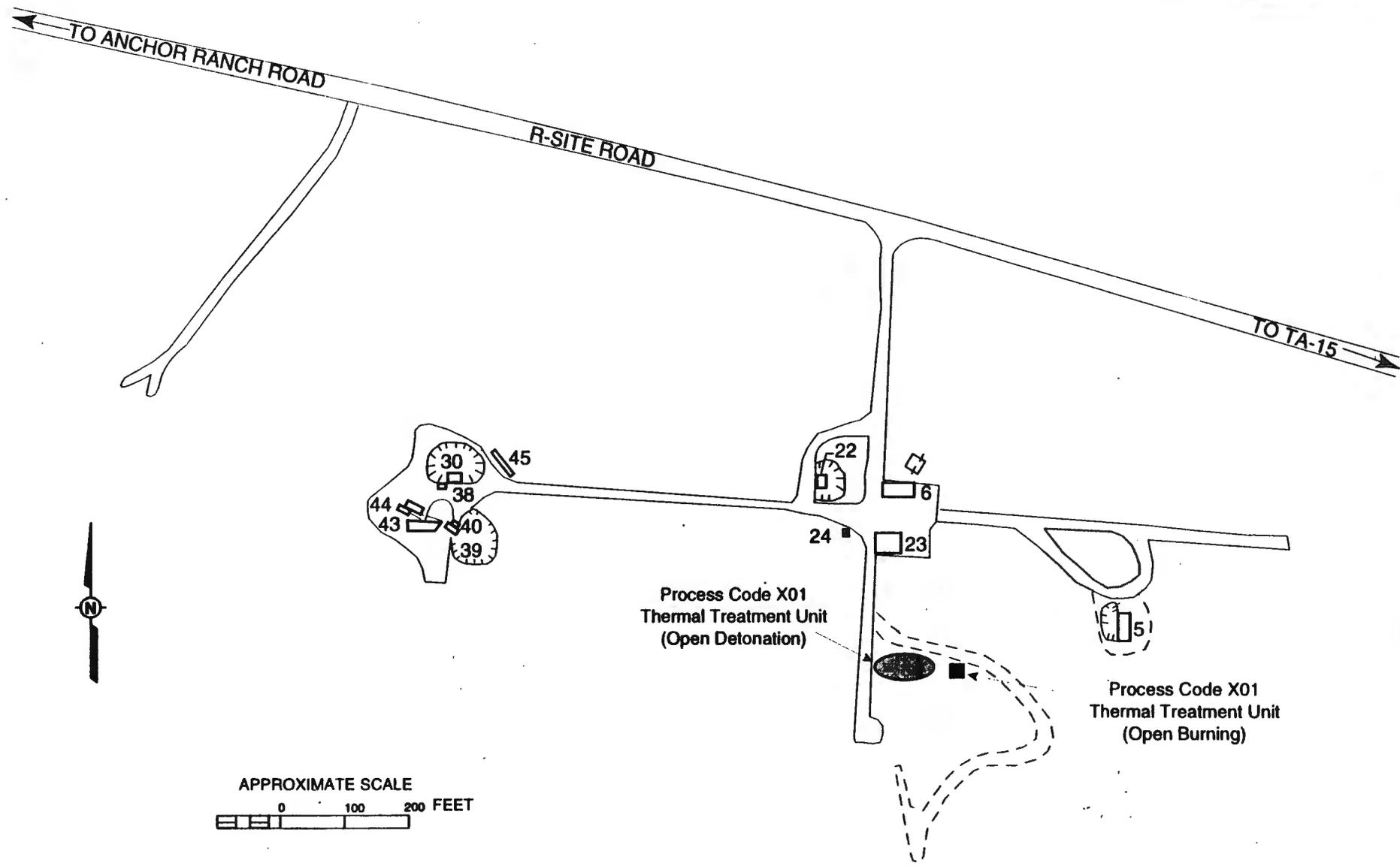
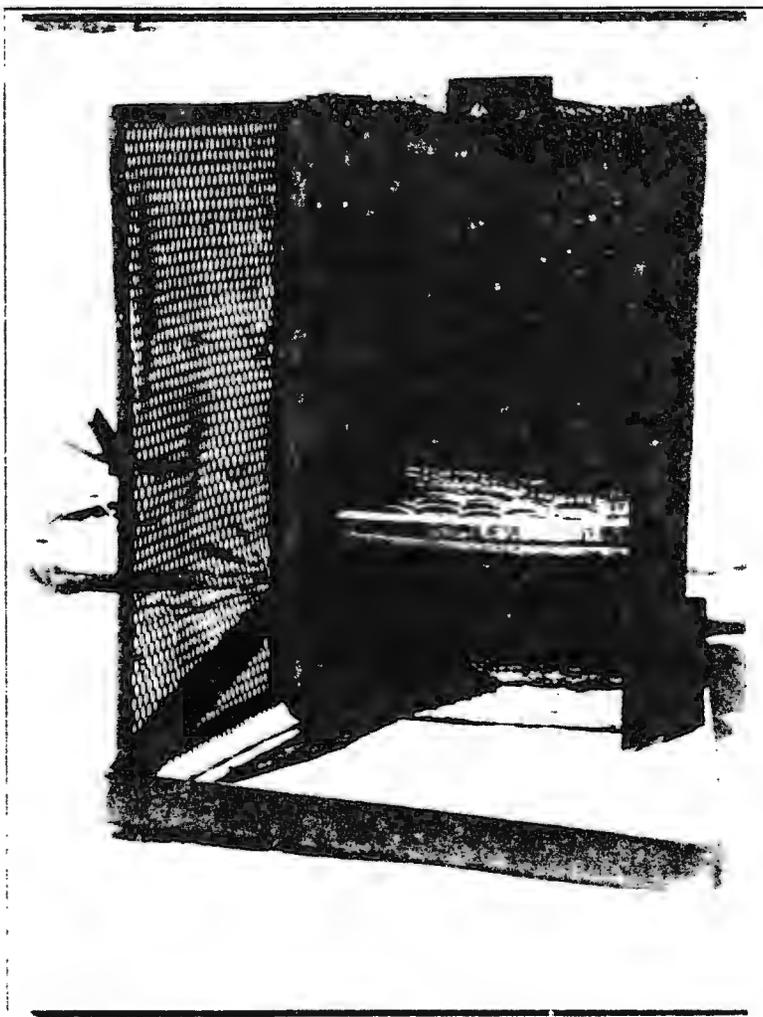


Figure 2
Location Map Showing the Thermal Treatment Units near Technical Area (TA) 14, Building 23



TA-14-23. Process Code X01. Thermal Treatment Unit
open burning



TA-14-23. Process Code X01. Thermal Treatment Unit
(open detonation)