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Security on the Move: An Eligibility Assessment of the Manhattan Project National Historical Park's Portable Guard Shack (TA-8-172)

Los Alamos National Laboratory

Historic Building Survey Report No. 344

Survey No. 1191

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EXECUTIVE SUMMARY

The U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office (Field Office) proposes to assess, stabilize, and eventually restore a Manhattan Project-era guard shack to its original wartime condition. TA-8-172, a portable building, is a Manhattan Project National Historical Park property located in Technical Area (TA) 8 at Los Alamos National Laboratory (LANL).

In compliance with Section 106 and Section 110 of the National Historic Preservation Act of 1966, as amended, LANL's cultural resources staff completed the evaluation of Building TA-8-172 for inclusion in the National Register of Historic Places (Register). A LANL historic building inventory form for the guard shack is included in Appendix A. The Field Office has determined that Building TA-8-172 is Register-eligible under Criteria A, B and C based on the findings in this assessment report.

The Field Office is requesting concurrence from the State Historic Preservation Officer for TA-8-172. The guard station will undergo a full condition assessment, and rehabilitation and repairs. These undertakings will receive future documentation and consultation.

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INTRODUCTION

Manhattan Project National Historical Park

The National Park Service, as part of the U.S. Department of the Interior and in collaboration with the U.S. Department of Energy, was directed by Congress in 2004 under Public Law 108-340 to consider several Manhattan Project sites for possible inclusion as a unit in the national park system. In response, the National Park Service completed the *Manhattan Project Sites, Special Resource Study/Environmental Assessment, Finding of No Significant Impact* in September 2010 (NPS 2010). The Department of the Interior, with the Department of Energy's concurrence, submitted a letter to Congress in July of 2011 recommending the establishment of a Manhattan Project National Historical Park with eligible sites in Oak Ridge, Tennessee; Los Alamos, New Mexico; and Hanford, Washington. The Secretary of the Interior recommended that the park be managed as a partnership between the National Park Service and the U.S. Department of Energy.

The 2015 National Defense Authorization Act, signed into law by President Obama on December 19, 2014, instructed the U.S. Department of Energy and the U.S. Department of the Interior, through the National Park Service, to work together to establish a new national historical park to preserve the historic resources of the Manhattan Project and to improve public understanding of the Manhattan Project's history and legacy. Los Alamos park properties listed in the legislation include historic buildings in downtown Los Alamos and 17 Los Alamos National Laboratory (LANL or the Laboratory) properties located at eight technical areas.

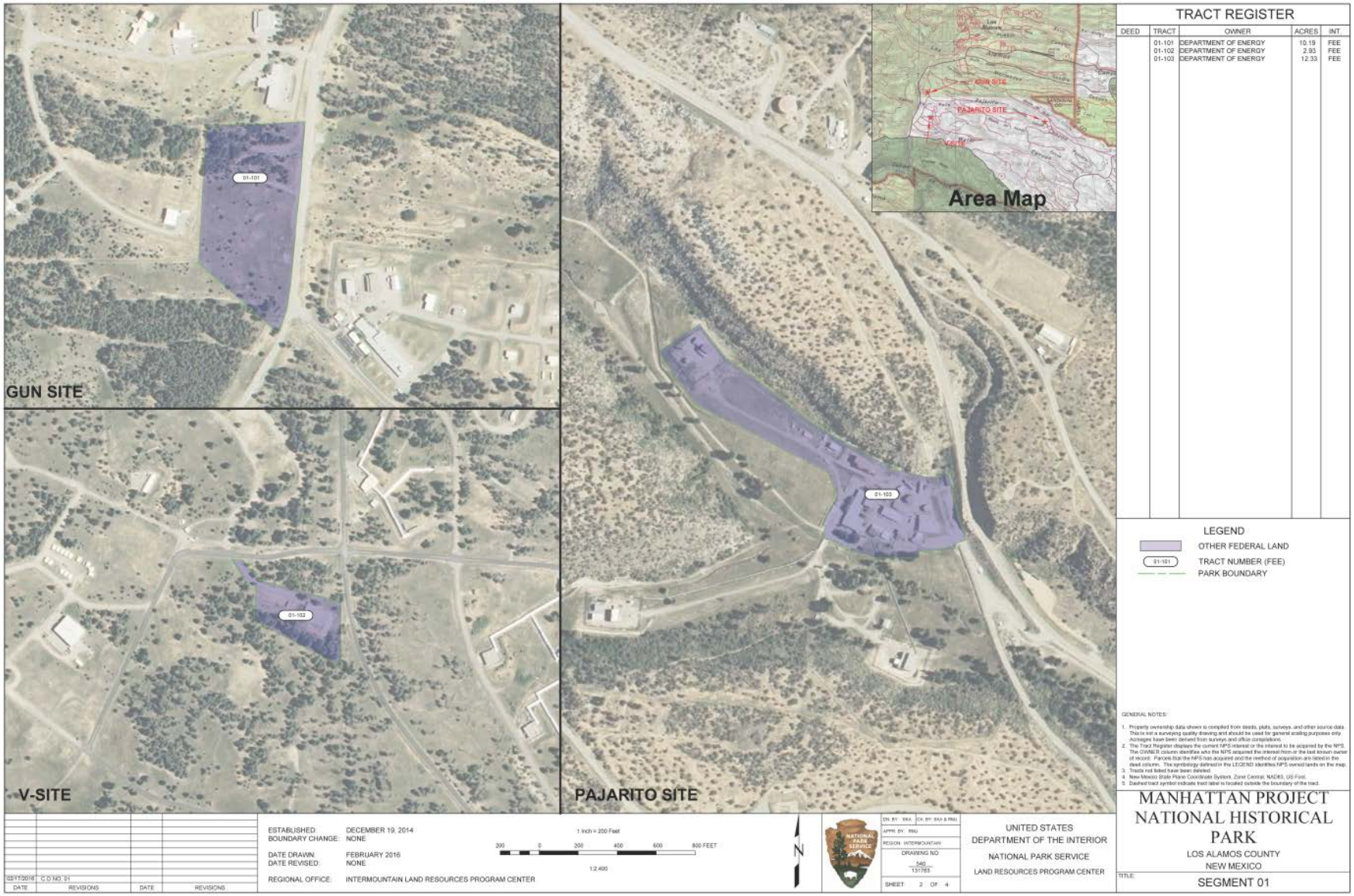
A memorandum of agreement signed by the National Park Service and the Department of Energy established the Manhattan Project National Historical Park in November of 2015.

TA-8-172 Phased Condition Assessment and Repair Project

The U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office proposes to assess, stabilize, and restore a Manhattan Project-era portable guard shack, Technical Area (TA) 8 Building 172 (TA-8-172), because it is a contributing property to the Manhattan Project National Historical Park at LANL. The first phase of the project will involve a detailed condition assessment. This will be accomplished by first moving the guard shack to Bandelier National Monument, New Mexico, where National Park Service restoration specialists will examine the building and prepare a report outlining stabilization needs, restoration, and treatment recommendations.

Historic Property Eligibility Assessment

In compliance with Section 110 of the National Historic Preservation Act of 1966, as amended, this report contains documentation regarding the National Register of Historic Places (Register) eligibility status of TA-8-172. The building is a park property located within the Manhattan Project National Historical Park boundary at TA-8. However, the property was not included in a 2003 report that assessed the other LANL wartime properties listed in the park legislation (Map 1) (McGehee et al. 2003).x



Map 1: Manhattan Project National Historical Park boundaries at LANL

Survey Methods

The initial survey of the building was conducted by Kenneth Towery and Michael Bodelson, Architects, LANL Infrastructure Planning Group, in 2011. Follow-up documentation and historical research was carried out in 2015 and 2016 by Kristen Honig, LANL Infrastructure Planning Group, and Jeremy Brunette, Kari Garcia, and Ellen McGehee, LANL Environmental Stewardship Group. The building surveys included field visits to the guard shack location at TA-8 (Maps 2 and 3). Architectural and engineering elements of the properties were documented and photographs were taken. Records research was also conducted at LANL and at the Los Alamos Historical Museum archives.

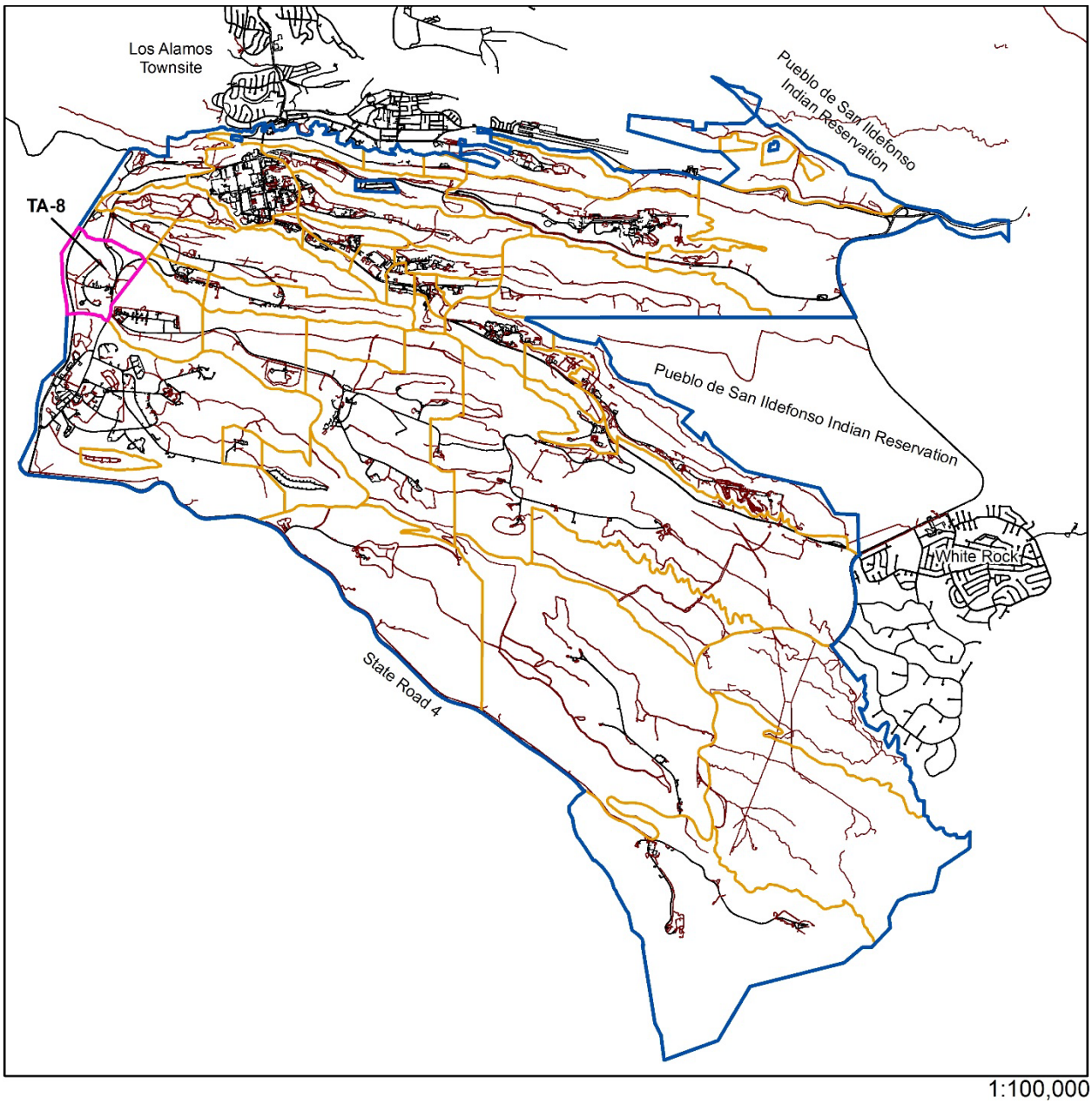
HISTORICAL OVERVIEW

Manhattan Project (1942–1946)

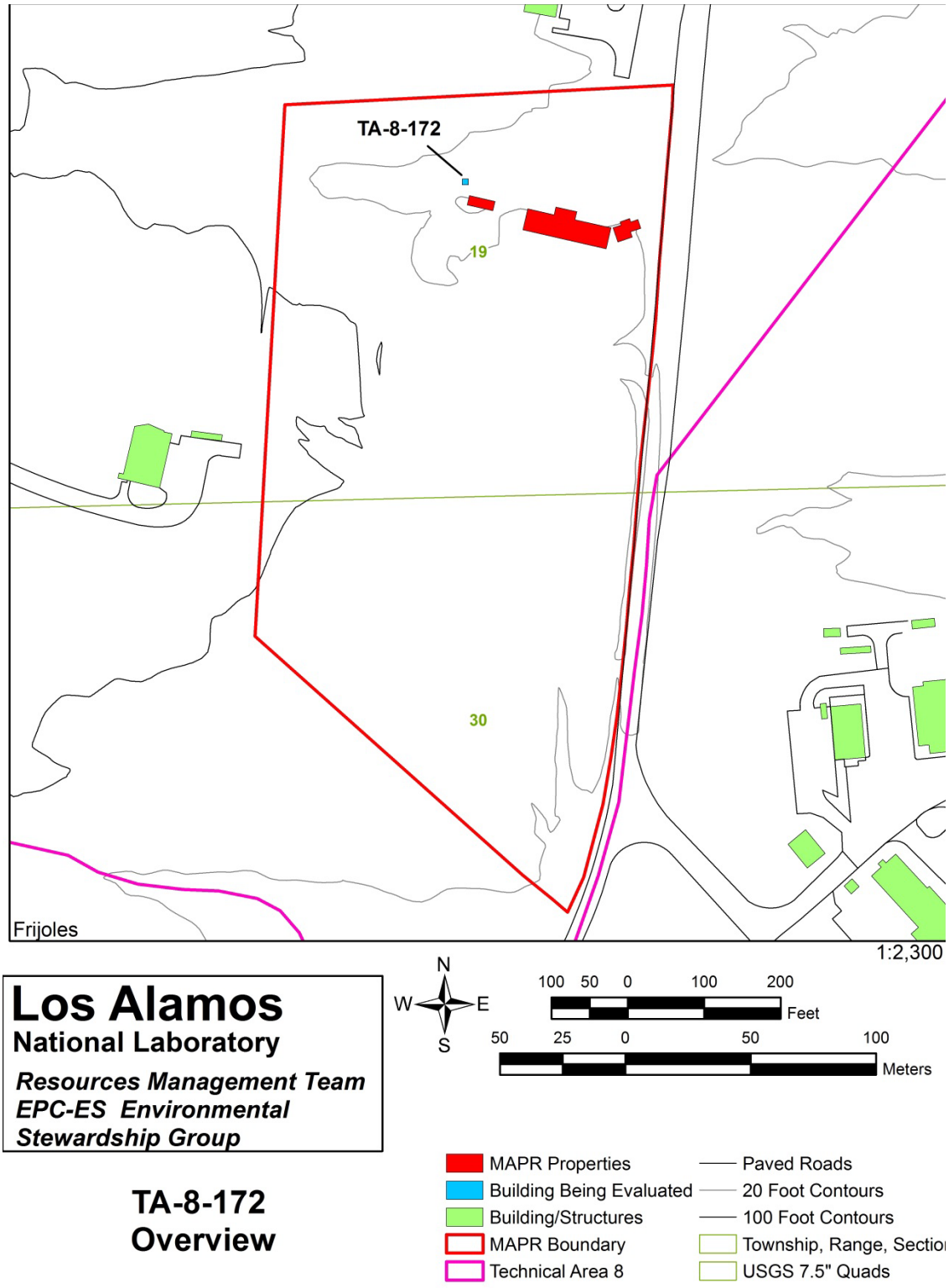
In 1939, Albert Einstein wrote a letter to President Franklin Roosevelt warning him of a possible German atomic bomb threat (Rothman 1992). President Roosevelt, acting on Einstein's concerns, gave approval to develop the world's first atomic bomb and appointed Brigadier General Leslie Groves to head the Manhattan Project. Groves, in turn, chose Robert Oppenheimer to coordinate the design of the bomb.

A single isolated and secret research facility was proposed. General Groves had several criteria: security, isolation, a good water supply, an adequate transportation network, a suitable climate, an available labor force, and a locale west of the Mississippi located "at least 200 miles from any international border or the West Coast" (Rothman 1992). In 1942, Oppenheimer, who had visited the Pajarito Plateau on a horseback trip, suggested the Los Alamos Ranch School. Oppenheimer and his staff moved to Los Alamos in early 1943 to begin work. The recruitment of the country's "best scientific talent" and the construction of technical buildings were top priorities (LANL 1995:8). The University of California agreed to operate the site, code name "Project Y," under contract with the government. Although the fission bomb was conceptually attainable, many difficulties stood in the way of producing a usable weapon. Technical problems included timing the release of energy from fissionable material and overcoming engineering challenges related to producing a deliverable weapon. Nuclear material and high explosive studies were of immediate importance (LANL 1995).

Two bomb designs appeared to be the most promising: a uranium "gun" device and a plutonium "implosion" device. The gun device involved shooting one subcritical mass of uranium-235 into another at sufficient speed to avoid pre-detonation. Together, the two subcritical masses would form a supercritical mass, which would release a tremendous amount of nuclear energy (Hoddeson *et al.* 1998). This method led to the development of the "Little Boy" device. Because it was conceptually simple, Little Boy was never tested before its use at Hiroshima. Scientists were less confident about the implosion design, which used shaped high explosives to compress a subcritical mass of plutonium-239. The symmetrical compression would increase the density of the fissionable material and cause a critical reaction.



Map 2. LANL boundary and TA-8



Map 3: Manhattan Project National Historical Park boundary and TA-8-172 at TA-8

In 1944, the uncertainties surrounding the plutonium device necessitated a search for an appropriate test site for the implosion design, later used in the "Fat Man" device. Manhattan Project personnel chose the Alamogordo Bombing Range in south-central New Mexico for the location of the test. A trial run involving 100 tons of trinitrotoluene (TNT) was conducted at the test site (Trinity Site) on May 7, 1945. This dress rehearsal provided measurement data and simulated the dispersal of radioactive products (LANL 1995). The Trinity test was planned for July and its objectives were "to characterize the nature of the implosion, measure the release of nuclear energy, and assess the damage" (LANL 1995:11). The world's first atomic device was successfully detonated in the early morning of July 16, 1945. Little Boy, the untested uranium gun device, was exploded over the Japanese city of Hiroshima on August 6, 1945. On August 9, 1945, Fat Man was exploded over Nagasaki, essentially ending the war with Japan.

PROPERTY-SPECIFIC HISTORICAL CONTEXT

Guard Shacks and Wartime Security at Los Alamos

Manhattan Project Security Practices

The Laboratory opened its wartime Security and Pass Office, located within the main technical area (TA-1), in April of 1943 (Figure 1). Security functions included safeguarding classified information and investigating new employees. The World War II-era Security Office supplied guards for classified shipments, couriers for documents, and guards for convoys. The Security Office was also responsible for incoming shipments and made the arrangements for meeting these shipments as well as safeguarding and delivering them. In order to safeguard classified information, the Security Office issued document classification and handling instructions. The issuing of security clearances, also arranged by this office, was often a lengthy process. This background investigation, however, was a requirement for assignment or employment at Los Alamos for both military and civilian personnel (Truslow 1991).

Figure 1. Security and Pass Office located in the main technical area (TA-1), circa 1950
Photo courtesy of the Los Alamos Historical Society

Special nuclear materials and the associated technical and scientific operations were under the direct oversight of the Security Office. Due to the expense and military importance of these special materials, they were placed under continuous armed surveillance by a dedicated detail of military and civilian guards. Other areas of responsibility included the guard system, visitor control, and the pass system. Physical components of the guard system included main guard posts placed at key entrances to Los Alamos and at entrances to TA-1 (Figures 2 and 3). Other guard facilities were also established at outlying technical areas (Truslow 1991).

Figure 2. Los Alamos main gate

Figure 3. Los Alamos main gate, 1940s

The early Los Alamos townsite was a fenced community that resembled a military post. The main technical area, which started actual operations in early 1943, was fenced and separated from the rest of town and only specially badged workers were allowed inside the guarded laboratory area (Figure 4) (Hawkins 1983). Similarly, the outlying technical sites south of TA-1 required specific access passes.

Figure 4. Security check point, TA-1

Wartime Guard Shacks

Guard posts were scattered across the Los Alamos landscape and placed where additional checkpoints were needed. They were built on skids and did not have permanent utilities. The shacks were small (typically no more than 6-feet wide and about 9-feet high), had heating stoves, and were often connected to nearby phone and electrical lines (Figures 5 and 6). Some guard posts were located on wooden towers to provide a better vantage point (Figure 7). Guard shacks were often moved from site to site depending on the changing security priorities of the wartime laboratory (LANL n.d.).

Figure 5. Guard shack in use as public telephone building, Los Alamos townsite.
Note the mounted skids below the doorway designed for ease of transportation. The stovepipe penetration is located in the left rear of the structure.

Figure 6. TA-1 with security fence.
Guard shack is located in center right of photo.

Figure 7. Guard shack on wooden tower at TA-1

During the Manhattan Project, guard shacks were moved over a wide geographic area. For example, two guard shacks located at TA-18 (Pajarito Site) were previously located many miles away. Guard shack TA-18-111 was moved from TA-27. Guard shack TA-18-112 was previously located at TAs 16 and 15. Elsewhere at the Laboratory, guard shack TA-16-160 was moved from TA-16 to TA-33 and then back to another location in TA-16. Guard shack TA-4-9, originally located at TA-4, was moved to TA-0 and then to TA-16. Guard towers were moved as well. A guard tower originally located at TA-1 was moved to TA-18.

The portable aspect of guard posts suited the Laboratory's changing needs during the Manhattan Project and early Cold War years. When they were no longer needed, some of the guard shacks were sold at public auction. For example, a guard shack originally sited at the Main Gate area and designated Post 18/Station 104 was moved in 1948 to TA-20 in Sandia Canyon and given the designation TA-20-20. In 1956, the building was removed for eventual sale to the public (Figure 8). A photograph taken in 2003 shows the same guard shack at a residence in the Española valley, where it had been used for years as part of a horse stable (Figure 9).

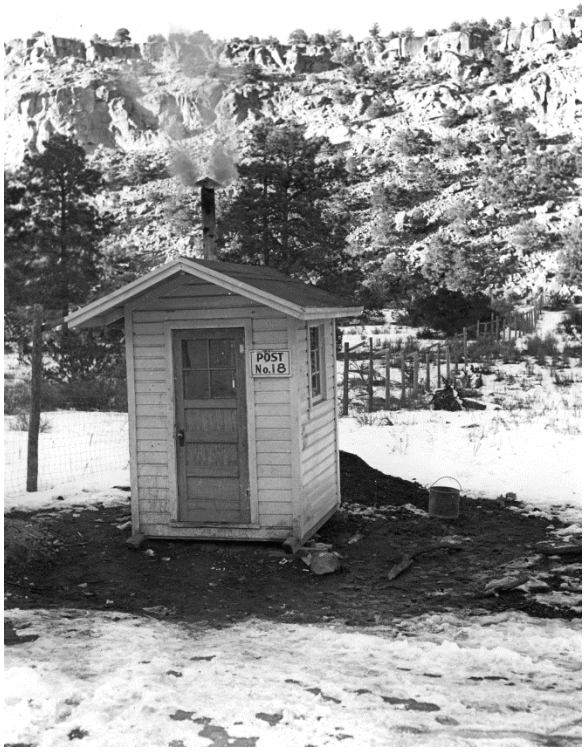


Figure 8. Post 18 at Sandia Canyon Site (TA-20), 1948

Figure 9. Post 18/Station 104 in 2003

The Use History of Guard Shack TA-8-172: Locations, Functions, and Moves

TA-19, East Gate Laboratory

In 1943, a group of Los Alamos scientists under the direction of Emilio Segrè established a small laboratory in Pajarito Canyon to study the chemical properties of the new man-made element plutonium (Figures 10 and 11). The work conducted at Pajarito Site by Segrè's Radioactivity Group led to the abandonment of the plutonium gun-type design in July 1944 (MED 1946:VI-8, VI-9). Soon after, as the development of the plutonium implosion weapon drove the need for new testing areas, firing sites were built at Pajarito Site to study high-explosives shots using the magnetic method.

Figure 10. Emilio Segrè's Radioactivity Group

Figure 11. Radiography Group facilities at Pajarito Site, circa 1943

By the fall of 1944, Segrè's group had moved to the East Gate Laboratory site located away from the hustle and bustle of Pajarito Canyon, which now had a new mission related to the development of the implosion weapon (Figure 12). According to the official Project Y history produced shortly after the end of the war, the move was a beneficial one for the Radioactivity Group: "This change had the advantage of a much shorter commuting distance, and also of avoiding close contact with new high explosive firing sites, as the test area of the implosion program expanded toward Pajarito Canyon" (MED 1946:XII-3).

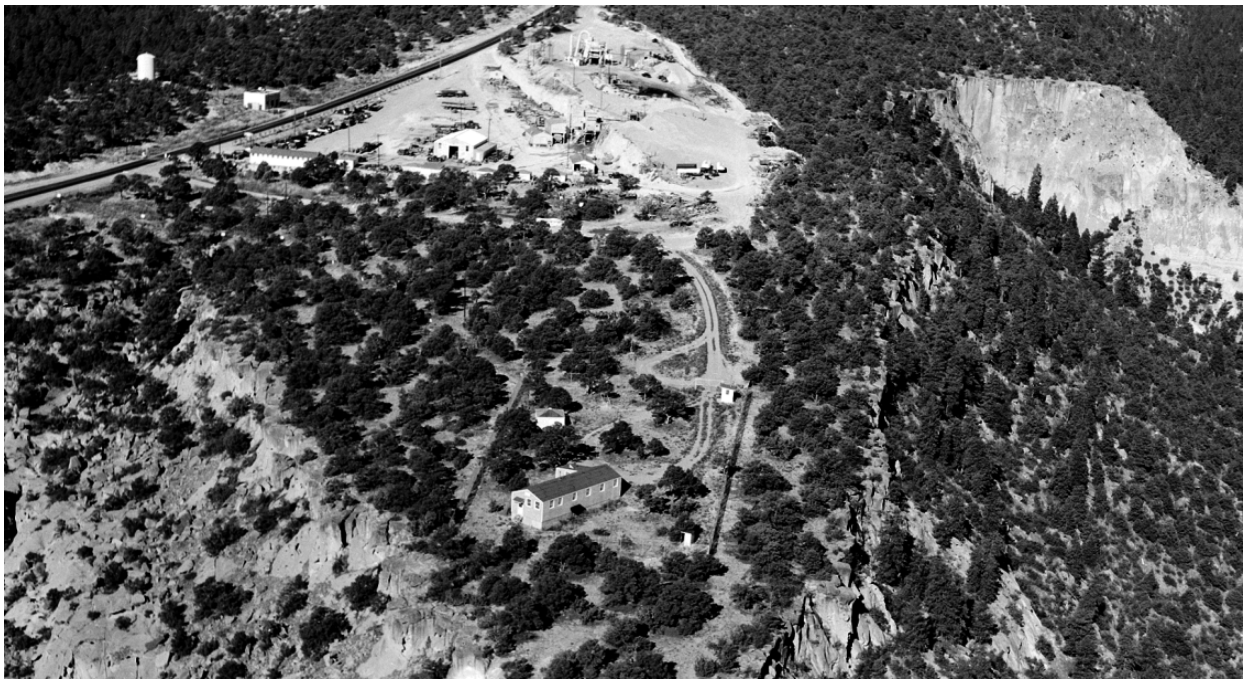


Figure 12. TA-19, East Gate Laboratory (1950)

East Gate Laboratory, also known as TA-19, was specifically established for use by Segrè's group to study spontaneous fission measurements. The technical area was located away from TA-1 in downtown Los Alamos because of the sensitive electrical equipment used by the Radioactivity Group (Figures 13, 14, and 15). The East Gate Laboratory site, inadvertently developed just outside of Project Y's eastern property boundary, was surrounded by a fence and included a main laboratory building, a small instrument or shelter building located adjacent to the main laboratory, a battery building or storage hutment, a guard building, a retreat building, and a latrine. Built during the summer of 1944, the site was active after the war until the 1960s (LANL 1992:3-8, 3-9; The Director 1947).

Figure 13. East Gate Laboratory main building, February 27, 1958

Figure 14. Interior view of Segrè's laboratory building, circa 1945

Figure 15. Interior view of main building and batteries, circa 1945

Immediately after the war, a Los Alamos physics group occasionally made use of TA-19. In the 1950s and 1960s, the East Gate Laboratory site was used for the storage of radioactive sources. Los Alamos scientists also conducted scintillation studies using aromatic compounds at East Gate Laboratory and performed sealed-source radiation experiments using monkeys as research subjects. Several of the original buildings, including the guard shack, were removed in 1956 (LANL 1992:3-8, 3-9; Maddy 1957).

During the 1960s and 1970s, the area and its remaining buildings were used to support civil defense activities conducted by the Los Alamos Radio Club (LANL 1992:3-9). The land comprising former TA-19 is located just east of the present-day East Gate Industrial Park.

TA-8-172 was constructed in November of 1944 for a cost of $300. The guard shack, known as Station 113, was originally located at TA-19 and given the property designation TA-19-3 (Figure 16) (LANL n.d.). Removed from TA-19 in 1956, it was later purchased at auction and moved to the Denver Steel neighborhood of Los Alamos (Figure 17) where it served as a garden shed. In March of 2004, the guard shack was donated back to the Laboratory and relocated to TA-21 (Figures 18 and 19). The guard shack remained there until September of 2006 when it was moved to Gun Site at TA-8, thereby reestablishing its historical association with Manhattan Project-era properties (Figures 20 and 21).

Figure 16. TA-8-172 (far left) at its original location at TA-19

Figure 17. TA-8-172 at its location in the Denver Steel neighborhood of Los Alamos

Figure 18. TA-8-172 being moved to TA-21

Figure 19. TA-8-172 at its location in TA-21

Figure 20. TA-8-172 being placed at TA-8

Figure 21. TA-8-172 at its TA-8 location

METHOD OF EVALUATION

Eligibility Criteria

Eligibility recommendations are based on National Register of Historic Places criteria, which include considerations of a property's design, its association with significant historical themes, and its physical integrity.

Associated Property Types

Manhattan Project-era security buildings and structures at Los Alamos include guard stations and physical exclusion structures such as fencing and barriers.

Portable Guard Shacks – Design Attributes

Guard posts from the Manhattan Project era were constructed as needed and did not share a standardized design. This led to variations in structural styles, but most guard posts of the period were similar in size and served generally similar functions. Because these guard buildings were assembled within a narrow timeframe, they generally featured similar building components, accessories, and construction techniques.

A glossary of building attributes for portable guard shacks was developed by examining historical photographs and building drawings. Architectural information was also gathered during the TA-8-172 building survey and through a photographic examination of two additional Manhattan Project-era guard buildings now located at Bandelier National Monument and in the Española valley.

Roof and wall framing were of standard 2-in. × 4-in. construction (Figure 22). Roofs were either of gable or shed design and covered with roll roofing (Figures 5, 23, and 24). Most portable guard shacks from the period had penetrations through the roof for stovepipes, typically in the left rear of the building (Figures 5 and 25). Exteriors were covered with rabbeted shiplap siding.

Interiors featured drywall ceilings and walls (Figures 22 and 25). Floors were made of 1-in. × 6-in. tongue and groove flooring over 1-in. × 12-in. subflooring. Floor structures consisted of 2-in. × 4-in. floor framing on top of 4-in. × 6-in. skids. Electrical systems were typically surface-mounted single fuse electrical panels with a single receptacle (Figure 26). Many guard posts were wired for telephones and radios with accompanying shelving (Figure 27). Portable guard buildings of the period were heated via a wood and coal burning stove, typically located in the back left corner of the structure (Figure 28). Fuel for the stoves were typically stored outside the guard stations in either a retaining structure or an open pile (Figure 29).

Exterior lighting is varied, with some guard stations featuring keyless exposed bulb fixtures located either on the wall above the door or on the overhanging gable roof (Figure 30). Some have industrial light deflectors (Figure 5). TA-8-172 features a custom sheet metal cover that appears to be an original component during its period of significance (Figures 17 and 31). Window styles were equally diverse, featuring double-hung (Figures 23 and 29) and casement-style (Figures 24 and 32) windows. TA-8-172 features double-hung windows with six-over-six divided lights, similar to other Manhattan era guard stations. Door locations vary, with some doors centered on the wall and some doors offset. Guard stations typically featured three-panel

doors with four-pane divided light windows, with TA-18-111 located at Bandelier National Monument as a surviving example (Figures 5, 24, and 29). The door for TA-8-172, with three wooden panels and lacking an exterior window, is likely a modification from its original construction.

Figure 22. Interior of a Manhattan era guard station, identified as TA-20-20, located in the Española valley.
Drywall remnants, secured to the exposed 2-in. x 4-in. roof framing, are present in the foreground.

Figure 23. TA-8-172 as viewed from the left rear corner of the structure.
Note the shed-style roof, roll roofing material, siding material, and six-over-six divided light, double hung windows.

Figure 24. A portable Manhattan era guard station, TA-18-111, located in Bandelier National Monument. The building features a gable-style roof, rabbeted shiplap siding, and six-pane divided light windows.

Figure 25. Inside of TA-8-172.
Note the presence of drywall paneling with a circular opening for a stovepipe located in the left rear of the ceiling. The high shelving and window-mounted pegboard are likely not original features.

Figure 26. Interior of TA-20-20 with a single fuse electrical panel and a single electrical receptacle. Remnants of the original drywall interior with historic graffiti are still present.

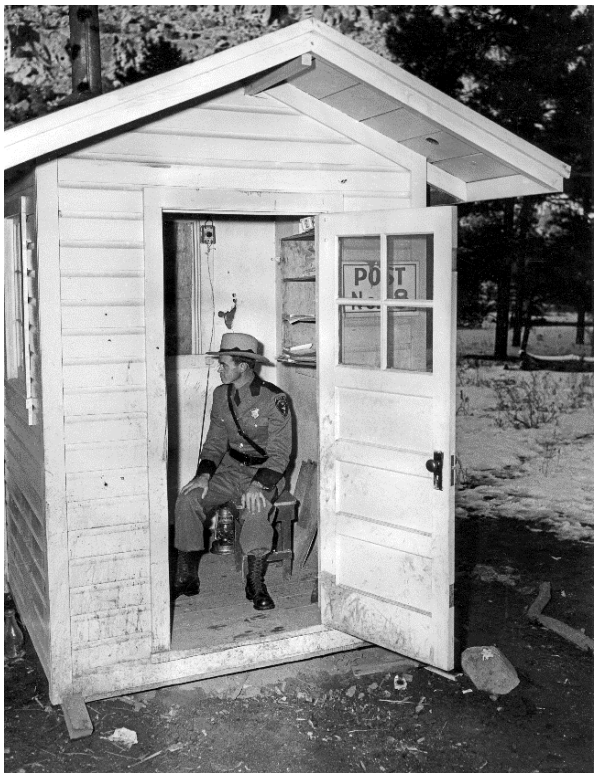


Figure 27. Historic photo of TA-20-20.

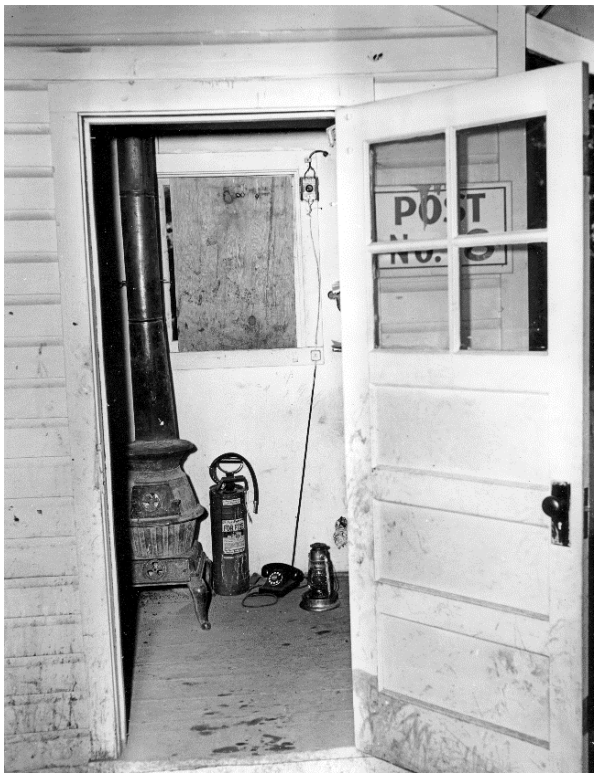


Figure 28. Historic photo of TA-20-20.
Note the presence of a telephone with fixed wiring, fire extinguisher, and a coal stove located in the left rear of the structure. Shelving units, mounted on the wall, offered storage.

Figure 29. A guard station, TA-10-30, located in Bayo Canyon with a detached wooden structure for coal storage.
An industrial-style light deflector is located above the door. Note the similarity in door styles to TA-18-111 and TA-20-20, and presence of a four-over-four divided light, double hung window.

Figure 30. Exterior of TA-20-20.
Note the historic keyless light fixture and surface mounted wiring installed underneath the gable roof.

Figure 31. Exterior of TA-8-172, as viewed from the front,
with custom sheet metal light fixture above the door.
The three-panel door is likely not an original component.

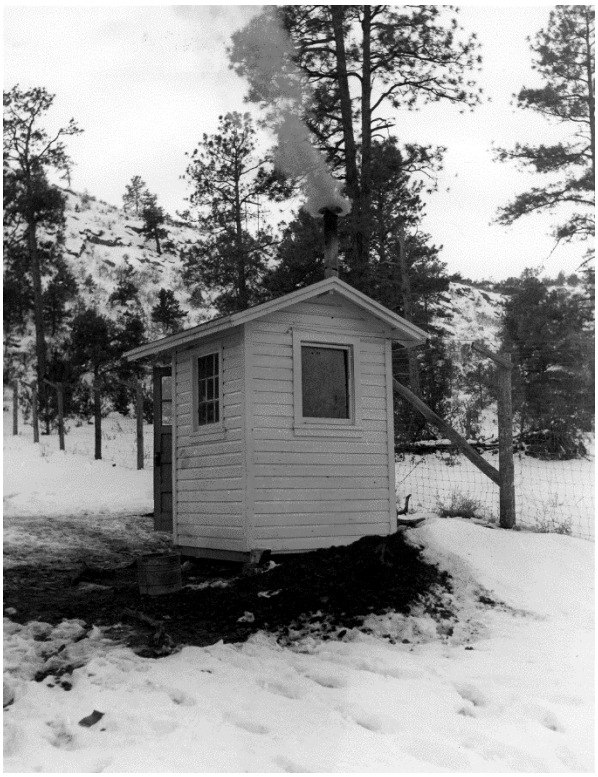


Figure 32. Reverse view of TA-20-20.
Note the presence of a single, nine-pane divided light window located along the side of the guard station.

Themes

The TA-8-172 guard station is linked to one or more Manhattan Project themes underlying the historical context of *Weapons Research, Design, and Testing.* Due to its original function as a guard station, TA-8-172 is most closely associated with the historical theme of *Administration and Social History* and the subtheme of *Security.*

The history of security at Los Alamos fits under the overall theme of *Administration and Social History* because of the need to protect buildings, information, and personnel. World War-II era guard stations, such as TA-8-172, provided physical security, were used to restrict access to specific secure areas, and were essential facilities that supported the Laboratory's wartime mission. The theme of security at LANL continues to evolve according to the demands and challenges of protecting and securing the Laboratory since its Manhattan Project origins.

Integrity

Although properties may be significant or exceptionally significant and may be eligible for the National Register of Historic Places based on association with historical events and contexts, integrity must be determined for all buildings that, on first-cut, are considered eligible. LANL historic buildings staff have developed four integrity codes to better assess potentially eligible properties. The integrity requirements for properties eligible under Criterion A are less stringent than for those properties eligible under Criterion C. A historically significant property with a level 3 integrity could still be eligible, especially if an element of historical uniqueness is

involved. Properties eligible under Criterion C should have no lower than a level 2 integrity. Level 4 integrity properties are not eligible for the Register.

1. Excellent Integrity—the property is still closely associated with its primary context and retains integrity of location, design, setting, workmanship, materials, feeling, and association. Little or no remodeling has occurred to the property and all remodeling is in keeping with its associated historic context and significant use period.

2. Good Integrity—the property's interior and exterior retain historic feeling and character but most of the original equipment may be gone. The property may have had minor remodeling.

3. Fair Integrity—a property in this category should retain original location, setting, association, and exterior design. All associated interior machinery and equipment may be absent but the key question is "Is this property still recognizable to a contemporary of the building's historic period?"

4. Poor Integrity—the property has no connection with the historically significant setting, feeling, and context. Major changes to the property have occurred. The property would be unrecognizable to a contemporary.

Criteria Consideration B: Moved Properties

Because TA-8-172 is classified as a moved property, it requires additional justification to determine its eligibility for inclusion in the National Register. Register criteria limits the consideration of moved properties because significance is embodied in locations and settings as well as in the properties themselves. Moving a property destroys the relationships between the property and its surroundings and destroys associations with historic events and persons.

A moved property poses unique concerns when determining its historic eligibility, but properties that have been moved from their original location can be deemed eligible if they meet one or more specialized requirements under Criteria Consideration B. If such a structure can satisfy these requirements, in addition to meeting regular National Register requirements (that is, being eligible under one or more of the four eligibility criteria and possessing integrity), then such a structure can be deemed eligible for inclusion in the National Register (NPS 2002).

Properties Designed to be Moved

TA-8-172, like many guard buildings in Los Alamos during the Manhattan Project, was intentionally designed to be a mobile structure. Guard facilities similar to TA-8-172 were built *ad hoc* and relocated to laboratories throughout Project Y as security considerations dictated. Lacking permanent utility connections and mounted on skids, transience is an essential historic element for Manhattan Project-era guard shacks and is a key component of TA-8-172's design.

In its present location, TA-8-172 retains a strong integrity of setting, feeling, and association with the theme of security during the Manhattan Project era. TA-8, known as Gun Site, was used to conduct weapons tests in support of the uranium gun device (the Little Boy design). Because of the sensitive nature of the high-velocity gun program at TA-8, security arrangements within the technical area were extensive. The proving grounds of Gun Site were enclosed with high-

security fencing and included perimeter guard stations strategically placed to control access to individuals with select knowledge of the gun weapon. As a landscape, TA-8 retains the integrity necessary to convey the security demands required of Project Y during the Manhattan Project era. Therefore, TA-8-172 is eligible under Criteria Consideration B because of its inherent mobility and residence in a historically appropriate setting.

Eligibility for Historic Associations

Though guard stations contemporary to TA-8-172 have been identified in the Española valley and Bandelier National Monument, TA-8-172 is the only Manhattan era security building of its type located within the boundaries of the Manhattan Project National Historical Park.

TA-8-172 has a direct connection with the historic security infrastructure of Los Alamos, supported by clearly documented provenance. Its history as a guard station for the East Gate Laboratory demonstrates direct affiliation with the military and scientific missions of Los Alamos between 1942 and 1946, and conveys the themes of secrecy and security that were essential to the wartime mission of Project Y. Therefore, TA-8-172 is eligible under Criteria Consideration B because it is the only surviving building of its type and period available to convey the themes of security and secrecy during the height of the Manhattan Project.

Eligibility for Architectural Value

Overall, TA-8-172 is a good example of the design and workmanship typical of portable guard facilities constructed for Los Alamos during the Manhattan Project. In certain circumstances where historic fabric has been altered (e.g., doors and interior shelving), enough evidence exists to preserve and restore the character of TA-8-172 through careful study of the historical record. A study of historical and contemporary photographs have identified a number of commonalities between TA-8-172 and other guard stations of the period, especially in the employment of common building materials.

As a surviving example of Manhattan Project era security infrastructure, TA-8-172 retains a sufficient number of architectural features, period materials, and workmanship to classify it as having high historical integrity. The interior drywall, double-hung windows, and rabbeted shiplap siding are original, retain the historic character of the structure, and provide important information about construction techniques and materials that are indicative of guard stations in Los Alamos during the Manhattan Project. Unique exterior elements, such as the curved sheet metal light fixture, reinforces the piecemeal nature of wartime security facility construction in Los Alamos. Therefore, TA-8-172 is eligible under Criteria Consideration B for its architectural value, retaining an overall integrity of design, materials, workmanship, and feeling indicative of guard stations constructed in Los Alamos during the Manhattan Project era.

DESCRIPTION OF EVALUATED BUILDING

Technical Area: 8

Building Number: 172
Original Function: Guard Station
Current Function: Park Building
Date Constructed: 11/1944
Architect: Unknown

Associated Theme: Security/Weapons R&D, Testing
Property Type: Security
Location Type: Interior
Integrity: Good
Core: Yes
Eligibility: Yes (Criteria A and C; Criteria Consideration B)

Buildings with same floorplan within TA: None

Buildings with same floor plan within other TAs: None


View of south side (2011)


View of the east side (2011)


View of the north side (2011)


View of the west side (2011)

Architectural Description:

Guard shack TA-8-172 is a single-story, square-in-plan building measuring 7 ft × 7 ft × 7 ft 8 in. high on the low side of the sloped roof and 9 ft 2 in. at the high side of the roof with a finished interior square footage of 38.5 ft². Constructed of 2 × 4 wood frame construction, the interior of the building is sheathed with sheetrock. The floor is covered with layers of plywood with remnants of laminate flooring on top. There is some evidence of mineral wool insulation present. The electrical system is surface mounted in conduit, and has one fourplex receptacle over one twoplex receptacle. The building featured a woodstove in the back left corner and a telephone shelf on the right back corner.

There are three wooden, double-hung six over six divided light glazed windows on three sides. The front elevation features a 2 ft 6 in. × 6 ft 8 in. wooden three-panel door. The exterior is sheathed with wood shiplap or drop siding. A temporary membrane currently covers the roof, under which is asphalt roll roofing. The original roof was likely tar and sheet roofing. Lighting consists of one keyless exposed bulb fixture on the inside and one keyless exposed bulb with a hand-made sheet metal cover on the exterior. The exterior has one waterproof twoplex receptacle on the west side and an exterior conduit in which electricity could have been connected.

Historical Background:

TA-8-172 was built in November of 1944 for use by Emilo Segrè's Radioactivity Group. Beginning in 1943, Segrè's group conducted plutonium chemistry experiments at the remote Pajarito Site (present-day TA-18), making use of several pre-war log cabins. A dedicated facility was constructed for Segre's group in late 1944 and assigned the name East Gate Laboratory (TA-19). The guard shack, originally numbered TA-19-3, served as a security check point and was positioned at the fenced entrance to the wartime technical area, which was located near Project Y's Main Gate. Like other portable guard buildings, the guard shack was designed to be moved, and, in 1956, the building was declared excess property and sold at public auction. The guard shack was then used as a garden shed in the Denver Steel housing area in Los Alamos until it was donated back to the Laboratory in 2004. Moved temporarily to TA-21 in March 2004, the guard shack was relocated in September 2006 to its present location at Gun Site, a Manhattan Project era facility. In 2015, TA-8-172 was included in the initial group of park properties that make up the newly established Manhattan Project National Historical Park, and the guard shack is currently located within the official park boundary at TA-8.

National Register Eligibility Recommendation:

TA-8-172, a Manhattan Project era guard shack, is recommended for eligibility under Criterion A (properties "associated with events that have made a significant contribution to the broad patterns of our history"), Criterion C (properties that "embody the distinctive characteristics of a type, period, or method of construction") and Criteria Consideration B (moved properties). This portable guard shack provided essential security control at a top-secret Project Y technical area during World War II. This building further symbolizes the secrecy and security theme prevalent during the Manhattan Project and embodies a category of expedient and mobile architecture in widespread use during the early Los Alamos laboratory period.

CONCLUSION

TA-8-172, a portable guard shack, is a contributing property to the Manhattan Project National Historical Park at LANL. The Department of Energy is proposing to assess, stabilize, and then restore the guard shack. A second consultation report will be prepared outlining the scope of work necessary to restore the guard shack to a condition that reflects its Manhattan Project-era period of significance.

The State Historic Preservation Officer is requested to concur that TA-8-172 is eligible for the Register under Criterion A, Criterion C, and Criteria Consideration B.

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APPENDIX A. Historic Building Inventory Form with Selected Photographs and Building Drawings for TA-8-172

LANL TA- Building # 08-0172

Camera LANL Photography, XIT-TSS

Frame #s di110144064,di110144065,di110144066,di110144067,di110144068,di110144069,di110144070

Surveyor(s) Kristen Honig

Date 2011

Los Alamos National Laboratory
RMT Historic Building Survey Form

Building Name Guard Shack UTMs easting 378302 northing 3969075 zone 13

Legal Description: Map Frijoles Quad 2002 tnsp 19N range 6E sec 19

Current Use/ Function Not in Use Original Use/ Function Portable Guard Station

Date (estimated) ca. 11/1944 Date (actual) Property Type Security

Type of Construction

Pre-Fabricated Metal ☐ Steel Frame ☐ Wood Frame ☑ CMU ☐ Reinforced Concrete ☐

Other Type of Construction # of Stories

Foundation N/A

Exterior CMU-Exterior ☐ Reinforced Concrete-Exterior ☐ Steel (galvanized) ☐ Steel (corrugated) ☐

Wood Siding ☑ Asbestos Shingles-Exterior ☐ In-Fill Panels ☐ Other-Exterior

Exterior Treatment (painted, stuccoed, etc) Painted Drop or Rabbeted Shiplap Siding

Exterior Features (docks, speakers, lights, signs, etc) A keyless porcelain light fixture with what appears to be a hand-made sheet metal weather shield is located above the door. A waterproof electrical outlet and a piece of galvanized conduit with a 90 degree elbow are located on the west side of the building. The building sits on skids that allow it to be transported from place to place.

Addition CMU-Addition ☐ Reinforced Concrete-Addition ☐ Steel (galvanized)- Addition ☐ Wood ☐

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☐ Other- Addition

Exterior Treatment-Addition

Exterior Features-Addition

Roof Form Slanted/Shed ☑ Gable ☐ Other Roof Type

Degree of Pitch/ Slope Slight

Roof Materials Corrugated Metal ☐ Rolled Asphalt ☑ Asbestos Shingles ☐ 4-Ply Built Up ☐

Other Roof Materials

Window Type Casement ☐ Single Hung Sash ☐ Double Hung Sash ☑ Fixed Window ☐

Other Window Type

# of Each Window Type/ Comments There are three, 6 over 6 panel divided light, double hung wood windows.

Glass Type Clear ☑ Wire Glass ☐ Opaque ☐ Painted Glass ☐ Glass Block ☐

Light Pattern: 6 over 6 divided light

Door Type

Personnel Door Types — Exterior: Fire Door ☐ Single ☑ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☐ Solid Wood ☑ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☐

Personnel Door Types — Interior: Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☐

Equipment Door Types — Exterior: Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☐

Equipment Door Types — Interior: Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☐ Solid Metal ☐ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☐

# of Each Door Type/Comments: One exterior door. The door is a three panel wooden door. This door may not be original as a review of historic photographs shows that guard shack doors were typically half glazed.

Interior Wall: Gypsum Board ☑ Reinforced Concrete- Interior ☐ CMU- Interior ☐ Plywood ☐ Other- Interior ☐ In-Wall Electrical Wiring ☐ On-Wall Electrical Wiring ☑

Ceiling: Drop Ceiling ☐

Interior Comments (Equipment, etc): There is one fourplex receptacle over one twoplex receptacle.

Degree of Remodeling: Moderate

Condition: Excellent ☐ Good ☐ Fair ☐ Deteriorating ☑ Contaminated ☐ Burned ☐

Associated Buildings ☐

If yes, list building names and #s

Integrity: Good

Significance: Eligible

Eligible Under Criterion: A ☑ B ☐ C ☑ D ☐ Not Eligible ☐

DOE Themes

Nuclear Weapon Components and Assembly ☐ Nuclear Weapon Design and Testing ☑ Nuclear Propulsion ☐

Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy, Nuclear Science ☐ Energy and Environment: Research and Design Projects ☐

LANL Themes

Weapons Research and Design, Testing, and Stockpile Support ☑ Super Computing ☐

Reactor Technology ☐ Biomedical/Health Physics ☐ Strategic and Supporting Research ☐

Environment/Waste Management ☐ Administration and Social History ☑ Architectural History ☑

Recommendations/ Additional Comments

Architectural Features (elevations)

The front elevation features a single wood door and an overhanging shed roof. A keyless exposed light fixture with a hand-made sheet metal cover is mounted above the door on the exterior. There is one keyless exposed light fixture on the inside of the building. Three wooden double-hung six over six divided light windows are present on the three other sides of the building. The building sits on skids as part of the portable design.

Total sq ft 38.5 sq ft Net

Architect/ Builder Unknown

Alterations

The shed was moved to the Denver Steel neighborhood in Los Alamos in 1956. Shelving was added and the front door was likely replaced at this time.

List of Drawings (Cntrl + Enter for para break)

Manhattan Era Buildings Historic Context (as built) June 15, 2011

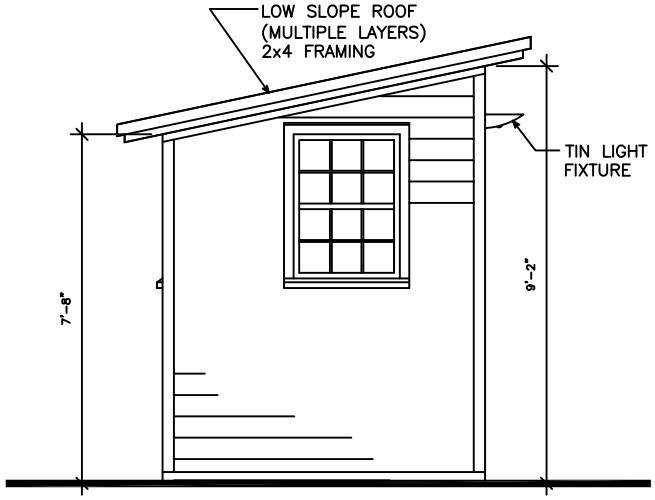
TA-8-172, front and right sides

TA-8-172, right side

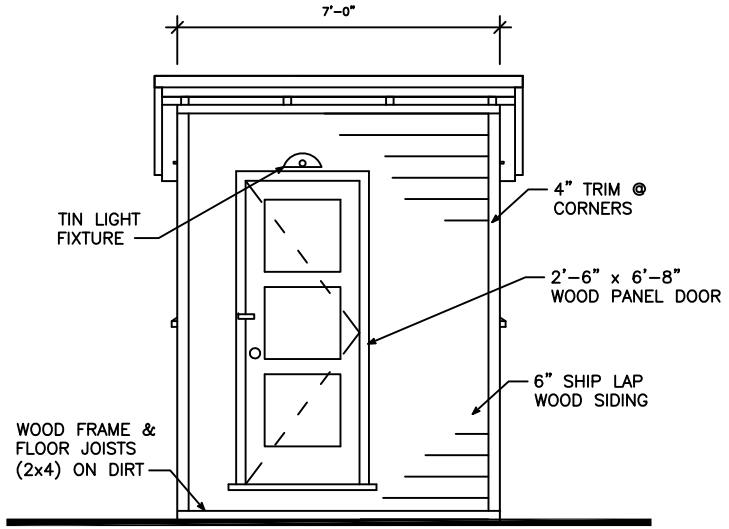
TA-8-172, back side


TA-8-172, left and front sides

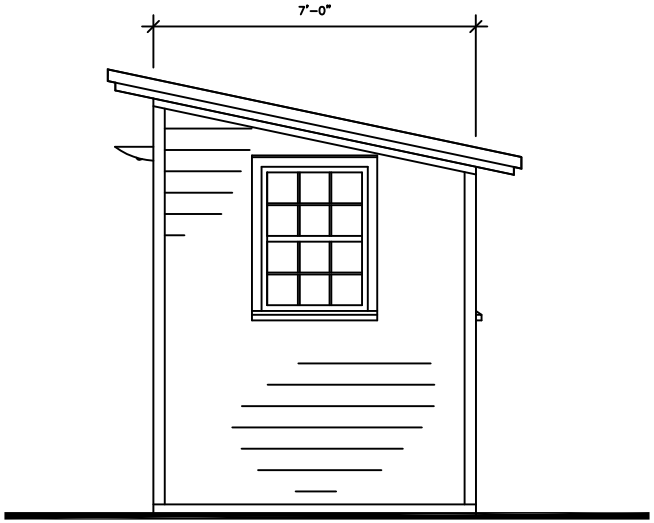
TA-8-172, back left sides and roof



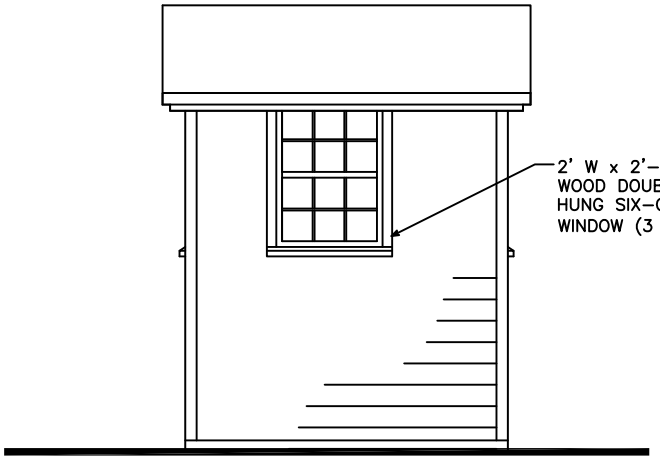
WEST ELEVATION
SCALE: 3/4"=1'-0" 1' 0 1' 2' 3'
1 / A-1



SOUTH ELEVATION
SCALE: 3/4"=1'-0" 1' 0 1' 2' 3'
2 / A-1



EAST ELEVATION
SCALE: 3/4"=1'-0" 1' 0 1' 2' 3'
3 / A-1



NORTH ELEVATION
SCALE: 3/4"=1'-0" 1' 0 1' 2' 3'
4 / A-1

MANHATTAN ERA BUILDINGS
HISTORIC CONTEXT

DRAWN	K. HONIG
DESIGN	—
CHECKED	K. TOWERY
DATE	JUN 15

TA-8-172 GUARD POST
SUBMITTED APPROVED FOR RELEASE

Los Alamos NATIONAL LABORATORY
PO Box 1663
Los Alamos, New Mexico 87545

SHEET A-1
1 OF 1

CLASSIFICATION REVIEWER DATE